

THE TENSE SYSTEM IN GOMBE FULA

by

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ABSTRACT

Investigation of the Gombe variety of Fula has shown the importance for a description of the tense system, not only of differences in the tense suffix but also of the behaviour of other elements - the radical, 'subject element', 'object element', and 'preterite element' - which are linked with the tense suffix in what is here treated as a 'verbal complex'.

The aim of this thesis is to demonstrate the interdependence of all these elements; to determine the relevance to the tense system of each of them, and also of certain other features of the complex - its intonation pattern, and a phenomenon here called 'final glottality'; and to establish the nature of the relationship between all these features.

A preliminary examination of sample complexes in certain selected tenses shows in outline the interdependence of the elements and the importance of the various features in these selected tenses.

The whole range of tenses is then studied, and each feature is examined in turn.

Attention is given first to differences in the arrangement of the elements, then to the behaviour of the individual elements, first of 'minimal' complexes and then of 'enlarged' complexes, and conclusions are drawn about their relationships to each other and their relevance to the tense system.

Next a broader consideration of tense suffixes leads to further generalisations about some of the patterns observed.

Lastly attention is given to the significance of differences (a) in the intonation pattern of the complex and (b) in the incidence of final glottality.

The concluding chapter summarises previous findings, which have demonstrated the interdependence of the various features of the verbal complex, establishes the degree of relevance of each to the tense system, and on the basis of the proved relationships between the features, suggests an order of priority for descriptive purposes.

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Chapter 1

Introduction

This thesis is concerned with certain features of the tense system in the variety of Fula¹ spoken by the Fulani of the Gombe Division of Bauchi Province, Northern Nigeria.

The most obvious criterion for the formal differentiation of tenses in Fula is the shape of the tense suffix, which, together with the radical, comprises the core of every verbal form. But an investigation of the verbal system in the Gombe variety of Fula has shown that this core is so closely linked with certain other elements - here called 'subject element', 'object element' and 'preterite element'² - that it cannot properly be considered apart from them; and that in fact radical, tense suffix, and these other elements are best treated together as a complex, which for the purposes of this thesis will be called the verbal complex.³ The investigation on which this thesis is based has also shown that no description of the tense system can be adequate which does not take into account the behaviour of each of

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1. The use of the term Fula in preference to the usual term Fulani - which is the Hausa name for the people, not the language - is explained in my article The Middle Voice in Fula, BSOAS, 1956, xviii/1.
 2. The first two of these are the Subject Pronoun and Object Pronoun of traditional grammar. The preterite element (-no or -noo) is associated with a particular aspect of meaning; it refers to time past, and implies that the situation has since changed. cf. Appendix A.4
 3. For further details, see Appendix A.1, and section (a) of Chapter 2.

the elements of the complex, the arrangement of the elements in relation to each other, and also certain other features of the complex, viz. its basic intonation pattern,¹ and the phenomenon which for the present purpose is called 'final glottality'.¹ Furthermore, these features are interrelated in such a way that the incidence of alternant patterns in one of them can often be described only by reference to one or more of the other features.

The aim of this thesis is therefore to demonstrate the interdependence of the various features of the verbal complex, and to determine their relevance to the tense system and the nature of the relationship between them.²

The Gombe variety of Fula has not previously received detailed attention,³ nor have the very similar varieties spoken in the north-central and north-eastern Provinces of Northern Nigeria (Kano, Katsina, Zaria, Bornu and the rest of Bauchi). There are a number of grammars

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1. For an explanation of these terms see Appendix A, sections 2, and 3 and Chapter 7.
 2. In a complete study of the tense system it would be necessary to examine the grammatical relationship between the various elements of the complex and words outside the complex, and the syntactical implications of different tenses. But discussion of these external relationships of the complex and its components would produce a thesis of excessive length and complexity. This thesis is therefore restricted to the discussion of the internal relationships within the complex and the relevance to the tense system of the features of the complex itself. For this reason the complex is throughout the thesis considered in isolation from its context.
 3. Apart from my article The Middle Voice in Fula, BSOAS, 1956, xviii/1, also Some Features of the Nominal Class System of Fula in Nigeria, Dahomey and Niger, Afrika und Ubersee, Band XLIII/4 - 1960. Most of the material for the present study was obtained from two Fulani who worked with me in London - Malam Jalo Gombe (now Wazirin Gombe) and Malam Ibrahim Abubakar; the material supplied by them was later checked and supplemented by other speakers in Gombe Division during a visit to Nigeria in 1955, and by Malam Aliyu Abubakar in London.

dealing with other dialects, in which various features of the verbal system are described in more or less detail. In some of these, particularly the grammars of Arensdorff¹ and Labouret², some of the specific features discussed here receive brief mention, or are noted incidentally in lists of paradigms. But all are written on traditional lines, and the treatment of 'Subject and Object Pronouns' is usually divorced from that of the verb; and even where the systematisation of the tenses is more comprehensive the aspects of the tense system with which this thesis is concerned - in particular the interrelation of the various elements - have nowhere received exhaustive or systematic treatment.

The Gombe variety of Fula, it may be added, is particularly suitable for the present purpose, since there is greater variation in certain parts of the verbal complex than in most other dialects, yet the general pattern of its tense system is sufficiently typical of the language as a whole for the principles underlying it to be applicable, *mutatis mutandis*, to other dialects.

This thesis consists of a preliminary study (Chapter 2), five main chapters, and a concluding chapter.

The preliminary study begins with a short account of the composition of the verbal complex, the range of tenses, and the basic distinction between minimal and enlarged complexes. Sample complexes of both types from a number of selected tenses are ^{then} examined and compared. This examination shows the inadequacy of a description of these

1. L. Arensdorff, Manuel Pratique de Langue Peulh, Paris, 1913.

2. H. Labouret, La Langue des Peuls ou Foulbé, I.F.A.N., Dakar, 1952.

tenses based on an account of differences in the tense suffix alone, and the importance not only of the other elements of the complex - subject element, radical, object element, and 'preterite element', but also of the basic intonation patterns and the presence or absence of final glottality.

The applicability of these findings to the whole range of tenses is tested in the subsequent chapters.

In the third chapter the arrangement of the elements is studied, first in minimal and then in enlarged complexes; various patterns of arrangement are ~~also~~ established, and their relevance to the tense system is demonstrated.

In the fourth chapter the elements of minimal complexes are examined, separate sections being devoted to the subject element, the radical and the tense suffix. The relevance of each of these elements to the tense system is noted, and their relationship to each other is established.

In the fifth chapter, dealing with enlarged complexes, the supplementary elements involved - object and preterite elements - are studied in turn, as well as the behaviour in enlarged complexes of the basic elements which are found also in minimal complexes. Again the relevance of these elements to the tense system is noted, and their relationship to each other is established. Particular attention is given to the relationship between the tense suffixes found in corresponding minimal and enlarged complexes, and to the possibility of making a generalised statement for each tense covering the tense suffix in all types of complex.

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In the sixth chapter a broader view is taken of the whole range of tense suffixes of all tenses, and some further generalisations are made about the patterns of alternance in the tense suffix itself, and about the relationship between these patterns and the other elements of the complex.

In the seventh chapter the two remaining features of the verbal complex are considered. The incidence of final glottality and the basic intonation patterns of verbal complexes are examined in turn, and conclusions are drawn about their relevance to the tense system and their relationship to the individual elements of the complex.

In the final chapter the findings of the preceding chapters are drawn together, and general conclusions are reached. First the exact degree of relevance to the tense system of each feature of the verbal complex is determined; then the nature of the relationship between the individual features is summarised, and an order of priority for descriptive purposes is suggested. Finally a twofold conclusion is reached: firstly, that in spite of their different degrees of relevance, a full description of the tense system must include an account of each of the elements and of their arrangement, and also of the basic intonation patterns and the incidence of final glottality; and secondly, that while the various features of the complex are intricately interrelated, there is an optimum order of treatment which makes it possible to describe the tense system in a reasonably coherent and economical manner.

Chapter 2

A Preliminary Study

(a) The Verbal Complex and its Component Elements

2.1. The core of all verbal forms in Fula is a segment (the verb of traditional grammar, here called the base), which may be analysed as consisting of a radical and one of a series of tense suffixes (T.S.)¹, e.g. wi'-ii "said". But as has already been noted, investigation has shown that the tense system cannot be adequately described without reference to various other features, including the elements here termed subject element (S.E.), object element (O.E.), and preterite element (P.E.);² for there are, as this thesis will show, close grammatical and phonological links between these elements and the base.

2.2. This study of the tense system will therefore be concerned with the totality of base plus one or more of the above-mentioned elements;³ this will be treated for the present purpose as a single entity to be called a verbal complex, or simply a complex, the unity of which will here be emphasised in writing by linking the component parts by hyphens,⁴ mi-wi'-ii-no-mo "I had said to him", consisting of

1. These tense suffixes may be defined by listing, cf. Appendices H and K. They differ from nominal suffixes in not being signs of agreement or 'concord elements'.
2. cf. note 2 on page 5.
3. Imperative forms, which have no subject element, seem best treated as verbal interjections, not as tense forms, and so are omitted from this study.
4. The normal practice is to write the S.E. and O.E., and often the P.E., as distinct words in most circumstances.

S.E. mi-, radical wi'-, T.S.-ii, P.E. -no, and O.E. -mo.

2.3. Various types of complex need to be distinguished, on the basis of their length and composition, as follows :-

- (1) Minimal complexes, consisting of S.E.¹ + base. (radical + T.S.) alone, these elements being regarded as the 'basic' elements of a verbal complex, e.g. mi-wi'-ii "I said".
- (2) Enlarged complexes, consisting of S.E. & base, together with one or more of the other elements, and classified as follows, on the basis of the 'supplementary' elements they contain :-
 - (a) 1-object complexes,² containing an O.E. but no P.E., e.g. mi-wi'-ii-mo "I said to him"
 - (b) Preterite complexes, containing a P.E. with or without an O.E., and divided into
 - (i) Simple preterite complexes, e.g. mi-wi'-ii-no "I had said", and
 - (ii) Preterite 1-object complexes,² e.g. mi-wi'-ii-no-mo "I had said to him".

(b) Tense and Voice

2.4. The total number of minimal complexes containing a given radical is very great, especially since Fula has a nominal class system comprising (in Gombe) 25 different classes, each of which has its

1. Including zero S.E., in conjunction with a subject nominal, cf. Appendix E .

2. 2-object complexes and Preterite 2-object complexes are not uncommon, e.g. mi-hokk-ii-mo-nde "I gave him it" mi-hokk-ii-no-mo-nde "I had given him it". But since their relation to the tense system is identical with that of 1-object and preterite 1-object complexes, they can be ignored here. But see Appendix C .

concordant S.E. occurring in verbal complexes (cf. Appendix .E...).

But these complexes can be arranged in a relatively small number of tense paradigms, i.e. paradigms of minimal complexes occurring in comparable contexts and having a common semantic substratum, and in which the S.E.'s form a single substitution series (cf. the tense la paradigm of the radical fot-, given in Appendix D). Paradigms of different radicals, which are comparable in all respects apart from the radical, may be said to belong to the same tense, and so may the individual minimal complexes of which they are composed. The term 'tense' therefore refers to the whole array of such comparable paradigms of minimal complexes. The term is strictly applicable only to minimal complexes, but it may also be used by extension to apply to enlarged complexes, which may be said to belong to the same tense as the minimal complex to which they are related. For example, all the complexes given in § 2.3 may be said to belong to the same tense.

2.5. In the Gombe variety of Fula a total of 42 different tenses may be distinguished (cf. Appendix G, which contains a conspectus of representative complexes¹ of all tenses, and an indication of their

1. Paradigms of nearly all tenses consist, at least potentially and within the limits of semantic compatibility, of 32 complexes, corresponding to the 32 different categories of S.E., indicated in Appendix E. But differences in the shape of 3rd person S.E.'s associated with the nominal class system, can be ignored here as irrelevant to the tense system. It is sufficient for the present purpose to refer at most to 9 categories of complex, corresponding to the 9 main categories of S.E.:-

- * 3rd person singular, class elements
- * " " plural " "
- = 3rd person singular, zero S.E.
- = " " plural " "
- * 1st person singular
- * 2nd person singular
- * 1st person plural (he/they and I)
- * 2nd person plural inclusive (including the speaker) (you and I)

{continued at foot of next page}

range of meanings). These tenses may however be arranged in three series, which may be called Voices ([a] Active, [b] Middle and [c] Passive the tenses of each voice being linked by common syntactical implications and a common semantic substratum.² Since this thesis is not concerned with the meanings associated with the various tenses, the tenses will be referred to by numbers and not by names; but since each tense in series [a] usually has a counterpart in both series [b] and series [c], some economy of description may be achieved by using the same number to refer to the corresponding tenses of the three voices, and adding a letter, a, b or c to indicate the voice. Thus the "General Past" tenses, Active, Middle and Passive, will be referred to collectively as "tenses numbered 1" and individually as tenses 1a, 1b and 1c; and the other tenses will be referred to similarly.

(c) The relevance to the tense system of features other than the Tense Suffix

2.6. A glance at the conspectus of tenses in Appendix G shows that the greatest difference between the paradigms of various tenses is in the T.S.; and in many cases the T.S. is in fact the only distinguishing

1. "continued from foot of previous page".

* 2nd person plural exclusive (excluding the speaker) (you)
For most tenses the distinction, among 3rd person S.E.'s, between class elements and zero S.E. is irrelevant, and the full paradigm is in most cases adequately represented by at most a 'part-paradigm' consisting of complexes of the seven categories marked with asterisks. For the purpose of this thesis it will usually be convenient to list the complexes in the order given.

2. cf. my article The Middle Voice in Fula, BSOAS 1956, xviii/1

feature. Thus the only difference between the paradigms of tense 1a (represented by 'o-suud-ii "he hid" and 6e-shuud-ii "they hid") and of tense 1b (represented by 'o-suud-ake "he hid himself" and 6e-shuud-ake "they hid themselves") lies in the contrast between the T.S.'s -ii and -ake, which are in fact constant throughout the paradigms of this and of all other radicals.

2.7. But the same is not true of all pairs of tenses, as may be seen by examining sample complexes from certain selected tenses. Consider first the following part-paradigms containing representative complexes of tenses 1a, 11b and 14b with the radical suud-/shuud- "hide" :-

	<u>1a</u>	<u>11b</u>	<u>14b</u>
3 sing	'o-suud-ii	'emo-suud-ii'	'o-suud-ii'
3 pl.	6e-shuud-ii	'e6e-shuud-ii'	6e-shuud-ii'
1 sing.	mi-suud-ii	'emi-suud-ii'	shuud-ii-mi'
2 "	'a-suud-ii	'e'a-suud-ii'	shuud-i-daa'
1 pl.	min-shuud-ii	'emin-shuud-ii'	min-shuud-ii'
2 " incl.	'en-shuud-ii	'e'en-shuud-ii'	shuud-ii-den'
2 " excl.	'on-shuud-ii	'e'on-shuud-ii'	shuud-ii-don'
	"he hid" ¹	"he was in	"he went into
	etc.	hiding" etc.	hiding", etc.

When tenses 1a and 11b are compared, it is clear that the T.S., -ii in both tenses, is not a differentiating feature, and that the difference between the two tenses lies in (a) the difference in the shape² of the S.E. (e.g. 'o- as against 'emo-) and (b) the fact that tense 11b complexes have final glottality³ (indicated by the final apostrophe), while tense 1a complexes do not.

-
1. 'o-suud-ii can also be translated "he has hidden", "she hid", and "she has hidden". But for brevity one translation only of each example will be given.
 2. This term was apparently adopted in a specialised sense by M. Guthrie in his Ph.D. Thesis on "The Tonal Structure of Bemba", (London 1945) and has subsequently been used by him in various published works. In the present thesis the term "shape" will be used to refer to the total pattern of any particular occurrence of an element in terms of consonants & vowels.
 3. See Appendix A and Chapter 7.

2.8. Again, when tense 14b is compared with tenses 1a and 11b, we see that while the T.S. in most tense 14b complexes is -ii, in the 2 sing. complex it is -i, i.e. there is variation in the shape of the T.S. within the paradigm. In addition (a) there is a difference in the distribution of the two shapes of the radical, shuud- occurring in 1 sing. and 2 sing. complexes of tense 14b as well as in the plural complexes, whereas in tenses 1a and 11b it is confined to plural complexes; (b) there is a difference in the arrangement of the elements, the S.E. following the base in the 1 sing. and the three 2nd person complexes in tense 14b, whereas in tenses 1a and 11b it precedes the base in all complexes; (c) S.E.'s of some categories have the same shape in tense 14b as in tense 1a, but those of other categories have different shapes in all three tenses; (d) tense 14b resembles 11b but not 1a in having final glottality.

2.9. When we compare complexes of tenses 1a and 14b containing an extended radical,¹ such as that meaning "wash with", we find that the radical has two different shapes, lootir- and lootor-. The first occurs in all tense 1a complexes, such as 'o-lootir-ii (saabunde) "he washed with (soap)", while the second occurs in all tense 14b complexes, such as 'o-lootor-ii (saabunde) "he washed himself with (soap)". The shape of such a radical is thus a further feature to be taken into account in describing these two tenses.

2.10. The shape of the radical is also relevant in tense 2a,

1. For extended radicals, see § 4.8. below.

where the T.S. is different with different radicals, e.g.

(Radical loot-)	'o-loot-u	he <u>washed</u> ¹
(" 'anndin-)	'o-'anndin	he <u>informed</u>
(" suudf-)	'o-suudf-u or 'o-suudf	he <u>hid</u>

The T.S. in these complexes is respectively -u, Zero, and a free variation between -u and Zero, and it is clear that the T.S. of this tense, in contrast with those of tense 1a, 11b and 14b, cannot be described without reference to differences of radical.

2.11. When tenses 1a, 1c and 6c are compared, we find that there is a difference not only in the T.S., but also in the basic intonation pattern² associated with complexes of the three tenses, the 'intonation peak'² (here indicated by the superscript symbol ' above the relevant vowel) coinciding with the vowel of the radical in complexes of tenses 1a and 1c, but with the first vowel of the T.S. in tense 6c complexes, e.g.

1a	'o-suudf-ii	(- - -) he hid
1c	'o-suudf-aama	(- - -) he was hidden
6c	'o-suudf-aaka	(- - -) he was not hidden

Further differences are observed when minimal ^{complexes} and 3 types of enlarged complex of tenses 1a and 14b are studied, e.g.

1a	'o-suudf-ii	he hid
	'o-suudf-ii-mo'	he hid him
	'o-suudf-ii-ma	he hid you
	'o-suudf-ii-no	he had hidden
	'o-suudf-ii-no-mo'	he had hidden him
	'o-suudf-ii-no-ma	he had hidden you

1. When a verb is underlined in the translation of an example it indicates emphasis on the action of the verb - a common aspect of the meaning associated with tenses 2a, 2b and 2c.

2. cf. Appendix A(2 and Chapter 7 sections (b).

14b	'o-suud-ii'	he hid himself
	'o-suud-ii-mo'	he hid himself from him
	'o-suud-i-maa'	" " " " you
	'o-suud-i-noo'	he had hidden himself
	'o-suud-i-noo-mo'	he had hidden himself from him
	'o-suud-i-no-maa'	he " " " " you

Here the 1a T.S. is constant in all four types of complex, whereas the 14b T.S. is different in some of the enlarged complexes; and there is also a difference in the shapes of the 2 sing. O.E. (-ma and -maa) and the P.E. (-no and -noo/-no).

2.12. Furthermore, within tense 1a there is final glottality with the 3 sing. O.E. -mo but not with the 2 sing. O.E. -ma; and within tense 14b there is a variation in the T.S. in 1-object complexes according to whether it is followed by the 3 sing. or 2 sing. O.E., and a similar variation in the shape of the P.E. in 1-object preterite complexes. In short it can be said that, so far as the complexes quoted above are concerned, there is in tense 1a a correlation between the category of O.E. and the incidence of final glottality, and in tense 14b a correlation between the category of O.E. and the T.S., and again between the category of O.E. and the shape of the P.E.

2.13. To summarise this section it is clear that in the tenses examined above certain features other than the T.S. must be regarded as important characteristics of the tense. These features include the shape of the S.E., the arrangement of the elements, various aspects of the radical, the presence or absence of glottality, the basic intonation pattern, and - in enlarged complexes - the shape of the O.E. and P.E..

It is also clear that, in the tenses considered, some of the features cannot be adequately described except by reference to certain other features.

2.14. In the ensuing chapters the whole range of tenses¹ will be examined to show the extent to which the above conclusions, relating to a few selected tenses, are applicable to the tense system as a whole, and to determine both the relevance of the various features of the complex to the tense system, and their relationship to each other.

1. cf. the representative minimal and enlarged complexes set out in Appendices G and J respectively.

Chapter 3

The Arrangement of the Elements

3.1. The arrangement of the elements - that is to say, the order in which they occur within the complex - will be considered first, since it is itself an important feature of the tense system, and also proves to be a useful basis for describing the behaviour of other features of the complex. The subject will be dealt with in two sections, the first concerned with minimal complexes, the second with enlarged complexes and with generalisations covering all types of complex. But three preliminary points may be made, relevant to both minimal and enlarged complexes.

3.2. Firstly in all types of complex (as subsequent examples will show) the T.S. - or a part of it - follows immediately after the radical, without the possibility of any other element intervening. Accordingly from the point of view of the arrangement of the elements the base may, with the single exception of tense lc discussed in § 3.11 below, be treated as a single unit; and in the examples quoted in this chapter the base will normally be written without a hyphen separating radical and T.S..

3.3. Secondly, it is convenient to represent the arrangement of the elements by means of formulae in which

the subject element is symbolised by S			
the base	"	"	" B
the preterite element is	"	"	" P
the object element is	"	"	" O

Thus the formula S-B-P-O may be used to represent the arrangement of the elements in an enlarged complex (such as 'o-suudake-no-mo "he had hidden from him") in which the base is preceded by the subject element and followed by the preterite element, with the object element in final position.

3.4. Thirdly, it is convenient to group together tenses which will be shown to be marked by the same pattern of arrangement, as follows:-

- Group A. Tenses numbered 1-8, divided into three sections,
 - A(i) Tenses numbered 4 and 5.
 - A(ii) Tenses 1a, 1b, and tenses numbered 2-3, 6-8.
 - A(iii) Tense 1c.
- Group B. Tenses numbered 9 and 10.
- Group C. " " 11 and 12.
- Group D. " " 13.
- Group E. " " 14 and 15.

(a) Minimal Complexes

3.5. In minimal complexes of tenses of groups A-C, the S.E. precedes the base throughout the paradigm, e.g. (tense 1b)

3 s.	'o-suudake	he went into hiding
3 pl.	ʒe-shuudake	they went into hiding
1 s.	mi-suudake	etc.
2 s.	'a-suudake	
1 pl.	min-shuudake	
2 pl. excl.	'on-shuudake	

The arrangement of the elements in this group of tenses may therefore be indicated by the formula S-B.

3.6. In tenses of group D, the S.E. precedes the base only in complexes of the 3rd and 1st persons singular and plural, e.g. (tense 13b)

3 s.	'o-suudoo ¹	he is to go into hiding
3 pl.	6e-shuudoo	they are to go into hiding
1 s.	mi-suudoo	etc.
1 pl.	min-shuudoo	

In all 2nd person complexes, on the other hand, the S.E. ^{follows} precedes the base, e.g.

2 s.	shuudo-daa ²	you are to go into hiding
2 pl. incl.	shuudoo-den	you and I " "
2 pl. excl.	shuudoo-don	you " "

The position may be described by saying that two different arrangements occur in these tenses, represented by the formulae S-B and B-S respectively, and there is correlation between the categories of S.E. and the distribution of the two arrangements.

3.7. In tenses of group E, the S.E. precedes the base in complexes of all 3rd persons and the 1st person plural e.g. (14b)

3 s.	'o-suudii	he went into hiding
3 pl.	6e-shuudii	etc.
1 pl.	min-shuudii	

but it follows the base in the 1st singular complex as well as all 2nd person complexes, e.g.

1 s.	shuudii-mi	I went into hiding
2 s.	shuudi-daa	etc
2 pl. incl.	shuudii-den	
2 pl. excl.	shuudii-don	

1. This complex, as well as many others quoted, actually has final glottality; but this is not marked in chapters 3-6, since it is not of immediate relevance. For details, see section (a) of chapter 7.

2. Variations in the shape of T.S., S.E., P.E. and O.E. within a single tense (such as the -oo/-o variation in T.S. here) are discussed in subsequent chapters.

Here again, then, the arrangements S-B and B-S both occur, but the distribution of the two arrangements among the various complexes, although still describable in terms of the category of S.E., differs from the distribution in group D tenses.

3.8. Thus when minimal complexes alone are considered, tenses may be distinguished according to whether they are characterised (a) by the same arrangement of S.E. and base in all complexes or (b) by two different arrangements; and in the latter case they may be further distinguished by the different distributions of the two arrangements among the various complexes.

(b) Enlarged Complexes.

3.9. In enlarged complexes the S.E. occupies the same position in relation to the base as in the corresponding minimal complexes. But there is considerable variety in the position of the other elements; and each section of group A as well as each of the other groups of tenses must be considered separately.

Group A (tenses numbered 1-8)

3.10. In 1-object complexes of every group A tense the object element always follows the base, and so occupies final position in the complex, e.g. (1b) 'o-suudake-mo¹, 'o-suudake-ma "he hid from him, from you".²

-
1. In this chapter the element underlined in the examples is the element - P.E. or O.E. - whose position is being considered at the time.
 2. In translations of 1-object complexes of middle voice (series b) tenses, "hide from", "hid from" "had hidden from" etc. = "hide himself from", "hid himself from" etc.

Thus the formula S-B-O may be used to indicate the arrangement of the three elements in such complexes.

3.11. When preterite complexes are considered, different patterns are apparent within this group of tenses. Firstly there are some tenses in which preterite complexes do not occur at all; and secondly, where they do occur, the preterite element occupies different positions in different tenses.

Section (i) (Tenses numbered 4 and 5). Preterite complexes do not occur in any of these tenses; the longest type of complex under consideration¹ is the 1-object complex (e.g. 4b 'o-suudocma-mo "he'll hide from him", 5b 'en-shuudo-mo "let's hide from him"), the formula for which is S-B-O.

Section (ii) (Tenses 1a, 1b, and tenses numbered 2-3, 6-8). In all these tenses the P.E. follows immediately after the base, coming between base and O.E. in preterite 1-object complexes, e.g. (1b)

'o-suudake- <u>no</u>	he had hidden himself
'o-suudake- <u>no</u> -mo	he had hidden from him.

The appropriate formulae here are S-B-P in simple preterite complexes and S-B-P-O in preterite 1-object complexes.

Section (iii) (Tense 1c). In most preterite complexes of this tense the base cannot be treated as a single unit. The

1. i.e. apart from 2-object complexes.

four types of complex may be illustrated as follows:-

(a) Minimal	'o-suudaama	he has been hidden
(b) 1-object	'o-suudaama-mo	" " " " from him
(c) Simple preterite	'o-suudanooma	" had " hidden
(d) Preterite 1-object	'o-suudanooma-mo	" " " " from him.

The first two examples could be analysed as consisting of S.E. + base, and S.E. + base + O.E. respectively, the base consisting of radical suud- + tense suffix -aama in each case. But (c) and (d) are more appropriately described as having, instead of a single T.S., two moieties -a- and -ma, with the P.E. -noo- intervening between them. Since the pattern -V-noo in preterite complexes frequently corresponds to -VV- in non-preterite complexes (V and VV representing short and long vowels respectively)¹, the -a- moiety in (c) and (d) may be regarded as the counterpart of the -aa- in (a) 'o-suudaama. The T.S. -aama may then be treated as consisting of the two moieties -aa- and -ma, which are in juxtaposition in (a) and (b), while their counterparts in (c) and (d) are separated by -noo.

If then the radical is symbolised by R and the two moieties of the T.S. by t_1 and t_2 respectively, the arrangement of the elements in the four types of complex in this tense may be indicated by the formulae (a) S-R- t_1 - t_2 , (b) S-R- t_1 - t_2 -O, (c) S-R- t_1 -P- t_2 , and (d) S-R- t_1 -P- t_2 -O.

ff.
1. cf. §5.4¹ below. The alternation of -aama in minimal complexes with -a-noo-ma in preterite complexes has parallels in tenses 6b and 6c, in some other dialects, such as that of Masina, e.g.
6b 'o-suud-aaki beside 'o-suud-a-noo-ki
6c 'o-suud-aaka " 'o-suud-a-noo-ka
cf. Labouret, La Langue des Peuls ou Foulbé, § 234 and contrast 'o-suudaaki-no and 'o-suudaaka-no in Gombe.

There is an alternative but unusual arrangement in which the P.E. follows the base, e.g. 'o-suudaama-no (-mo) "he had been hidden from (him)". The formulae for these exceptional cases would be (c) S-B-P and (d) S-B-P-O, as for section (ii) tenses.

3.12. The formulae for the four types of complex in each of the sets of tenses in group A may then be set out as follows:-

<u>Section:</u>	(i)	(ii)	(iii)
<u>Type of Complex</u>			
Minimal	S-B	S-B	S-R-t ₁ -t ₂
l-object	S-B-O	S-B-O	S-R-t ₁ -t ₂ -O
Simple preterite	-	S-B-P	S-R-t ₁ -P-t ₂
Preterite l-object	-	S-B-P-O	S-R-t ₁ -P-t ₂ -O

It is clear that the relative position of elements in one of the shorter complexes in any tense is identical with the relative position of the corresponding elements in the longer complexes of the same tense. If brackets are used to indicate elements which occur in some types of complex but not in others, it is then possible to indicate the arrangement of elements in all types of complex in a given tense or set of tenses by means of a single generalised formula, thus:-

Section (i)	S-B-(O)
" (ii)	S-B-(P)-(O)
" (iii)	S-R-t ₁ -(P)-t ₂ -(O)

Group B (tenses numbered 9-10)

3.13. In these tenses the O.E. is always in final position, e.g. (9b) 'odon-suudfi-mo¹ "he is in hiding from him". In both types of preterite complex the P.E. normally occurs between S.E. and base,

1. In these examples the S.E. is the whole segment 'odon- see §4.2(iii)

e.g. (9b)

'odon- <u>no</u> -suudfi	he was in hiding
'odon- <u>no</u> -suudfi-mo	he was in hiding from him

Less frequently the P.E. follows the base, as in tenses of group A, section (ii), e.g. (9b)

'odon-suudfi- <u>noo</u>	he was in hiding
'odon-suudfi- <u>noo</u> -mo	he was in hiding from him

Such instances are comparatively rare, but both arrangements must be taken into consideration. The appropriate formulae for these tenses, then, are S-B-O in 1-object complexes, and in preterite complexes S-P-B and S-P-B-O, less frequently S-B-P and S-B-P-O; and the generalised formula, covering minimal and all types of enlarged complex, is S-(P)-B-(O), less frequently S-B-(P)-(O).

Group C (tenses numbered 11-12)

3.14. In 1-object complexes the O.E. is always in final position, e.g. 'emo-suudfi-mo "he is/was in hiding from him". Preterite complexes do not occur, and the appropriate generalised formula is therefore S-B-(O), as for tenses of group A section (i).

Group D (tenses numbered 13)

3.15. Here again preterite complexes do not occur, and the only enlarged complexes are 1-object complexes. In these the O.E. always occupies final position, whatever the arrangement of S.E. and base, e.g. (13b)

3 sing. S.E.	'o <u>suudoo</u> - <u>mo</u>	he is to hide from him
1 sing. "	mi- <u>suudoo</u> - <u>mo</u>	I am to hide from him
2 pl. "	shuudoo- <u>don</u> - <u>mo</u>	you are to hide from him

Thus the position of the O.E. is constant, but in view of the difference in the position of the S.E., 1-object complexes of these tenses must, like minimal complexes, be described as characterised by two different arrangements, indicated by the formulae S-B-O and B-S-O. And the arrangement of elements in minimal and enlarged complexes may be indicated by generalised formulae as follows:-

Complexes having 1st and 3rd person S.E.'s	S-B-(O)
" " 2nd person S.E.'s	B-S-(O)

Group E (tenses numbered 14-15)

3.16. The pattern of arrangement in tenses of this group is most clearly seen if 1-object complexes are considered first.

(a) In all S-B complexes¹ (viz. 1 pl. and all 3rd. person complexes, cf. § 3.7 above) the O.E. is in final position, whatever its category,² e.g. (14b)

'o-yaafii-mo	he forgave him ³
'o-yaafii-6e	he forgave them

Here the appropriate formula is S-B-O, as in group A tenses.

(b) In B-S complexes, however, there is diversity of behaviour:

(i) In all 2nd person complexes the O.E., whatever its category, is in final position, and the appropriate formula is B-S-O, e.g. (14b)

shuudfi-daa-mo	you hid from him
shuudfi-daa-6e	" " " them
shuudfi-don-mo	you (pl.) hid from him
shuudfi-don-6e	" " " " them

-
1. i.e. complexes in which the S.E. precedes the base.
 2. For the categories of O.E.'s see Appendix F.
 3. The radical yaaf- is used here since forms such as 'o-suudii-mo "he hid from him" etc., though possible, would normally be avoided because of their identity with tense la forms meaning "he hid him" etc. The radical suud- is retained in subsequent examples because other features of the complex are sufficient to distinguish tense 14b forms from tense la forms, even where the T.S. is the same.

In 1 sing. complexes also, O.E.'s of most categories occupy final position (including 3 sing. of all classes except Class 1) and the formula B-S-O is again applicable, e.g. (14b)

shuudii-mi- <u>se</u>	I hid from them
also shuudii-mi- <u>ngel</u>	I hid from him, it (e.g. child)

(ii) But O.E.'s of the 2nd person singular and the 3rd. person singular of Class 1 always intervene between base and S.E. in 1 sing. complexes, e.g. (14b)

shuudfi- <u>maa</u> -mi	I hid from you
shuudfi- <u>moo</u> -mi	I hid from him

For these two categories of complex the appropriate formula is B-O-S.

3.17. 1-object complexes of group E are thus characterised by three different arrangements, indicated by the formulae S-B-O (1 pl. and all 3rd person complexes), B-O-S (1 sing. complexes with 2 sing. O.E. and 3 sing. O.E. of Class 1), and B-S-O (1 sing. complexes with other O.E.'s, and all 2nd person complexes).

3.18. Turning to preterite complexes we find that whereas in tenses of groups A and B there is considerable variety in the position of the P.E., in all group E tenses it always follows immediately after the base. Thus in simple preterite complexes there are two arrangements (a) S-B-P and (b) B-P-S (with the P.E. occupying (a) final and (b) medial position), corresponding to the two arrangements S-B and B-S in minimal complexes, e.g. (14b)

(a) 3 sing. S.E.	'o-suudfi- <u>noo</u>	he had hidden	S-B-P
(b) 1 sing. "	shuudfi- <u>noo</u> -mi	I had hidden	B-P-S
2 pl. "	shuudfi- <u>noo</u> -don	you had hidden	"

Similarly in preterite 1-object complexes there are three different

arrangements corresponding to the three arrangements in 1-object complexes, with the P.E. intervening between the base and S.E. or O.E. in every case, e.g. (14b)

(a)	3 sing. S.E.		'o-suudf-i- <u>noo</u> -mo ^l	S-B-P-O
(b) (ii)	1 sing. " & 3 sing. O.E.		shuudf-i- <u>no</u> -moo-mi	B-P-O-S
	1 " " & 2 " "		shuudf-i- <u>no</u> -maa-mi	"
(i)	1 " " & 3 pl. "		shuudf-i- <u>noo</u> -mi-be	B-P-S-O
	2 pl. " & 3 sing. "		shuudf-i- <u>noo</u> -don-mo	"

3.19. The formulae for the four types of complex with the various categories of subject and object elements in group E tenses may be tabulated as follows:-

	(a)		(b) (ii)		(b) (i)
	S.E.	3 sing. 3 pl. 1 pl.	1 sing.		2 sing. 2 pl. incl. 2 pl. excl.
Type of Complex	O.E.	All	2 sing. 3 s., Cl.1.	remainder	All
	Minimal		S-B	B - S	B - S
1-object		S-B - O	B - O-S	B - S-O	
Simple					
preterite		S-B-P	B-P - S	B-P-S	
Preterite					
1-object		S-B-P-O	B-P-O-S	B-P-S-O	

It is therefore possible to indicate the arrangement of elements in all types of complex in group E tenses by means of three generalised formulae thus:

- S-B-(P)-(O) 3 sing., 3 pl. and 1 pl. S.E.'s
with O.E.'s of all categories.
- B-(P)-(O)-S 1 sing. S.E.
with 2 sing. O.E. & 3 sing. O.E. of Class 1.
- B-(P)-S-(O) 1 sing. S.E.
with O.E.'s of the remaining categories.
- 2 sing. S.E.
with O.E.'s of all categories.

1. The meaning of these complexes is "he had hidden from him", "I had hidden from him, you, them", and "you had hidden from them".

Conclusion

3.20. The arrangement of the elements in the various tenses may therefore be summarised by means of generalised formulae as follows (cf. column 2 of the table in Appendix):-

Group C)	S-B-(O)
" A	Section (i)	
" A	" (ii)	S-B-(P)-(O)
" A	" (iii)	S-R-t ₁ -(P)-t ₂ -(O) [or S-B-(P)-(O)]
" B	S-(P)-B-(O)	[or S-B-(P)-(O)]
" D	S-B-(O) and B-S-(O), correlated with different categories of S.E.	
" E	S-B-(P)-(O), B-(P)-(O)-S and B-(P)-S-(O) correlated with different categories of S.E., and, in 1 sing. complexes, with different categories of O.E.	

In general terms we may say that the arrangement of the elements is an integral feature of any tense; for in each tense the order of the elements in non-preterite complexes is fixed, and in preterite complexes either the order is fixed, or else there is what may be regarded as a normal order, variations from which are rare and within specific limits. Secondly, most tenses are characterised by the same arrangement in all complexes; but some tenses are characterised by two different arrangements, their distribution being describable in terms of the category of S.E., and other tenses are characterised by three different arrangements, the distribution being describable in terms of the category of S.E., and, in the case of the 1 sing. S.E., in terms also of the category of O.E.

Chapter 4

The Elements of Minimal Complexes

(a) The Subject Element

4.1. In addition to differences in the position of the S.E., considered in the last chapter, there are certain systematic differences in the shape of S.E.'s. In this connection it is necessary to distinguish eight different types of tense, partly relatable to the groups of tenses discussed in chapter 3.

Groups A - C

4.2. The first four types cover all the tenses of groups A-C, characterised by arrangement S-B throughout the paradigm:

(i) All tenses numbered 1-4 and 6-8 in group A have the same set of S.E.'s as in tense 1a, a sample paradigm of which is set out in Appendix D. This set of S.E.'s, listed in column 5 of Appendix E, may be referred to as series 1.

(ii) In the remaining group A tenses, viz. tenses 5a and 5b, complexes of only two categories occur, viz. 2 pl. inclusive and Zero S.E. singular, e.g.

5a	$\begin{array}{l} \text{'en-shuud-u}_1 \\ (\text{Alla}) \text{ sudd-u}_1 \end{array}$	$\begin{array}{l} \text{let us hide} \\ \text{may (God) cover up} \end{array}$
5b	$\begin{array}{l} \text{'en-shuud-o}_1 \\ (\text{Alla}) \text{ shiry-o}_1 \end{array}$	$\begin{array}{l} \text{let us hide ourselves} \\ \text{may (God) prepare} \end{array}$

1. The radical suud- is not appropriate here.

Here the S.E.'s have the same shape as the corresponding S.E.'s in tenses numbered 1-4 and 6-8; but the limited range of categories makes it necessary to regard them as constituting a separate series. Nevertheless in view of the identity of the shapes it may be treated as a subordinate series of series 1, and may be referred to as series lx - cf. column 6 of Appendix E .

(iii) Complexes of group B tenses may be illustrated by the following representative tense 9b complexes:-

3 sing.	'odon-suud-ii	he is in hiding
3 pl.	ʒedon-shuud-ii	they are in hiding
2 sing.	'adon-suud-ii	etc.
2 pl. excl.	'ondon-shuud-ii	

Now it would be possible to treat -don- as a tense element, -don-...-ii being together treated as tense affixes, in which case the S.E.'s would belong to series 1. But for reasons outside the scope of this thesis¹ it seems better to treat the whole of the segment 'odon-, ʒedon- etc. as subject element. Each S.E. may then be described as consisting of a fragment identical with the corresponding S.E. of series 1 ('o-, ʒe-, 'a-, 'on- etc.) combined with a common fragment -don. The S.E.'s of these group B tenses then constitute a distinct series, to be referred to as series 2 - cf. column 7 of Appendix E .

1. In a self-contained analysis of Gombe Fula it would probably be simplest to treat -don- (tenses numbered 9 and 10) and 'e- (tenses numbered 11 and 12) as tense elements. But in a great many other dialects complexes of the corresponding tenses cannot be broken down in this way, but must be described as having S.E.'s of a different series from the counterparts of tenses 1-8 (e.g. the series 3 sing. 'omo-, 3 pl. 'eʒe-, 1 sing. mido-, 2 sing. 'ada-, 1 pl. midon- &c.). Thus a simpler statement for the language as a whole is possible if in Gombe Fula the whole segment 'odon- etc., 'emo- etc. is treated as constituting the S.E..

(iv) There is a similar situation in group C tenses, exemplified by the following representative tense 11b complexes:-

3 sing.	'emo-suud-ii	he is/was in hiding
3 pl.	'eʒe-shuud-ii	they are/were in hiding
2 sing.	'e'a-suud-ii	etc.
2 pl. excl.	'e'on-shuud-ii	

It would be possible to treat 'e-...-ii together as tense affixes, in which case the S.E. would belong to series 1. But again for reasons outside the scope of this thesis¹, it is better to treat the whole segment 'emo-, 'eʒe-, 'e'a-, 'e'on- etc. as subject element. The set of S.E.'s in these tenses then constitutes another distinct series, to be referred to as series 3, in which each S.E. consists of a fragment identical with or closely resembling the corresponding S.E. of series 1, preceded by a common element 'e- - cf. column 8 of Appendix E .

Groups D and E

4.3. The remaining four types of tense are distributed among the tenses of groups D and E, which are characterised by the two different arrangements S-B and B-S. They may be exemplified by part-paradigms of tenses 13a, 15a, 13b (representing the two tenses 13b and 13c), and 14b (representing the five tenses 14a-c and 15b-c) as follows:-

1. cf. the previous note.

	<u>Tense 13a¹</u>	<u>Tense 15a</u>
3 sing.	<u>'o-suud-a²</u>	<u>'o-suud-ata²</u>
3 pl.	<u>be-shuud-a</u>	<u>be-shuud-ata</u>
1 sing.	<u>mi-suud-a</u>	shuud-ai- <u>mi</u>
2 sing.	shuud- <u>aa³</u>	shuud-at- <u>aa³</u>
1 pl.	<u>min-shuud-a</u>	<u>min-shuud-ata</u>
2 " incl.	shuud- <u>en</u>	shuud-et- <u>en</u>
2 " excl.	shuud- <u>on</u>	shuud-ot- <u>on</u>
	<u>Tense 13b</u>	<u>Tense 14b</u>
3 sing.	<u>'o-suud-oo</u>	<u>'o-suud-ii</u>
3 pl.	<u>be-shuud-oo</u>	<u>be-shuud-ii</u>
1 sing.	<u>mi-suud-oo</u>	shuud-ii- <u>mi</u>
2 "	shuud-o- <u>daa</u>	shuud-i- <u>daa</u>
1 pl.	<u>min-shuud-oo</u>	<u>min-shuud-ii</u>
2 pl. incl.	shuud-oo- <u>den</u>	shuud-ii- <u>den</u>
2 pl. excl.	shuud-oo- <u>don</u>	shuud-ii- <u>don</u>

4.4. In all these tenses, it will be noted, the S.E.'s which precede the base have the same shape as the corresponding S.E.'s of series 1, but the S.E.'s which follow the base usually have a different shape.

4.5. Tenses 13a and 15a are alike in having 2nd person S.E.'s -aa, -en and -on (note the absence of initial glottal plosive) in contrast with the 'a-, 'en- and 'on- of series 1; but they are distinguished from each other by the 'suffixed' -mi of tense 15a;

1. The meaning of these paradigms is as follows:-
 - 13a "he is to hide.." etc.
 - 15a "he will hide.." etc.
 - 13b "he is to hide himself" etc.
 - 14b "he hid himself" etc.
2. The variations in the shape of radical and T.S. are discussed in the next two sections of this chapter.
3. In all three 2nd person complexes of these tenses the base is analysed as consisting of radical shuud-+zero T.S. - see §4.38 below.

which is of a different order from the 'prefixed' mi- of tense 13a. The two sets of S.E.'s thus constitute two further series, though the considerable similarity between them may be emphasised by labelling them series 4a and 4b respectively cf. columns 9 and 10 in Appendix E .

4.6. Similarly tenses 13b and 14b are alike in having 2nd person S.E.'s -daa, -den and -don in contrast both with the 'a-, 'en- and 'on- of series 1 and with the -aa, -en and -on of series 4a and 4b; but they are distinguished from each other by the 'suffixed' -mi of tense 14b, which is of a different order from the 'prefixed' mi- of tense 13b. Here again the two sets of S.E.'s must be described as constituting two further distinct series; but the considerable similarity between them may be emphasised by labelling them series 5a and 5b respectively, cf. columns 11 and 12 of Appendix E .

Conclusion.

4.7. There are thus eight distinct series of S.E.'s, each of which is associated with a particular tense or set of tenses. They differ from each other in various ways and to a greater or less extent, the differences being describable partly in terms of the categories of person and number. Moreover the S.E. series associated with any tense is an integral feature of that tense, and must be included in any description of it.

(b) The Radical

4.8. In describing the extent of differences in the shape of the radical¹ and the way in which these differences are related to the tense system, reference will be made to various types of radical. The main distinction is between 'simple radicals' on the one hand, and on the other hand three other types of radical which may together be called 'composite radicals'.

Simple radicals² are usually monosyllabic³ (of the pattern CVC₇CVVC- or CVCC-, occasionally CVVCC-) and cannot be broken down further, e.g. fot- "be equal", suud- "hide", wall- "help", taask- "try hard".

The term Composite radicals covers the following three distinct types:-

- (a) extended radicals, each of which can be broken down into a basic element identifiable with a simple radical plus one or more of a regular series of extensions (with or without reduplication of the basic element), e.g. maβit- "open, unclosed" < maβ- "close" + -it-, 'yam'yamtir- "keep on asking each other" < 'yam- "ask" + -tir-;

-
1. A full study of the relationship of the radical to the tense system would have to include (i) a classification of radicals according to whether they occur in tenses of all three voices, of only one voice, or of various pairs of voices; (ii) a study of the difference in behaviour in this respect between simple radicals and some extended radicals related to them; and (iii) an indication of those radicals which are confined to a limited number of tenses in any one voice. (i) and (iii) however belong to the lexicon rather than the grammar of the language; and (ii) has been treated in outline in my article 'The Middle Voice in Fula' in BSOAS, 1956, xviii/1. Here it is sufficient to consider the differences in the shape of the radical.
 2. The terms 'simple radicals', 'extended radicals' and 'complex radicals' have been used by M. Guthrie to refer to similar phenomena in Bantu languages.
 3. There is also a small number of polysyllabic simple radicals, mostly identifiable as loan-words, e.g. hakkil- "take care".

- (b) complex radicals each of which contains an element resembling one of the regular extensions, but in which the first part is not identifiable with a simple radical, e.g. yejjit- "forget" (there being no simple radical yejj-);
- (c) 'denominal radicals', each of which can be broken down into a basic element identifiable with a nominal stem + one or more extensions, e.g. barkid- "prosper", barkidin- "cause to prosper, bless" (cf. barka "blessing, prosperity").

These distinctions are relevant here in so far as some of the features to be discussed are applicable to both simple and composite radicals, but others are found only in composite radicals of certain types.

4.9. Differences in the shape of radicals are of two main kinds:-

- (i) differences in the initial consonant of many radicals of all types, both simple and composite;
- (ii) differences in the final vowel of certain types of composite radical.

These will be considered in turn.

(i) Differences in the initial consonant

4.10. The differences in the initial consonant of many radicals are part of the regular system of consonant alternance, observable in both verbal and nominal forms, which is a characteristic feature of nearly all dialects of Fula. This alternance system has been described more or less comprehensively in most grammars, and here it is not necessary to give more than an outline of the way in which it operates.

4.11. Not all radicals display this alternation in the initial consonant, and two categories of radical must be distinguished, in

addition to the classification given in § 4.8, according as they have the same shape¹ in all complexes of all tenses, or two shapes¹ in complementary distribution. The category to which a given radical belongs can be predicted from the shape found in the 3 sing. complexes of any tense, as follows:-

(a) Where the initial consonant of this shape is one of the series ' , ʃ, d, 'y, m, n, ny, nd, ng, p, sh, k (the last five consonants being rare in these circumstances), the shape of the radical will be found to be constant in all complexes of all tenses. cf. the following part-paradigm containing the radical nan- "hear" (tense 1a):-

3 sing.	'o-nan-ii ²	3 pl.	ʃe-nan-ii
1 "	mi-nan-ii	1 "	min-nan-ii
2 "	'a-nan-ii	2 " incl.	'en-nan-ii
		2 " excl.	'on-nan-ii

For the purpose of this study these radicals will be termed uniform radicals.

(b) Where, on the other hand, the initial consonant of the shape found in 3 sing. complexes of any tense is one of the series f, s, h, r, w, y, b, d, g, j, the shape of the radical will not be constant, a variant shape with a different initial consonant being found in some complexes of every tense. Contrast, for instance,

-
1. Apart from any variation of the kind considered below in subsection (ii).
 2. Meaning "he has heard", "I have heard" etc. The complexes quoted in §§ 4.11 and 4.15 are arranged in a different order from elsewhere in this thesis, in order to bring out more clearly the distribution of the two shapes of variform radicals.

the following tense la pairs:-

<u>3 sing.</u>	<u>3 pl.</u>	
'o-fin-ii	ʃe-pin-ii	he/they awoke
'o-suud-ii	ʃe-shuud-ii	he/they hid
'o-wall-ii	ʃe-mball-ii	he/they helped
'o-yejjit-ii	ʃe-ngejjit-ii	he/they forgot
'o-barkid-ii	ʃe-mbarkid-ii	he/they prospered

For the purpose of this study these radicals will be termed variform radicals.

4.12. Since one of the two shapes of variform radicals occurs in 3 sing. complexes of all tenses, the other in 3 pl. complexes of all tenses, these two categories of complex are a convenient basis for the description of the alternance system; and the shape of radical occurring in 3 sing. complexes will here be referred to as R^1 , that occurring in 3 pl. complexes as R^2 .¹

4.13. Whereas the initial consonant of R^1 of variform radicals is always one of the series f, s, h, r, w, y, b, d, g, j, the initial consonant of R^2 is always one of the series p, sh, k, nd, mb, ng, nj; and the relation between the initial consonants of any corresponding R^1 and R^2 is describable in terms of a regular series of alternances, such as f-/p-, s-/sh-, w-/mb-, y-/ng-, b-/mb in the above examples.

1. It would in fact be possible to describe uniform radicals also in terms of R^1 and R^2 (the shape occurring in 3 sing. and 3 pl. complexes respectively), R^1 and R^2 being in this case identical. But for the present purpose there is no particular advantage in doing so.

The regularity of these alternances (which are listed in Appendix B) is such that, given the shape of R^1 , the shape of the corresponding R^2 is nearly always¹ predictable from it, but not vice versa;² accordingly most radicals can be adequately referred to by quoting R^1 alone, and in this thesis R^2 will not be quoted except where it is relevant.

4.14. These alternances, as already indicated, are not restricted to the verbal system, but are part of the general structure of the language, and the actual shapes of radicals are in fact quite independent of the tense system. But on the other hand, the distribution of the two alternants among the complexes of a tense-paradigm does vary from one tense to another and is therefore of relevance here.

4.15. There are three different patterns of distribution, associated respectively with the three main groups of tenses distinguished in chapter 3, viz. groups A-C (tenses numbered 1-12), group D (tenses numbered 13), and group E (tenses numbered 14-15). The distribution of the two alternant shapes of variform radicals in tenses of these three main groups may be illustrated by the

-
1. Not in the case of radicals whose R^1 begins with one of the patterns wa-, wo- or wu-; for with these patterns w alternates with mb in some radicals, with ng in others. See §2 of Appendix B.
 2. For, as shown in Appendix B, mb, nd, ng and nj in R^2 each correspond to at least two different consonants in R^1 - cf. the third and fifth examples in §4.11(b) above. Moreover nd, ng, p, sh and k also occur in R^1 as well as R^2 of uniform radicals - cf. § 4.11(a).

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following part-paradigms containing the radical suud^1 :-

	<u>Groups A-C</u> (Tense 1b)	<u>Group D</u> (Tense 13b)	<u>Group E</u> (Tense 14b)
3 sing.	'o-suud-ake	'o-suud-oo	'o-suud-ii
1 "	mi-suud-ake	mi-suud-oo	shuud-ii-mi
2 "	'a-suud-ake	shuud-o-daa	shuud-i-daa
3 pl.	6e-shuud-ake	6e-shuud-oo	6e-shuud-ii
1 "	min-shuud-ake	min-shuud-oo	min-shuud-ii
2 " incl.	'en-shuud-ake	shuud-oo-den	shuud-ii-den
2 " excl.	'on-shuud-ake	shuud-oo-don	shuud-ii-don

4.16. The different patterns of distribution of the two shapes of radical in these three main groups of tense may be described in either of two ways: either (a) with reference to categories of S.E. or (b) with reference partly to categories of S.E. and partly to the arrangement of the elements.

4.17. Thus it can be said (a) that while in tenses of groups A-C, R^1 suud- occurs in all singular complexes, and R^2 shuud- in all plural complexes, in tenses of group D, on the other hand, R^1 occurs in 1 sing. and 3 sing. complexes only, R^2 in 2 sing. as well as all plural complexes; and in group E tenses R^1 occurs only in 3 sing. complexes, R^2 in complexes of all other categories. In brief, group D tenses differ from those of groups A-C in having R^2 and not R^1 in 2 sing. complexes, and group E tenses differ from all others in having R^2 in both 1 sing. and 2 sing. complexes.

4.18. Alternatively it can be said (b) that R^1 occurs in all singular complexes characterised by arrangement S-B, R^2 in all plural

1. Meaning respectively "he has hidden himself" etc.; "he is to hide himself" etc.; and "he hid himself" etc.

complexes characterised by the same arrangement, and also in all complexes, both singular and plural, characterised by arrangement B-S.

4.19. The latter is in fact the most concise and most convenient method of description; for it means that all tenses can be covered by this single generalisation. But whichever method of description is adopted, the distribution of the radical alternants in any tense is clearly an integral feature of that tense.

(ii) Differences in the final vowel

4.20. Apart from alternation in the initial consonant of the kind just described, the great majority of composite radicals have the same shape in all tenses, and other variations in shape are confined to certain specific types of radical. Two kinds of variation may be distinguished, one in which the two shapes are associated with different tenses irrespective of the shape of the T.S., and one in which the two shapes are correlated with different vowels in the T.S..

4.21. The first kind of variation is found in a number of extended radicals which may be analysed as ending in the 'Modal/instrumental' extension.¹ Many such radicals are invariable in shape, but some have two variant shapes, involving an -ir-/-or- variation in

1. This extension appears in some radicals as -ir- (e.g. latir- "kick with"), in some as -or- (e.g. laator- "become... by means of"), in some as -ir-/-or- (e.g. lootir-/lootor- "wash with"); and in some as -r- (e.g. taur- = tawr- "find by means of", cf. taw- "find"). The question of the internal relationship between the constituent parts of extended radicals, and the extent to which, given a simple radical, the shapes of related extended radicals can be predicted from it, is too large a subject to be discussed here.

the shape of the extension, e.g. lootir-/lootor- "wash with".

Investigation shows that the shape lootir- occurs throughout all tenses of the Active and Passive voices, e.g.

1a	'o-lootir-ii	(saabunde)	he washed with (soap)
3a	'o-lootir-ai	(saabunde)	he will wash with (soap)
1c	'o-lootir-aama	(saabunde)	he was washed with (soap)
14c	(saabunde) 'o-lootir-aa		(it was soap) he was washed with

lootor-, on the other hand, is found throughout all tenses of the Middle voice, e.g.

1b	'o-lootor-ake	(saabunde)	he washed himself with (soap)
13b	'o-lootor-oo	(saabunde)	he's to wash himself with (soap)
14b	(saabunde) 'o-lootor-ii		(it was soap) he washed himself with
15b	(saabunde) 'o-lootor-too		(it's soap) he'll wash himself with

Now the vowel o is found only in T.S.'s of the Middle voice (cf. Appendix H), and consideration of tenses 13b and 15b alone might suggest a phonological correlation between the or- of the extension and the o in the T.S.. But the occurrence of lootor- in tenses 1b and 14b, where the vowel of the T.S. is respectively a and i, shows that the incidence of the two shapes is not a phonological but a grammatical feature. The two shapes of these types of extended radical are, then, associated with different sets of tenses, irrespective of the shape of the T.S.¹

4.22. The second kind of variation occurring in composite radicals may be illustrated by the extended radical having the meaning "open,

1. Similarly, when this extension occurs at the end of extended radicals which are confined to Middle tenses, the extension has the shape -or- (e.g. laator- "become...by means of"); while -ir- occurs in extended radicals confined to Active and/or Passive tenses (e.g. latir- "kick with").

unclose". Wherever the first or only vowel of the T.S. is a, e, i or o, the radical has the shape maʃʃit-, e.g.

1a	mi-maʃʃit-ii	I have opened
10b	ndedon-maʃʃit-oo	it is opening (neuter sense)
1c	nde-maʃʃit-aama	it has been opened
13a	nde-maʃʃit-ee	let it be opened

But where the first or only vowel of the T.S. is u, as in tenses 2a, 4a and 5a (cf. Appendix H), the radical has the shape maʃʃut-, e.g.

2a	mi-maʃʃut-u	I <u>opened</u>
4a	mi-maʃʃut-uma	I'll open
5a	'en-maʃʃut-u	let us open

That the variation in the shape of the radical is to be correlated with the difference of vowel and not simply with the difference of tense is clear from tense 14a, where maʃʃut- occurs in complexes where the T.S. is -u, but maʃʃit- in complexes where the T.S. is -i, e.g.

3 sing.	'o-maʃʃit-i	1 sing.	maʃʃut-u-mi
3 pl.	ʃe-maʃʃit-i	2 "	maʃʃut-u-daa
1 "	min-maʃʃit-i	2 pl. incl.	maʃʃut-u-den
		2 " excl.	maʃʃut-u-don

"he opened" etc.

"I opened" etc.

4.23. This kind of variation occurs in many composite radicals of the following types:-

- (a) extended radicals ending in the 'Reversive' extension,¹ e.g. maʃʃit-/maʃʃut- "open, unclose" quoted above;
- (b) extended radicals ending in the 'Repetitive' extension,¹ e.g. fuddit-/fuddut- "repeat".

1. These two extensions, distinguished by their meanings, have the same range of shapes, appearing in some radicals as -it- (e.g. saalit- "go past again"), in some as -it-/ut- (as in the examples quoted), and in some as -t- (e.g. wart- "come back", cf. war- "come").

It also occurs in a few radicals of the following types:-

- (c) complex radicals such as yejjit-/yejjut-, "forget"
- (d) denominal radicals, such as fahid-/fahud- "go deaf".¹

In all these cases the second variant occurs before -u in a T.S., the first before any other vowel; that is to say there is phonological correlation between the shape of the radical and the first or only vowel of the T.S..

4.24. Some extended radicals ending in the 'Associative' extension² also have two variant shapes, correlated with the first or only vowel of the T.S., e.g. dillid-/dillud- "go away together". Other such radicals have three variant shapes, e.g. lootid-/lootud-/lootod- "wash in company", the last being found in tenses of the Middle voice, while lootid- and lootud- are found in Active and Passive tenses, the latter before an -u vowel in the T.S., the former before any other vowel. Such radicals are, therefore, instances of a combination of the two kinds of variation discussed in this section, a primary variation correlated with difference of voice, and a secondary variation correlated with phonological features of the T.S..

Conclusion

4.25. Many radicals, then, both simple and composite, have the same shape in all complexes of all tenses. But radicals of certain specific types have two or more different shapes, these being correlated

-
1. Some denominal radicals, however, do not seem to follow a consistent pattern. Thus both barkid- and barkud- are found before -u, e.g. 2a 'o-barkid-u "he prospered" and 14a mbarkud-u-mi "I prospered".
 2. This extension appears in some radicals as -id-/-ud-, in some as -id-/-ud-/-od- (cf. the examples quoted above), and in some as -d- (e.g. ward- "come in company", cf. war- "come").

with the tense system in one or more of the following three ways:-

- (a) In the case of 'variform' radicals (both simple and composite), where the difference in shape consists of a systematic alternation in the initial consonant, the distribution of the two shapes within a tense-paradigm is an integral feature of the tense system, and is correlated with the categories of S.E., although describable partly in terms of the arrangement of the elements.
- (b) With certain types of extended radical a variation in the final vowel is correlated with difference of voice.
- (c) With certain types of composite radical there is a phonological correlation between the final vowel of the radical and the first or only vowel of the T.S..

To this extent¹ the shape of the radical is closely bound up with the tense system; and in particular the shape of certain radicals is correlated variously with the category of S.E., the tense series (i.e. the voice), and the shape of the T.S..

-
1. A few simple radicals also have two variant shapes, viz. *wi'-/wii-* "say", *yi'-/yii-*, "see", *fa'-/faa-* "make for", *fiy-/fii-* "beat", *yah-/yaa-* "go", with their corresponding R² shapes such as *njah-/njaa-*. But investigation shows that the two shapes are positional variants, the former being found before a vowel, in whatever element it occurs, the latter before a consonant, in whatever element it occurs. Contrast for instance 'o-yah-a, 6e-njah-a "he is, they are to go" (before T.S. -a), and njah-aa "you are to go" (before S.E. -aa with Zero T.S.) with njaa-mi "I went" (before S.E. -mi with Zero T.S.), 'o-yaa-noo and njaa-noo-mi "he, I had gone" (before P.E. -noo with Zero T.S.).

Moreover this pattern of variation is also found in a number of nominals, including some having a core comparable with one of these radicals; contrast for instance *yah-annde* "a going" with *yaa-du* "a journey".

Such variations may therefore be ignored here as not relevant to the tense system.

(c) The Tense Suffix

4.26. There are many tenses in which the tense suffix is the same in all minimal complexes, irrespective of differences both of radical and of S.E.. Each of these tenses—viz. all tenses of groups B and C, and, in group A, tenses numbered 1, 3, 6 and 8 and tenses 2b-c, 4b-c and 5b - can be described as characterised by a single suffix only, -ii in tense 1a, -ake in 1b, -aama in 1c etc..¹ But when paradigms of other tenses are examined, at least two different T.S.'s are observable in each tense. These are distributed in various ways, which will now be considered. Since tenses of groups B and C are all characterised by a single suffix, it is only necessary to consider groups A, D and E.

Group A

4.27. The great majority of group A tenses, as indicated above, are each characterised by a single suffix; but in each of tenses 2a, 5a, 4a and 7a-c there is variation in the shape of the suffix.

Tense 2a

4.28. In tense 2a the T.S. with a radical such as wall- "help" is -u in all complexes (e.g. 'o-wall-u, 6e-mball-u, mi-wall-u, 'on-mball-u "he, they, I, you helped"). But with a radical such as 'anndin- "inform" the suffix is analysable as zero (e.g. 'o-'anndin, 6e-'anndin, mi-'anndin, 'on-'anndin "he, they, I, you informed"); and with a radical such as yo6- "pay" there is an apparently free

1. cf. Appendix H, where the tense suffixes found in minimal complexes of all tenses are listed.

variation between -u (as in 'o-yoß-u, ße-njoß-u, mi-yoß-u, 'on-njoß-u "he, they, I, you paid") and zero (as in 'o-yoß, ße-njoß, mi-yoß, 'on-njoß), a variation which may be represented by the use of brackets thus: -(u), e.g. mi-yoß-(u).

4.29. An examination of complexes of this tense containing a variety of radicals show that these three variants -u, zero and -(u), are in complementary distribution, each variant occurring with a different type of radical. The first type, which may be called Type I, includes all radicals which end in

- (1) a combination of two consonants, whether geminate or not; (e.g. wall-, maß, timm-, fudd-, sudd-, winnd-, nanng-, wart-, risk-, nyaamn; foost-)¹
- or (ii) a single consonant preceded by a diphthong; (e.g. nyaun-, sein-, diun-, haur-, haut-)
- or (iii) a single consonant which is one of the following: h, sh, k, t, b, d, j, g, nd, ng, ny, 'y,' (e.g. mah-, hoosh-, sek-, loot-, yejjit-, tuub-, 'ad-, maßid-, wuj-, 'yoog-, roond-, ngong-, nyeny-, ta'y-, me'-)

4.30. The second type of radical, which may be called Type II, includes all those having two or more syllables and ending in n, r, w or y; e.g. 'anndin-, wolwan-, 'anndir-, 'anndindir-, hultor-, warlaw-, soody-¹ (All are in fact extended or complex radicals).

1. The meaning of these radicals is as follows:

- I (i) help, close, be finished, begin, cover, write, catch, come back, become rich, feed, rest;
- (ii) injure, please, tremble, join, unite
- (iii) build, take, doubt, wash, forget, repent, remove, close completely, rub, draw (water), put a load on, snooze, decorate, cut, stammer;
- II inform, speak to, known by means of, know each other, take fright, come quickly, buy at a distance;
- III seek, smile, look, send, find, spend a long time, touch, hear, pay, do.

4.31. The third type of radical, which may be called Type III, includes all radicals, other than those of Types I(ii) and II, which end in a single consonant in the range : f, s, r, l, w, y, m, n, β, d; e.g. tef-, moos-, ndaar-, lel-, taw-, booy-, meem-, nan-, yof-, waf-.¹

4.32. With all radicals of Type I the T.S. in tense 2a is always -u, with all those of Type II it is zero, while with those of Type III there is a free variation between zero and -(u).² This tense may therefore be described as having not a single tense suffix, but a suffix cluster³ -u:zero:-(u), the variants being correlated with different types of radical. For the purpose of this thesis such a suffix cluster will be represented by the capital letter -U⁴.

Tenses 5a and 4a

4.33. The same suffix cluster occurs also in tense 5a, e.g.

Type I	(Alla) wall- <u>u</u>	may (God) help
" II	(Alla) findin	may (God) awaken
" III	(Alla) laan-(<u>u</u>)	may (God) curse

In tense 4a there is a somewhat similar cluster of suffixes -uma:-ma:-(u)ma, the three variants being again correlated with the three types

1. For the meanings, see note 1 on previous page.
2. Individual speakers seem to show preference for one or other form in certain circumstances, e.g. for -u in pause, especially with CVVC- radicals; but it does not seem possible to formulate exact rules.
3. cf. the term prefix cluster used by M. Guthrie (BSOAS, 1956, xviii/3, p.551).
4. It is to be noted that the u vowel in this suffix cluster is in a different category from the other vowels (a, e, i, o); for not only has it no long counterpart in tense suffixes (whereas aa, ee, ii, and oo all occur) but it occurs in tense suffixes only as a variant in such a suffix cluster, or the similar cluster -uma:-ma:-(u)ma cf. §4.33.

of radical, e.g.

Type I	'o-dill- <u>uma</u>	he'll go away
" II	'o-hultor- <u>ma</u>	he'll take fright
" III	'o-nan- <u>ma</u> or	
	'o-nan- <u>uma</u>	he'll hear

This cluster may be represented thus: -Uma.

Tenses 7a-c

4.34. A phenomenon resembling the above in some respects is found in the three tenses 7a, 7b and 7c. Thus in tense 7a the suffix is -ataa with some radicals (e.g. mi-wall-ataa "I will not help"), -taa with others (e.g. mi-'anndin-taa "I will not inform"), while with others there is an apparently free variation between -ataa and -taa (e.g. mi-waf-ataa or mi-waf-taa "I will not do"). But the distribution of these variants cannot be adequately described in general terms as in the case of tense 2a suffixes. It is true that -ataa is the only shape found with Type I radicals, and only -taa occurs with Type II radicals. But the free variation — which may be represented thus: -(a)taa — does not occur with all Type III radicals, but seems to be confined to a very few radicals of frequent occurrence, whose final consonant is r, l, m, n, ʃ or d, (e.g. war-, lel-, lim-, nan-, heʃ-, waf-^l); but even with these radicals there is very considerable individual variation. There is therefore not the same exact correlation with phonological features of the radical as in tense 2a, and the incidence of the free

1. Meaning: come, send, count, hear, get, do.

variation can only be described in terms of individual radicals. This set of suffixes (-ataa with most radicals of Types I and III, -taa with those of Type II, and a free variation between -ataa and -taa with certain specific radicals) may conveniently be represented by the use of square brackets, thus: -[a]taa.

4.35. In tenses 7b and 7c there are comparable sets of suffixes, with similar distribution (viz. 7b -ataako, -taako and -(a)taako; and 7c -ataake, -taake, and -(a)taake) which may again be represented by the use of square brackets, thus: 7b -[a]taako, 7c -[a]taake.¹

Group A. Summary

4.36. Thus while the majority of group A tenses have each a single T.S., each of the remaining tenses is characterised by a set of suffix variants correlated with different types of radical or (less frequently) certain individual radicals. But even in these tenses the T.S. is constant throughout the tense paradigm of any one radical.

Groups D and E

4.37. In every tense of groups D and E, on the other hand, at least two different T.S. shapes are found within the paradigm of each radical. In the case of T.S.'s there is not a clear distinction, as in the case of the arrangement of the elements and the distribution of radical alternants, between tenses of group D and those of group E; and it is necessary to consider first tenses 13a, 14a and 15a separately, then tenses 14b-c and 13b-c, and finally tenses 15b and 15c.

Tense 13a

4.38. This tense may be illustrated by the part-paradigm of

1. It is possible that tense 3b has a similar set of suffixes -oto, -to, -[o]to, to be represented thus - [o]to, but further research is necessary on this point.

the radical wall - "help" (meaning "he is to help" etc.):-

3 sing.	'o-wall- <u>a</u>	2 sing.	mball-aa
3 pl.	ʒe- <u>mball-a</u>	2 pl. incl.	mball-en
1 sing.	mi-wall- <u>a</u>	2 pl. excl.	mball-on
1 pl.	min- <u>mball-a</u>		

Here the T.S. in all 3rd and 1st person complexes (characterised by arrangement S-B) is -a. But the 2nd person complexes are most appropriately analysed as consisting of R² mball- and S.E.'s of series 4a (-aa, -en, -on) with Zero T.S.¹. In this tense there are, then, two alternative suffixes, -a and Zero, correlated with different arrangements of the elements, -a occurring in S-B complexes, Zero in B-S complexes.

Tense 14a

4.39. This tense may be illustrated by the part-paradigms of the radicals wall-, 'anndin- and yob- :-

3 sing.	'o-wall- <u>i</u>	'o-'anndin- <u>i</u>	'o-yob- <u>i</u>
3 pl.	ʒe- <u>mball-i</u>	ʒe-'anndin- <u>i</u>	ʒe-njɔb- <u>i</u>
1 pl.	min- <u>mball-i</u>	min-'anndin- <u>i</u>	min-njɔb- <u>i</u>
1 sing.	mball- <u>u</u> -mi	'anndin-mi	njɔb-mi or njɔb- <u>u</u> -mi
2 "	mball- <u>u</u> -ɖaa	'anndin-ɖaa	njɔb-ɖaa or njɔb- <u>u</u> -ɖaa
2 pl. incl.	mball- <u>u</u> -ɖen	'anndin-ɖen	njɔb-ɖen or njɔb- <u>u</u> -ɖen
2 pl. excl.	mball- <u>u</u> -ɖon	'anndin-ɖon	njɔb-ɖon or njɔb- <u>u</u> -ɖon
	"he helped" etc.	"he informed" etc.	"he paid" etc.

Thus with all radicals the T.S. is -i in complexes of the 3rd persons and 1 pl. (characterised by arrangement S-B). But in complexes of 1 sing. and all 2nd persons (characterised by arrangement B-S) the T.S. is -u with the radical wall-, Zero with 'anndin-, while with yob- it is an apparently free variation between zero and -u. These three variants are in fact correlated with the three types of radical

1. A capital Z is used for this Zero suffix to distinguish it from the zero member of the suffix cluster -U.

discussed in §4.29-31, and constitute a suffix cluster identical with that found in tense 2a.

4.40. In this tense, then, the T.S. is not a single suffix, but an alternance (describable as an -i/-U alternance), the two alternants being correlated with different arrangements of the elements; and the second alternant is itself a suffix-cluster, the three variants being correlated with different types of radical.

Tense 15a

4.41. In this tense there is considerably greater diversity, including different T.S. shapes with different radicals. The paradigm of the Type I radical wall- "help" is as follows:-

3 sing.	'o-wallata	1 sing.	mballaimi
3 pl.	6e-mballata	2 "	mballataa
1 pl.	min-mballata	2 pl. incl.	mballeten
		2 " excl.	mballoton

"he will help", etc.

"I will help", etc.

Here the T.S. is clearly -ata in complexes of all 3rd persons and 1 pl. (characterised by arrangement S-B). In complexes of the other four persons the remainders obtained by subtraction of the radical are -aimi, -ataa, -eten, -oton. Some writers¹ dealing with comparable forms in other varieties of Fula, treat -taa, -ten, -ton as the 'Subject Pronouns' in the 2nd person forms. But it is more convenient to treat -mi, -aa, -en, and -on as S.E's of series 4b, leaving remainders -ai-, -at-, -et-, -ot- as T.S.'s. The T.S. in B-S complexes could therefore be described as a scatter of four variants correlated

1. e.g. F. W. Taylor, A Grammar of the Adamawa Dialect of the Fulani Language, 2nd Ed. Ch.13, s.11(2) (p.85).

with the different categories of S.E.. But a more systematic statement is possible if it is generalised as a suffix cluster $-ai:-\check{V}t$, $-ai$ being used where the following element begins with a consonant, $-\check{V}t$ where it begins with a vowel, and \check{V} representing a vowel which is identical with the following vowel.

4.42. The foregoing account is applicable to all Type I radicals. But with Type II radicals a different shape of T.S. occurs in all complexes except 1 sing., as is shown by the part-paradigm of the radical 'anndin- "inform" :-

3 sing.	'o-'anndin- <u>ta</u>	1 sing.	'anndin- <u>ai</u> -mi
3 pl.	6e-'anndin- <u>ta</u>	2 "	'anndin- <u>t</u> -aa
1 pl.	min-'anndin- <u>ta</u>	2 pl. incl.	'anndin- <u>t</u> -en
		2 " excl.	'anndin- <u>t</u> -on

"he will inform", etc.

"I will inform", etc.

In this case the T.S. in S-B complexes is $-ta$, not $-ata$, while in B-S complexes it is a suffix cluster $-ai:-t$ in place of the $-ai:-\check{V}t$ cluster found with Type I radicals.

4.43. With Type III radicals the T.S. is nearly always the same as with those of Type I, e.g. 'o-yo6-ata etc., njo6-ai-mi, njo6-at-aa, njo6-et-en, njo6-ot-on "he, I etc. will pay". There are however a few radicals, such as wad- "do", with which the shorter forms found with Type II radicals occur in some or all of the relevant complexes, e.g.

3 sing.	'o-wad- <u>ata</u>	or	'o-wad- <u>ta</u>	he will do
2 pl. incl.	ngad- <u>et</u> -en	"	ngad- <u>t</u> -en	you & I will do
2 " excl.	ngad- <u>ot</u> -on	"	ngad- <u>t</u> -on	you will do

4.44. The distribution of the longer forms ($-ata$, $-at$, $-et$, $-ot$) and the shorter forms ($-ta$, $-t$) is thus comparable with that of the tense 7a variations, discussed in § 4.32 above, and square brackets

may again be used to indicate such a distribution. The T.S. in 3rd person and 1 pl. complexes may then be generalised as $-[a]ta$, that in 2 sing. complexes as $-[a]t$, and those in 2 pl. complexes as $-[e]t$ and $-[o]t$. And the whole range of T.S. shapes in this tense may be quoted as $-[a]ta/-ai:-[V]t$. This represents a primary alternance (between $-[a]ta$ ~~$-[a]ta$~~ on the one hand and $-ai/-[V]t$ on the other) correlated with the arrangement of the elements. The second member of this alternance is itself a suffix cluster, the two members of which are associated with different phonological categories of S.E., and the second of these is, with most radicals, a set of three variants, the vowel of the suffix being correlated with the vowel of the S.E.. In addition, the first member of the primary alternance, and the second member of the suffix cluster have variant shapes, marked by the absence of a vowel before the $-t$, which are found with all Type II radicals, and potentially with a few Type III radicals.

Tenses 13b-c, 14b-c, and 15b-c

4.45. Tense 14b does not have variant shapes of suffix with radicals of different types, and the following part-paradigm is typical of tense 14b paradigms of all radicals:-

3 sing	'o-suud- <u>ii</u>	1 sing.	shuud- <u>ii</u> -mi
3 pl.	6e-shuud- <u>ii</u>	2 "	shuud- <u>i</u> -daa
1 pl.	min-shuud- <u>ii</u>	2 pl. incl.	shuud- <u>ii</u> -den
		2 " excl.	shuud- <u>ii</u> -don

"he went into hiding" etc.

"I went into hiding" etc.

The distribution of the two T.S. alternants $-ii$ and $-i$ could be described by saying that the short-vowel alternant occurs in the 2 sing. complex, the long-vowel alternant in complexes of all other categories.

But since the 2 sing. complex is the only one where the base is followed by an element containing a long vowel, an alternative method of description is possible, viz, that the short-vowel alternant occurs when a long-vowelled element follows, while the long-vowel alternant occurs in all other cases, i.e. both where there is no subsequent element and where the subsequent subject element is short-vowelled. For describing the T.S. in minimal complexes alone the first method of description, by reference to the category of S.E., is more concise, but the second method, involving reference in effect to the arrangement of the elements and the phonological structure of the S.E. is in fact the more useful, since it makes possible a simpler overall statement covering both minimal and enlarged complexes. cf. §§ 5.39-42

4.46. Tense 14c, 13b and 13c have similar alternances -aa/-a, -oo/-o and -ee/-e, the short-vowel alternant in each case occurring before the long-vowelled 2 sing. S.E. -daa, the long-vowel alternant in all other circumstances. cf. Appendix G.

4.47. The same is true of tenses 15b and 15c, where the alternances are -otoo/-oto and -etee/-ete with most radicals. cf. Appendix G. But in these tenses variant shapes without the first vowel occur with Type II radicals and potentially with a few of Type III (e.g. Type II 'o-'ekkitin-too "he will learn"; Type III njood-otoo-mi or njood-too-mi, njood-oto-daa or njood-to-daa "I, you will sit down", dum-wad-etee or dum-wad-tee "it will be done"). The alternances are therefore more appropriately quoted as 15b -[o]too/-[o]to and 15c -[e]tee/-[e]te.

4.48. Each of these six tenses therefore is characterised not by a single T.S. but by an alternance of the pattern -VV/-V or -[V]tVV/-[V]tV, the distribution of the two alternants being describable by reference to the position and phonological structure of the S.E.

Conclusion

4.49. We conclude that while all tenses of groups B and C and most group A tenses are each characterised by a single tense suffix, having the same shape in all complexes of the paradigm and with all radicals, each of the remaining group A tenses is characterised by a set of T.S. variants correlated with different radicals or types of radical. Each tense of groups D and E is characterised by a primary alternance correlated with either the position or the position and the phonological structure of the S.E., while some of these tenses have one or more subsidiary sets of T.S. variants correlated either with the shape of the S.E., or with different radicals or types of radical, or with both.

Chapter 5

The Elements of Enlarged Complexes

5.1. In studying the elements of enlarged complexes it is convenient to consider first the behaviour of the supplementary elements which do not occur in minimal complexes, viz. object element and preterite element, and then the behaviour in enlarged complexes of the basic elements which also occur in minimal complexes, viz. subject element, radical, and tense suffix. One section will be devoted to each of the elements, separate consideration being given where necessary to the three different types of enlarged complex.

5.2. Representative complexes, illustrating the behaviour of the elements of enlarged complexes in all tenses, including those referred to but not illustrated in the text, are given in Appendix¹ J.

(a) The Object Element

5.3. The full range of O.E.'s is the same as the range of S.E.'s, and - as is clear from the list in Appendix F - the usual shape of O.E.'s of most categories closely resembles the series 1 shape of the corresponding S.E.'s. But there is not the same diversity of shape as in the case of S.E.'s, and in fact O.E.'s of nearly all categories have the same shape in all circumstances. Variation of shape is confined

1. Both in the Appendix and in the examples given in the text the radicals wall- "help" and yaaf- "forgive" are usually quoted in Active and Middle voice complexes, since they are more often used with O.E.'s referring to a person than the radical suud-. Occasionally another radical is quoted where it is more appropriate to the particular complex.

to O.E.'s of three categories :-

- 1st person singular
- 2nd person singular
- 3rd person singular O.E. associated with class 1
(the 'singular personal class').

It is possible to describe the variation in the shape of these O.E.'s in terms of different series, as in the case of S.E.'s, but it is necessary first to consider each of these three categories of O.E. separately. Their behaviour will be examined first in 1-object complexes without a preterite element, and then in 1-object preterite complexes.

(i) Non-preterite 1-object complexes

1st person singular Object Element

5.4. Two different shapes are observable. In most tenses of group A and all those of groups B-E, 1-object complexes with 1 sing. O.E. consist of a segment identical with the corresponding minimal complex combined with an object element -yam (compare for example 1a 'o-wall-ii "he helped" with 'o-wall-ii-yam "he helped me"). But in tenses 2a and 2b, 5a and 5b corresponding minimal and 1-object complexes with 1 sing. O.E. are as follows :-

2a	'o-wall-u	'o-wall-am	he <u>helped</u> (me)
2b	'o-yaaf-i	'o-yaaf-am	he <u>forgave</u> (me)
5a	(Alla) wall-u	(Alla) wall-am	(God) help (me)
5b	(Alla) yaaf-o	(Alla) yaaf-am	(God) forgive (me)

In each tense the 1-object complex is most appropriately analysed as having 1 sing. O.E. -am combined with S.E. plus a base wall- or yaaf- consisting of radical + Zero T.S., in contrast with the radical plus

a definitive suffix in the minimal complex. This analysis is supported by the comparable patterns in the case of complexes with 2 sing. O.E. considered in § 5.5. below. The question of the different shape of T.S. is considered in section (e) below (§§ 5.31-32), and the relevant fact here is the existence of the distinct 1 sing. O.E. shape -am in these four tenses, in contrast with -yam which is found in all other tenses.

2nd person singular Object Element

Group A tenses

5.5. In many tenses of group A (viz. all tenses numbered 1, 4, 6, 7 and 8, and tenses 2c and 3c) 1-object complexes with 2 sing. O.E. consist of a segment identical with the corresponding minimal complex combined with an object element -ma (compare for example 1a 'o-wall-ii "he helped" with 'o-wall-ii-ma "he helped you"). But in tenses 2a and 2b, 5a and 5b there is again a different pattern. The 2 sing. O.E. complexes corresponding to the 1 sing. O.E. complexes given in the § 5.4 above are as follows:-

'o-wall-e 'o-yaaf-e (Alla) wall-e (Alla) yaaf-e

which are most appropriately analysed as having Zero T.S. combined with 2 sing. O.E. -e.

5.6. 2 sing O.E. complexes of tense 3a and 3b are also best analysed as having this same shape of O.E., e.g.

(3a)		'o-wall-et- <u>e</u>	he will help you
	compared with	'o-wall-ai	he will help
	and	'o-wall-ai-yam	he will help me

(3b)		'o-yaaf-et- <u>e</u>	he will forgive you
	compared with	'o-yaaf-oto	he will forgive
	and	'o-yaaf-oto-yam	he will forgive me

The 2 sing. O.E. in tense 3a, then, is -e combined with a base consisting of radical + -et- in contrast with radical + -ai in all other complexes of this tense. Similarly in tense 3b it is -e combined with a base consisting of radical + -et in contrast with radical + -oto in all other complexes of this tense.

5.7. Again the question of the different shape of T.S. in these tenses is considered in section (e) below (§ 5.31-3), and the relevant fact here is the existence of the distinct 2 sing. O.E. shape -e in the six tenses 2a and 2b, 5a and 5b, and 3a and 3b, in contrast with the -ma which occurs in the other group A tenses.

Tenses of groups B - E

5.8. In most tenses of these groups a third shape -maa occurs, either as the sole form or as a free variant, as follows :-

- (1) In all B-O-S complexes - i.e. in 1 sing. complexes of group E tenses (those numbered 14-15) - -maa alone occurs, e.g.

14a	mball-u- <u>maa</u> -mi	I helped him
14b	njaaf-i- <u>maa</u> -mi	I forgave him
15a	mball-ai- <u>maa</u> -mi	I shall help him
15b	njaaf-oto- <u>maa</u> -mi	I shall forgive him

- (2) In S-B-O complexes in all Active and Middle tenses numbered 9-15 except tense 15a, -maa alone occurs, e.g.

10a	'odon-wall-u- <u>maa</u>	he is helping you
10b	'odon-tor-o- <u>maa</u>	he is begging you
14a	'o-wall-u- <u>maa</u>	he helped you
14b	'o-yaaf-i- <u>maa</u>	he forgave you

- (3) In S-B-O complexes of tense 15a and all Passive tenses numbered 9-15, both -ma and (less frequently) -maa seem to occur, though the comparative rarity of occurrence of 1-object

complexes with 2 sing. O.E. in Passive tenses makes it hard to generalise¹, e.g.

- 15a 'o-wall-ata-ma or 'o-wall-ai-maa
"he will help you"
15c 'o-suud-ete-ma or 'o-suud-ete-maa
"he will be hidden from you"
14c 'o-suud-aa-ma or 'o-suud-a-maa
"he was hidden from you"

(For the different shapes of T.S. see section (e) below, (§§538-53))

2 sing. O.E. Summary

5.9. There are thus three different shapes of 2 sing. O.E., -ma occurring in fifteen tenses of group A, -e occurring in the remaining six group A tenses, and -maa occurring in thirteen tenses of groups B-E, while in the remaining eight tenses of these groups -ma and -maa are free variants, except in B-O-S complexes, where -maa alone occurs.

3rd person singular O.E., Class 1

5.10. The most common shape of this O.E., -mo, occurs in all tenses of groups A-D (i.e. all tenses numbered 1-13), and also in all S-B-O and B-S-O complexes of group E tenses, e.g.

1a	'o-wall-ii- <u>mo</u>	he helped him
10a	'odon-wall-a- <u>mo</u>	he is helping him
13a	'o-wall-a- <u>mo</u>	he is to help him
15a (S-B-O)	'o-wall-ata- <u>mo</u>	he will help him
15a (B-S-O)	mball-at-aa- <u>mo</u>	you will help him

But in B-O-S complexes of group E tenses - i.e. in 1 sing. complexes of tenses numbered 14 and 15 - the O.E. of this category has the shape

1. In tense 13c in particular - ma is much more frequent than -maa, and may in fact be the only form used.

-moo (corresponding to the 2 sing. O.E. -maa in such 1 sing. complexes),
e.g.

15a mball-ai-moo-mi I will help him
14b njaaf-i-moo-mi I forgave him

5.11. There is thus considerable diversity both in the shapes of O.E.'s of these three categories and in their distribution. It is however useful to note that three different phonological patterns of O.E. can be established :-

<u>Pattern 1</u>	Consonant-initial, short vowel	(-CVC or -CV)
<u>Pattern 2</u>	Vowel-initial, short vowel	(-VC or -V)
<u>Pattern 3</u>	Consonant-initial, long vowel	(-CVV)

The variants of the three categories of 'variform' O.E.'s are distributed among these patterns as follows :-

	<u>Pattern 1</u> (-CVC or -CV)	<u>Pattern 2</u> (-VC or -V)	<u>Pattern 3</u> (-CVV)
1 sing.	-yam	-am	-
2 sing.	-ma	-e	-maa
3 sing. Cl.1.	-mo	-	-moo

The O.E.'s of all the remaining categories, as can be seen from Appendix F, also belong to pattern 1, e.g. 6e, min, 'en, 'on, dum etc.. Though not essential for a description of the shapes of O.E.'s, these phonological patterns will prove useful for an economical description of the relation between O.E.'s and other features of enlarged complexes, considered in subsequent sections of this chapter.

5.12. The distribution of the various shapes of O.E. among the tenses is best described in terms of 5 series, incorporating the various combinations that occur. They may be summarised as follows,

'&c.' being used to represent O.E.'s of all categories which are 'uniform' in all tenses :-

<u>Series</u>	<u>Tenses</u>
1. -yam, -ma, -mo, &c.	Tenses numbered 1, 4, 6, 7, 8 2c, 3c.
2. -yam, -e -mo, &c.	3a-b
3. -am, -e, -mo, &c.	2a-b, 5a-b
4. -yam, -maa, -mo, &c.	9a-12a, 9b-12b, 13a-b & S-B-O and B-S-O complexes of 14a-b, 15b
5. ⁻¹ -maa, -moo, ⁻¹	B-O-S- complexes of tenses numbered 14-15
Series 1 or 4	9c-13c, & S-B-O and B-S-O complexes of 14c, 15a, 15c.

(ii) Preterite 1-Object Complexes

5.13. In preterite 1-object complexes of all tenses O.E.'s of all categories have the same shape as in non-preterite 1-object complexes, with the exception of 1 sing. and 2 sing. O.E.'s in tenses 2a-b and 3a-b. In these tenses, which are characterised by the arrangement S-B-P-O, with the P.E. intervening between T.S. and O.E., the 1 sing. and 2 sing. O.E.'s have the pattern 1 shapes -yam and -ma, not the pattern 2 shapes found where there is no P.E. and the T.S. and O.E.

-
1. 1 sing. O.E. does not occur, since it is lexically incompatible with these complexes, which have 1 sing. S.E. O.E.'s of the remaining categories occupy final position in 1 sing. complexes of these tenses, i.e. the arrangement is B-S-O - cf. §3.16(b)(i)

are adjacent, e.g.

contrast	(2a)	'o-wall-u-no- <u>yam</u>	he had <u>helped</u> me
with		'o-wall- <u>am</u>	he <u>helped</u> me
& contrast	(3a)	'o-wall-ai-no- <u>ma</u>	he was about to help you
		'o-wall-et- <u>e</u>	he will help you

This means that preterite 1-object complexes of tenses 2a-b and 3a-b are characterised by O.E. series 1 and not by series 3 and 2 respectively as in the case of non-preterite 1-object complexes. Otherwise the distribution of the O.E. series is the same in both types of 1-object complex.

Conclusion

5.14. The general conclusion from this consideration of O.E.'s is that, in spite of the invariability of O.E.'s of most categories, five different series need to be distinguished, incorporating various combinations of the diverse shapes of 1 sing. and 2 sing. O.E.'s and the 3 sing. O.E. associated with Class 1 of the nominal system. Each series occurs in certain specific circumstances, definable by reference sometimes to tense alone, sometimes to tense and type of complex, sometimes to tense and arrangement. Furthermore, even where there is a possibility of free variation, not more than two series are involved; and the range of O.E. series associated with any tense is an integral feature of 1-object and preterite 1-object complexes of that tense, and must be included in any description of it.¹

1. The range of O.E. series associated with each tense is indicated in column 8 of Appendix M.

(b) The Preterite Element

5.15. The element which for, the purpose of this study, is called the 'preterite element'¹ has two different shapes, -no and -noo. In this chapter the distribution of these two shapes is examined with a view to determining how far the shape or shapes found in complexes of a given tense are a feature of the tense and how far they are correlated with other features. Since preterite complexes do not occur in tenses of groups A(i), C and D, cf. §§ 3.11(i), 3.14, 3.15), only those of groups A(ii)-(iii), B and E need be considered here.

Group A, Section (ii)

5.16. This section consists of tenses 1a, 1b, and tenses numbered 2-3, 6-8, all of which are characterised by arrangement S-B-(P)-(O). In these tenses the P.E. is -no in all preterite complexes, i.e. in preterite 1-object complexes, whatever the category of O.E., as well as in simple preterite complexes, e.g. (tense 1a)

'o-wall-ii- <u>no</u>	he had helped
'o-wall-ii- <u>no</u> -mo	he had helped him
'o-wall-ii- <u>no</u> -ma	he had helped you

Group A, Section (iii) (Tense 1c)

5.17. With the less usual arrangement S-B-P-(O) the P.E. is -no, as in all A(ii) tenses, e.g. 'o-suud-aama-no "he had been hidden". But with the more usual arrangement S-R-t₁-P-t₂-O, where the P.E. occurs between the two moieties of the T.S., it is always -noo, e.g.

1. See Appendix A4.

'o-suud-a- <u>noo</u> -ma	he had been hidden
'o-suud-a- <u>noo</u> -ma-mo	he had been hidden from him
'o-suud-a- <u>noo</u> -ma-ma	he had been hidden from you

It is noteworthy that wherever the fragment -ma occurs as part of a T.S. and is preceded by a vowel, that vowel is long¹ (-aama, -ooma, -eema, T.S.'s of tenses 1a, 4b, 4c respectively, cf. Appendix H.). Accordingly the long vowel of -noo in 'o-suud-a-noo-ma etc. may be treated as a feature of its position before the T.S. moiety -ma. The shape of the P.E. in this tense is thus correlated with its position in the complex and the nature of the following element.

Group B, (Tenses numbered 9 and 10)

5.18. In all complexes having the more usual arrangement S-P-B-(O) the P.E. is -no in all tenses, e.g. (9b)

'odon- <u>no</u> -suud-ii	he was in hiding
'odon- <u>no</u> -suud-ii-mo ₂	he was in hiding from him
'odon- <u>no</u> -suud-i-maa ²	he was in hiding from you

But with the less usual arrangement S-B-P-(O) -no and -noo both occur, in different circumstances. e.g. (9b)

'odon-suud-i- <u>noo</u>	he was in hiding
'odon-suud-i- <u>noe</u> -mo	he was in hiding from him
'odon-suud-i- <u>no</u> -maa	he was in hiding from you

-
1. The -u, counterpart of zero, occurring in T.S.'s is of a different order from the other vowels, and is never long (cf. Note 3 to § 4.32), so that the 4a T.S. -uma:-ma:-(u)ma is no exception to the above generalisation.
 2. Pattern 2 O.E., cf. § 5.8. For the different shape of T.S. see § 5.51 below.

An examination of available examples of this kind of complex shows that with this arrangement -noo occurs in all simple preterite complexes, and also in all preterite 1-object complexes except those with 2 sing. O.E.. The -no alternant could therefore be said to be associated with a particular category of O.E.. But since the 2 sing. O.E. is the only O.E. having a long vowel, it is also possible to describe the shape of P.E. with this arrangement as an alternance -noo/-no, the distribution of the two alternants being correlated with the absence or presence of a subsequent long-vowelled O.E.; i.e. -noo occurs where either there is no subsequent O.E. or the O.E. is short-vowelled, -no where a long-vowelled O.E. follows. In view of comparable patterns in group E tenses, discussed below, this is in fact the more appropriate method of description.

5.19. Such a -noo/-no alternance occurs also in S-B-P-(0) complexes of tenses 9a and 9c; it is, apparently, also a possibility in tenses 10a-c, but in these tenses, particularly in 10a, there is a tendency to use -no in all complexes.

5.20. In brief, then, with arrangement S-P-B-(0) the P.E. is -no, but with the less usual arrangement S-B-P-(0) it is in tenses 9a-c a -noo/-no alternance correlated with the absence or presence of a long-vowelled O.E., and in tenses 10a-c either such a -noo/-no alternance or -no in all complexes.

Group E (Tenses numbered 14 and 15)

5.21. For this purpose tense 14a may be taken as typical of all group E tenses, the behaviour of the P.E. being the same in them all.

It is convenient to consider first the simple preterite complexes, some of which have arrangement S-B-P, others B-P-S (cf. § 3.18).

In all S-B-P complexes the P.E. is -noo, e.g. 'o-wall-u-noo "he had helped". But in B-P-S complexes both -noo and -no occur, e.g.

1 sing	S.E.	mball-u- <u>noo</u> -mi	I had helped
2 "	"	mball-u- <u>no</u> -daa	you had helped
2 pl. incl.	"	mball-u- <u>noo</u> -den	you and I had helped
2 pl. excl.	"	mball-u- <u>noo</u> -don	you had helped (pl.)

Here (as in the case of the T.S. in minimal complexes, cf. § 4.43)

the short-vowelled -no occurs in 2 sing. complexes, before the long-vowelled S.E. -daa, the long-vowelled -noo in the other complexes before the short-vowelled S.E.'s -mi, -den and -don. All simple preterite complexes can then be covered by the single statement that the long-vowelled form -noo occurs in all complexes except when there is a subsequent long-vowelled element. (~~either S.E. or O.E.~~).

5.22. The same statement proves adequate also for preterite 1-object complexes of these tenses. These are exemplified by the representative tense 14a complexes given in Appendix J, and the position may be summarised as follows :-

(a) In S-B-P-O complexes the P.E. is -no before the 2 sing.

O.E. which in this tense has the shape -maa (cf. §§ 5.12-13) e.g.

'o-wall-u-no-maa he had helped you.

But with all other O.E.'s (all of which are short-vowelled) it

is -noo, e.g.

'o-wall-u-noo-mo he had helped him
'o-wall-u-noo-6e he had helped them

- (b) Similarly in B-P-O-S complexes, such as mball-u-no-moo-mi, mball-u-no-maa-mi "I had helped him, you", the short-vowelled -no occurs before the long-vowelled O.E.'s -moo and -maa (cf. §§ 5.12-13), although in the corresponding simple preterite complex mball-u-noo-mi "I had helped" the P.E. is -noo (cf. § 5.21 above).
- (c) In B-P-S-O complexes, in which all O.E.'s are short-vowelled (cf. §§ 5.12-13)¹ the incidence of -noo and -no is correlated with the length of vowel in the following S.E., as in the case of the simple preterite complexes in § 5.21 above, e.g.

mball-u- <u>no</u> -daa-6e	you had helped them
but mball-u- <u>noo</u> -mi-6e	I had helped them
and mball-u- <u>noo</u> -den-6e	you and I had helped them

5.23. It is thus possible to state that in all preterite complexes of tense 14a, as well as in the remaining group E tenses, the P.E. has two alternant shapes -noo and -no, the former occurring where there is no subsequent element, or all subsequent elements are short-vowelled, the latter where any subsequent element is long-vowelled; i.e. the distribution of the two alternants is correlated with the absence or presence of a subsequent long-vowelled element.

1. -maa does not occur in B-P-S-O complexes, for B-P-S complexes have either 1 sing. S.E. (but with this S.E. -maa precedes the S.E., and the arrangement is B-(P)-O-S), or a 2nd person S.E. (with which 2 sing. O.E. is incompatible).

Conclusion

5.24. The distribution of the two shapes of P.E. may be summarised as follows :-

Group A(ii) -no

Group A(iii) An alternance -no/-noo correlated with the arrangement of the elements and the nature of the following element.

Group B A primary alternance between -no and -noo/-no, correlated with the arrangement of the elements, the second member being a secondary alternance correlated with the absence or presence of a subsequent long-vowelled O.E..

Group E An alternance -noo/-no correlated with the absence or presence of a subsequent long-vowelled element.

In short, the incidence of -noo and -no within any tense is correlated variously with the arrangement of the elements, or the phonological structure of any subsequent elements, or both; but whether the P.E. is a single shape or an alternance, as well as the nature of the alternance, is an integral feature of the tense.

(c) The Subject Element

5.25. A study of the representative enlarged complexes given in Appendix J shows that only in tense 15a do the shapes of S.E.'s differ from those found in the corresponding minimal complexes; and even here the S.E.'s in 1-object complexes are the same as in minimal complexes. The difference lies in the two types of preterite complex, as is clear from the following part-paradigms, in which the S.E.'s are underlined :-

	<u>Minimal</u> <u>Complexes</u>	<u>Simple Preterite</u> <u>Complexes</u>	<u>1-object Preterite</u> <u>Complexes</u>
3 sing.	'o-wall-ata	'o-wall-ai-noo	'o-wall-ai-noo- <u>be</u>
3 pl.	<u>be</u> -mball-ata	<u>be</u> -mball-ai-noo	<u>be</u> -mball-ai-noo- <u>be</u>
1 sing.	mball-ai- <u>mi</u>	mball-ai-noo- <u>mi</u>	mball-ai-noo- <u>mi</u> - <u>be</u>
1 pl.	<u>min</u> -mball-ata	<u>min</u> -mball-ai-noo	<u>min</u> -mball-ai-noo- <u>be</u>
2 sing.	mball-at- <u>aa</u>	mball-ai-no- <u>daa</u>	mball-ai-no- <u>daa</u> - <u>be</u>
2 pl. incl.	mball-et- <u>en</u>	mball-ai-noo- <u>den</u>	mball-ai-noo- <u>den</u> - <u>be</u>
2 pl. excl.	mball-ot- <u>on</u>	mball-ai-noo- <u>don</u>	mball-ai-noo- <u>den</u> - <u>be</u>
	"he will help" etc.	"he was going to help" etc.	"he was going to help them", etc.

In both types of preterite complex the 1st and 3rd person S.E.'s singular and plural have the same shape as in minimal complexes; but the 2nd person S.E.'s have the shapes -daa, -den, -don in contrast with the -aa, -en, -on found in minimal complexes. That is to say, the paradigms of preterite complexes of both types are characterised by S.E. series 5b in contrast with the series 4b of minimal and 1-object complexes. Thus there is a double correlation between the S.E. and the P.E.; not only does the shape of the P.E. vary according to the phonological category of the S.E. (cf. 5.21-22, which are applicable to this tense as well as to 14a), but the S.E. series itself varies with the absence or presence of the P.E..

5.26. This is, however, the only tense where the S.E. series in enlarged complexes is different from that found in minimal complexes. In every other tense the two are identical.¹

(d) The Radical

5.27. Only one specific point need be mentioned about the behaviour of the radical in enlarged complexes. Variation in composite radicals such as maßbit-/maßbut-, correlated with the first or only vowel of the T.S., is found regularly in enlarged complexes as well as in minimal complexes (cf. §§ 4.22-23 above); but since (as will be shown in section (e) of this chapter) there are a number of tenses, not characterised by the -U suffix cluster in minimal complexes, which nevertheless do have it in certain enlarged complexes, there is a corresponding difference in the actual distribution of the two radical variants among the tenses - maßbut- for instance occurring in some tenses in which it does not occur in minimal complexes. This difference is, however, merely incidental to the difference of T.S. in these tenses, and there is no difference in the behaviour of the radical. Similarly the behaviour of the radical in other respects - the distribution of the two alternant shapes of variform radicals, and the correlation between variations in some extended radicals and difference of voice - is the same in enlarged as in minimal complexes.

1. cf. column 3 of Appendix E.

(e) The Tense Suffix

5.28. During the study of the behaviour of O.E.'s and of the P.E. it was noted that the T.S. in some enlarged complexes is different from that found in the corresponding minimal complexes. In this section the T.S. in enlarged complexes is examined in order to establish the extent of the identity of T.S.'s found in corresponding minimal and enlarged complexes, and the circumstances in which there is divergence, and also to see what generalised statements can be made about the T.S. in all types of complex.

5.29. Tenses of group A will be considered first, then those of groups D and E, and finally those of groups B and C, this being the most convenient order for descriptive purposes.

Group A1-object complexes

5.30. A study of 1-object complexes of group A tenses shows that the majority of these tenses - viz. those numbered 1, 4, 6-8 and tenses 2c and 3c - have the same T.S. in 1-object complexes as in the corresponding minimal complexes, e.g. (1a)

'o-wall- <u>ii</u> -mo	he	helped	him
'o-wall- <u>ii</u> -6e	"	"	them
'o-wall- <u>ii</u> -yam	"	"	me
'o-wall- <u>ii</u> -ma	"	"	you

These tenses, it may be observed are also all characterised by the first series of O.E.'s, i.e. all O.E.'s are of pattern 1, cf. §§ 5.12, 5.11. In tenses 2a-b, 3a-b and 5a-b, on the other hand, the T.S. in some 1-object complexes is different from that in the corresponding minimal complexes. These tenses are characterised by the second or

third series of O.E.'s, i.e. one or more of the O.E.'s is of pattern 2 (cf. §§ 5.12, 5.11); and it is with these pattern 2 O.E.'s that the different T.S. occurs.

5.31. Thus in tense 2b 'o-yaaf-i-mo, 'o-yaaf-i-6e "he forgave him, them", and comparable forms with all other pattern 1 O.E.'s, the T.S. -i is identical with that found in minimal complexes. But the complexes having 1 sing. and 2 sing. O.E.'s are as follows :-

'o-yaaf-am	he <u>forgave</u> me
'o-yaaf-e	he <u>forgave</u> you

These, as stated in §§ 5.4 and 5.5, are most appropriately analysed as having Zero T.S. combined with the pattern 2 O.E.'s -am and -e. In this tense, then, the T.S. in 1-object complexes may be generalised as an alternance -i/Zero, the alternants being correlated with pattern 1 and pattern 2 O.E.'s respectively.

5.32. Similarly the T.S. in 1-object complexes of tense 2a may be described as an alternance -U/Zero; for with the 3 pl. and other pattern 1 O.E.'s the T.S. variants -u, zero and -(u) all occur with the appropriate types of radical, e.g.

Type I	'o-wall- <u>u</u> -6e	he <u>helped</u> them
Type II	'o-'anndin-6e	he <u>informed</u> them
Type III	'o-yo6-(<u>u</u>)-6e	he <u>paid</u> them

But with 1 sing. and 2 sing. O.E.'s of pattern 2, on the other hand, the T.S. is Zero¹ with all radicals, e.g

1. The different patterns found with series 1 O.E.'s (having an initial consonant) and series 2 O.E.'s (having no such consonant) are brought out clearly by contrasting tense 2a complexes of the radical yoof- "release" with (a) 2 pl. incl. and (b) 2 sing. O.E.'s :-

- (a) 'o-yoof-'en or 'o-yoof-u-'en (base + O.E. = yoof'en, yoofu'en) where zero and -u are free variants, and the glottal stop or constriction of 'en is quite clear, even in the first form;
- (b) 'o-yoof-e (base + O.E. = yoofe) where there is no glottal stop or constriction after the f, definitely shorter consonantal closure between -oo- and -e- than in 'o-yoof'en, and no possibility of an -u variant.

Type I radical	'o-wall-am	'o-wall-e	he <u>helped</u> me/you
Type II "	'o-'anndin-am	'o-'anndin-e	he <u>informed</u> me/you
Type III "	'o-yoδ-am	'o-yoδ-e	he <u>paid</u> me/you

In the same way the T.S. in 1-object complexes of tenses 5a and 5b may be generalised as -U/Zero and -o/Zero alternances, with the same distribution as in tense 2b. (For examples see Appendix J.)

5.33. In tense 3a, the same T.S. as in minimal complexes is found with O.E.'s of all categories except the 2nd person singular, i.e. with all pattern 1 O.E.'s, e.g. 'o-wall-ai-6e, 'o-wall-ai-yam, "he will help them, me". But, as stated in § 5.6, the 2 sing. object complexes such as 'o-wallete "he will help you" are most appropriately analysed as having T.S. -et combined with pattern 2 O.E. -e. In this tense, then, the T.S. in 1-object complexes may be generalised as an alternance -ai/-et, the first alternant being correlated with pattern 1 O.E.'s, the second with the only pattern 2 O.E. In the same way the tense 3b T.S. may be generalised as a comparable alternance -oto/-et (for examples see Appendix J). If Ψ is again used to represent a vowel which is identical with the following vowel, the two alternances may be further generalised as -ai/- Ψ t and -oto/- Ψ t respectively.

5.34. The T.S. in 1-object complexes of each of these six tenses, then, may be generalised as an alternance, correlated with the category of the O.E. but describable by reference to the pattern of O.E., while in the remaining fifteen tenses of group A the T.S. is a single suffix identical with that found in minimal complexes.

Preterite complexes

5.35. As regards preterite complexes, it will be recalled that
 1. Possibly these should be -ai/- Ψ t and -[o]to/- Ψ t, since further research would probably show that variant forms without a vowel occur with some radicals.

in tense 1c, preterite complexes such as 'o-suudanooma "he had been hidden" and 'o-suudanooma-mo "he had been hidden from him" were analysed (§ 3.10) as having not a single T.S., but two moieties -a and -ma (separated by the P.E. -noo) in contrast with the -aama of minimal complexes and 1-object complexes; with the less usual arrangement S-B-P, however, where the P.E. is -no (e.g. 'o-suud-aama-no), the T.S. is the same as in minimal complexes. The short vowel in -a...ma, contrasting with the long vowel in -aama, may be regarded as a feature of the occurrence of the long-vowelled P.E. -noo between the two moieties; for, as will be apparent from a study of tenses of groups B and E below, the vowel of a T.S. before -noo is always short, even though its counterpart in minimal complexes is long. The T.S. of this tense, then, may be generalised as an alternance -aama/-a...ma correlated with the arrangement of the elements and the shape of the P.E., which is itself correlated with the arrangement.

5.36. Tense 1c is, however, exceptional, and in all the remaining group A tenses the T.S.'s of preterite and minimal complexes are identical; compare for instance the 1a preterite complexes 'o-wall-ii-no "he had helped" and 'b-wall-ii-no-mo "he had helped him" with the minimal complex 'o-wall-ii "he helped". This is true even of tenses 2a-b and 3a-b, which have different T.S.'s in some 1-object complexes (cf. §§ 5.30-34); for in preterite 1-object complexes of these tenses 1 sing. and 2 sing. O.E.'s are not the pattern 2 forms, but the pattern 1 forms (cf. 5.13) in combination with the same T.S. as in minimal

complexes e.g.

2a	'o-wall- <u>u</u> ¹	he <u>helped</u>
	'o-wall- <u>u</u> -no	he had <u>helped</u>
	'o-wall- <u>u</u> -no-yam	" " " me
as against	'o-wall- <u>am</u>	he <u>helped</u> me
3a	'o-wall- <u>ai</u>	he will help
	'o-wall- <u>ai</u> -no	he was about to help
	'o-wall- <u>ai</u> -no-ma	" " " " " you
as against	'o-wall- <u>et-e</u>	he will help you

Group A, Summary

5.37. When minimal complexes and all types of enlarged complexes are taken together, the following generalisations may be made about the T.S.'s of group A tenses :-

The T.S. of tense 1c is an alternance correlated with the presence or absence of the P.E. (i.e. the type of complex), the arrangement of the elements, and the shape of the P.E.

The T.S. of each of the tenses 2a-b, 3a-b and 5a-b is an alternance correlated with the type of complex (minimal and preterite on the one hand, 1-object on the other) and the category of the O.E., but describable in terms of the pattern of O.E.; in tenses 2a and 5a the first member of the alternance is itself a suffix cluster correlated with the type of radical.

The T.S. of each of the remaining group A tenses is the same in both minimal and enlarged complexes, viz in tense 4a a suffix cluster correlated with the type of radical; in tenses 7a-c a set of variants correlated with different radicals or types of radical; and in the remainder a single suffix, constant throughout the paradigm and with all radicals. For ease of reference these T.S.'s

1. The variants zero and -(u) occurring with other types of radical are omitted here for the sake of simplicity.

are entered in columns 6 and 7 of Appendix M. and also listed in Appendix K .

Groups D and E

5.38. Even in minimal complexes the T.S. of each of these tenses is an alternance (-a/Zero, -ii/-i, -ee/-e etc.), cf. §§ 4.37 ff. The same shapes of suffix are found in enlarged complexes of nearly all the tenses, but there is a difference in their distribution, as can be seen from the representative complexes given in Appendix J.

Tense 14b

5.39. In minimal complexes of tense 14b, which is the first to be considered, the short-vowelled T.S. -i occurs only with the 2 sing. S.E. -daa, -ii in all other complexes (cf. § 4.45); but a study of the 1-object complexes given in Appendix J shows that here -i occurs not only before the 2 sing. S.E. -daa in B-S-O complexes, with O.E.'s of all relevant categories

(e.g. njaaf-i-daa-6e you forgave them)

but also with 2 sing. O.E. -maa in S-B-O complexes

(e.g. 'o-yaaf-i-maa he forgave you)

and with 2 sing. and 3 sing. (Cl.1) O.E. -maa and -moo in B-O-S complexes

(e.g. njaaf-i-maa-mi I forgave you
njaaf-i-moo-mi I forgave him).

-ii again occurs in all other complexes, e.g.

S-B-O 'o-yaaf-ii-6e he forgave them
B-S-O njaaf-ii-mi-6e I forgave them.

5.40. Now since -maa and -moo are both pattern 3 O.E.'s, the incidence of the -i suffix could be described as correlated with pattern 3 O.E.'s and the 2 sing. S.E.; but since these three elements are in fact the only long-vowelled elements following the base in

l-object complexes, a simpler overall statement is possible if -i is described as correlated with the presence of a subsequent long-vowelled element within the complex.

5.41. In all preterite complexes of tense 14b the T.S. is -i (see Appendix J); But since in this tense the P.E. either itself has a long vowel or is followed by another long-vowelled element,¹ here again the -i suffix is always associated with a subsequent long vowel within the complex.²

5.42. Thus the most economical description of the distribution of the two alternants -ii and -i in this tense as a whole is to say that the short-vowelled alternant -i occurs in all complexes in which there is a subsequent long-vowelled element (S.E., O.E. or P.E.) within the complex, the long-vowelled alternant -ii in all complexes where there is no subsequent long-vowelled element (i.e. where there is no subsequent element or all subsequent elements are short-vowelled). In brief, the T.S. of tense 14b may be generalised as an alternance -ii/-i correlated with the absence or presence of a subsequent long-vowelled element within the complex.

1. cf. §§ 5.21-23, which apply to tense 14b as well as to tense 14a.
2. "Within the complex" because there is not correlation between the T.S. and features of a word outside the complex. Thus the 14b T.S. is -ii before the long-vowelled syllable moo- in
 'o-yaaf-ii moodibbo "he forgave the teacher"
 as well as before the short-vowelled syllables su- and -ka in
 'o-yaaf-ii suka "he forgave the youth".
 Similarly the 14a T.S. is -i in 'o-wall-i moodibbo
 "he helped the teacher" as well as in 'o-wall-i suka
 "he helped the youth". Contrast § 5.44.

Tenses 13b-c, 14c, 15b-c

5.43. Similarly in enlarged complexes of tenses 13b-c, 14c and 15b-c the short-vowelled T.S. alternant (-o, -e, -a, -oto, -ete)¹ is found in all complexes in which there is a subsequent long-vowelled element (S.E., O.E. or P.E.), the long-vowelled alternant (-oo, -ee, -aa, -otoo, -etee) in all complexes where there is no subsequent long vowel. (For examples, see Appendix J). This is true even of those complexes where the short-vowelled form of the 2 sing. O.E. is used (e.g. 13c 'o-suuf-ee-ma "he is to be hidden from you"); for here the T.S. is the long-vowelled -ee. Since the distribution of the two alternants in minimal complexes can be described in the same terms (cf. §§4.46-47), the T.S. in each of these tenses as a whole can be generalised as an alternance of the pattern -VV/-V or -VtVV/-VtV, correlated with the absence or presence of a subsequent long-vowelled element.

Tense 14a

5.44. In the case of tense 14a the same suffix shapes describable as -i and -U, occur in enlarged complexes as in minimal complexes. But whereas in minimal complexes -i occurs in all S-B complexes, and the -U alternant is confined to B-S complexes, in enlarged complexes of all three types, on the other hand, -U occurs not only in B-S complexes, but also in S-B complexes when the base is followed by the long-vowelled 2 sing. O.E. -maa or the P.E. -noo (but not when it is followed

1. See note on § 5.45(2)

by a short-vowelled O.E. only); contrast for instance

'o-wall-u-maa, 'o-wall-u-noo, 'o-wall-u-no-maa with 'o-wall-i-yam¹
 'o-'anndin-maa, 'o-'anndin-noo, 'o-'anndin-no-maa " 'o-'anndin-i-yam
 'o-yoδ-(u)-maa, 'o-yoδ-(u)-noo, 'o-yoδ-(u)-no-maa " 'o-yoδ-i-yam

Taking all types of complex in this tense together, the T.S. for the tense as a whole may be generalised as (a) in S-B complexes, an -i/-U alternance correlated with the absence or presence of a subsequent long-vowelled element, and (b) in B-S complexes, -U (-U in both cases representing the suffix-cluster -u:zero:-(u)).

Tense 15a

5.45. Tense 15a has a basically similar pattern, though it is more involved. It will be recalled that in minimal complexes characterised by arrangement B-S (cf. § 4.41) the T.S. is (a) in 1 sing. complexes, -ai before the consonant-initial S.E. -mi, but (b) in 2nd person complexes, a set of variants generalised as -vt, before the vowel-initial S.E.'s -aa, -en and -on. The same variants, describable, as -ai and -vt, are found in B-(P)-(O)-S and B-(P)-S-(O) enlarged complexes, but there is not the same clear-cut distinction between 1 sing. and 2 sing. complexes.

(1) -ai occurs in 1 sing. enlarged complexes of all types, as well as in minimal complexes, e.g.

B-S	mball- <u>ai</u> -mi	I will help
B-S-O	mball- <u>ai</u> -mi-ŋe	" " " them
B-P-S	mball- <u>ai</u> -noo-mi	I was about to help
B-P-S-O	mball- <u>ai</u> -noo-mi-ŋe	" " " " " them
B-P-O-S	mball- <u>ai</u> -no-maa-mi	" " " " " you
B-O-S	mball- <u>ai</u> -maa-mi	I will help you

1. The meanings are "he helped you", "he had helped", "he had helped you", "he helped me", and similarly with the other radicals "inform" and "pay".

(2) The set of variants -at, -et, -ot, generalised as -Vt,¹ occurs in non-preterite 1-object complexes as well as minimal complexes of all 2nd persons, e.g.

mball- <u>at</u> -aa-6e	you will help them
mball- <u>et</u> -en-6e	you and I " " "
mball- <u>ot</u> -on-6e	you (pl.) " " "

(3) But in both types of preterite complexes of all 2nd persons, where the P.E. intervenes between T.S. and S.E.

(cf. §§ 3.18, 5.25), the T.S. is not -Vt but -ai, e.g.

mball-ai-no-daa(-6e)	you were about to help (them)
mball-ai-noo-den(-6e)	you and I " " " " (")
mball--ai-noo-don(-6e)	you (pl.) " " " " (")

The contrast between -ai in these last examples and -Vt in the corresponding minimal complexes mball-at-aa, mball-et-en and mball-ot-on corresponds to the fact that in the preterite complexes the T.S. is followed by the consonant-initial P.E. -noo/-no, as against the vowel-initial S.E. in minimal complexes. Thus in spite of this difference in 2nd person complexes, the T.S. in B-S complexes may be described in the same terms for both minimal and enlarged complexes, viz. as a suffix cluster correlated with the phonological structure of the next element.²

5.46. As regards S-B complexes of this tense, whereas in minimal complexes the T.S. is always -ata, in enlarged complexes -ata occurs only where all subsequent elements are short (including the 2 sing. O.E. -ma in 'o-wall-ata-ma "he will help you"). Where, on the other hand,

1. The variant forms (without the first vowel of the T.S.) which occur with Type II and potentially with some Type III radicals are omitted here, and in § 5.43 for the sake of simplicity.

2. The term 'the next element' will hereafter be used to refer to the element following immediately after the base.

there is a subsequent long-vowelled element (-maa or -noo),
the T.S. is -ai, e.g.

S-B-O	'o-wall- <u>ai</u> -maa	he will help you
S-B-P	'o-wall- <u>ai</u> -noo	he was about to help
S-B-P-O	'o-wall- <u>ai</u> -noo-6e	" " " " " them
"	'o-wall- <u>ai</u> -no-maa	" " " " " you

5.47. For tense 15a as a whole, then, the T.S. may be generalised as a primary alternance correlated with the arrangement of the elements, (a) in S-B complexes an -ata/-ai alternance correlated with the absence or presence of a subsequent long-vowelled element, and (b) in B-S complexes, the suffix cluster -ai:4t, correlated with the phonological structure of the next element.

Tense 13a

5.48. There is again a comparable pattern, with a primary alternance correlated with the arrangement of the elements in tense 13a, where 1-object complexes are the only enlarged complexes. Where the arrangement is B-S-O, the T.S. is Zero, as in the corresponding minimal complexes, e.g.

mball-aa-6e	you should help them
mball-en-6e	you and I " " "
mball-on-6e	you (pl.) " " "

But in S-B-O complexes the T.S. is different with different O.E.'s,
e.g.

Pattern 1 O.E.'s

Pattern 3 O.E.

'o-wall- <u>a</u> -6e	but	'o-wall- <u>u</u> -maa	he is to help them, you
'o-'anndin- <u>a</u> -6e	"	'o-'anndin-maa	" " " inform ", "
'o-yo6- <u>a</u> -6e	"	'o-yo6-(<u>u</u>)-maa	" " " pay ", "

This shows that the T.S. is -a before short-vowelled, pattern 1 O.E.'s,
but before the long-vowelled -maa it is -u, zero, or -U according to

the type of radical. For this tense as a whole, then, the T.S. may be generalised as (a) in S-B complexes an -a/-U alternance correlated with the absence or presence of a subsequent long-vowelled O.E., and (b) in B-S complexes, Zero suffix with all O.E.'s and all types of radical.

Groups D and E. Summary

5.49. The position in tenses of groups D and E may be summarised as follows :-

The T.S. of each of the tenses 13b-c, 14b-c and 15b-c may be generalised as an alternance, of the pattern -VV/-V or -VtVV/-VtV, correlated with the absence or presence of a subsequent long-vowelled element.

The T.S. in each of the tenses 13a, 14a and 15a may be generalised as a primary alternance correlated with the difference in the arrangement of the elements, the first member being itself a secondary alternance correlated with the absence or presence of a subsequent long-vowelled element; and the second member in tense 15a being a suffix cluster correlated with the phonological structure of the next element, with further correlation between the vowel of the suffix and the vowel of the S.E. in specific circumstances.

Finally, one or more of the alternants in tenses 13a and 14a, is a suffix cluster, correlated with the type of radical, and one or more of the alternants in tenses 15a-c is a set of variants correlated with different radicals or types of radical.

The T.S.'s of these tenses, like those of group A, are entered for ease of reference in Appendix K and in columns 6 and 7 of Appendix M.

Groups B and C

5.50. The T.S.'s in minimal complexes of tenses numbered 9 and 11 are, as shown in Appendix H, the same as those in S-B complexes of tenses numbered 14 of the same voice; and the T.S.'s in minimal complexes of tenses numbered 10 and 12 are the same as those in S-B complexes of tenses numbered 13 of the same voice. This parallelism is also found in enlarged complexes of these tenses, so that the T.S.'s of tenses of groups B-C can be described in terms similar to those used concerning tenses of groups D and E.

Group B

5.51. Examination of the relevant complexes given in Appendix J shows that the T.S. in enlarged complexes of each of the tenses 9a-c and 10a-c can be described as an alternance, respectively -i/-U, -ii/-i, -aa/-a and -a/U, -oo/-o, -ee/-e, the first alternant in each case being identical with the single suffix in minimal complexes, (cf. Appendix H and columns 6 and 7 of Appendix M). In each tense the second alternant occurs where there is a subsequent long-vowelled element (O.E. or P.E.), the first in all other complexes, as in the case of the 9b alternance -ii/-i :-

1-object complexes

S-B-O, Pattern 1	O.E.	midon-jog- <u>ii</u> -mo	I have hold of him
" " 3 "		midon-jog- <u>i</u> -maa	" " " " you

Preterite complexes

S-P-B		midon-no-jog- <u>ii</u>	I had hold
S-P-B-O, Pattern 1	O.E.	midon-no-jog- <u>ii</u> -mo	I had hold of him
" " 3 "		midon-no-jog- <u>i</u> -maa	" " " " you
S-B-P		midon-jog- <u>i</u> -noo	I had hold
S-B-P-O	" 1 "	midon-jog- <u>i</u> -noo-mo	" " " of him
" " 3 "		midon-jog- <u>i</u> -no-maa	" " " " you

Here -i occurs before -maa and -noo, -ii before -mo and where the T.S. is final.

5.52. It is to be noted that in 2 sing. object complexes of tenses 9c and 10c, where -ma and -maa occur as free variants (cf. § 5.8(3)), the long-vowel T.S. occurs before the short-vowelled O.E. -ma, the short-vowel T.S. before the long-vowelled O.E. -maa; contrast for instance

- 9c 'odon-suud-aa-ma with 'odon-suud-a-maa
"he is hidden from you"
10c 'odon-suud-ee-ma with 'odon-suud-e-maa
"he is being hidden from you"

It is also to be noted that in the rare cases where the short-vowelled form of the P.E. -no follows the base in simple preterite complexes, the first T.S. alternant is found and not the second, e.g. (10a)

'odon-war-a-no he was coming

Such usages would not be covered if the correlation of the alternants were stated in terms of the category of the element (e.g. 2 sing. O.E., or P.E.), but are covered if it is stated in terms of the absence or presence of a long-vowelled element.

Group C

5.53. The six alternances found in tenses of group B also occur in the corresponding tenses of group C. (cf. Appendices J and K, and columns 6 and 7 of Appendix M). These have no preterite complex, but since the shorter alternant occurs only before the long-vowelled 2 sing. O.E. -maa, it is convenient again to describe the distribution of the two alternants in terms of the absence or presence of a subsequent long-vowelled element.

Conclusion

5.54. In brief, then, the T.S. in the majority of group A tenses is the same for all types of complex (some tenses having a suffix cluster or set of variants correlated with different radicals or types of radical); but in enlarged complexes of some tenses there is an alternance correlated with the pattern of O.E. or the position and shape of the P.E.. In tenses of groups B and C, the T.S.'s in minimal complexes are single suffixes, but in enlarged complexes there are alternances correlated with the arrangement of the elements and the phonological structure of O.E. and/or P.E., and sometimes the type of radical. In tenses of groups D and E the same suffix alternants and variants are found in minimal and enlarged complexes, but their distribution differs in different types of complex, being correlated, in enlarged complexes, with the phonological structure of O.E. and P.E. as well as with various aspects of S.E., radical, the arrangement of the elements. Finally, even where there is a difference of T.S. between minimal and enlarged complexes, it is in each case possible to make a generalised statement covering all types of complex.

Chapter 6

The Tense Suffix - Some Generalisations

6.1. In section (e) of Chapter 5 the T.S.'s of individual tenses were discussed, and in particular the correlation of various alternances with the elements of the complex was examined. In this chapter a broader view is taken of the whole range of T.S.'s in all tenses, and consideration is given to the possibility of making further generalisations about the alternances themselves, the relation of the alternants to each other and to other elements, and the relation between the T.S. in minimal and corresponding enlarged complexes.

6.2. In the first place it is to be noted that there is an essential difference between (a) the alternances discussed in the last section of chapter 5 and (b) the suffix cluster -u:zero(u) (represented by -U) and variations of the type -ataa, -taa, -(a)taa (represented by the use of square brackets, e.g. -[a]taa). The difference is that while both the latter are correlated with features of the radical, that is, the element preceding the T.S., the former alternances, which are the subject of further consideration here, are all correlated with features of subsequent elements.

6.3. Among these alternances two main types may be distinguished:-

- (A) The first type, found in all tenses of groups B-E, is correlated with the absence or presence of a subsequent long-vowelled element, the first alternant occurring where there is no subsequent long-vowelled element, the second where one of the sub-

sequent elements is long-vowelled. The various alternances of this type may be grouped as follows :-

- (a) -ii/-i, -aa/-a, -oo/-o, -ee/-e
- (b) -[o]too/-[o]to, -[e]tee/-[e]te
- (c) -i/-U, -a/-U
- (d) -[a]ta/-ai

These alternances may conveniently be generalised as

- (a) -VV/-V
- (b) -[V]tVV/-[V]tV
- (c) -V/-U
- (d) -[V]tV/-ai

In view of the comparative frequency of this type of alternance, it is appropriate to treat the -aama/-a...ma alternance in tense 1c as also being of this type. In this case, then, there is an alternance of moieties -aa/-a of pattern (a), the second moiety -ma being constant.

Wherever these alternances occur, it may be observed, the next element is one of the following: a series 4 S.E., or a pattern 1 or pattern 3 O.E., or else the P.E., all of which begin with a consonant.

- (B) The second type of alternance (found in tenses 2a-b, 3a-b, and 5a-b) is correlated with the shape of the next element, the first alternant occurring where there is no subsequent element or the next element begins with a consonant, and the second alternant occurring where the next element (a pattern 2 O.E.) begins with a vowel. The various alternances of this

type may be grouped as follows :-

- (1) -i/Zero (2b) and -o/Zero (5b), (which may be generalised as -V/Zero)
- (ii) -oto/- \forall t (3b) (which may be stated in general terms as - \forall tV/- \forall t)
- (iii) -U/Zero (2a, 5a)
- (iv) -ai/- \forall t (3a)

In all these cases, it may be observed, all elements following the T.S. are short-vowelled, since in these tenses the P.E. is -no, and all O.E.'s belong to either pattern 1 or pattern 2 (cf. columns 9 and 8 of Appendix L).

6.4. Study of the correlations of these types of alternance shows that the first member of the two types have this in common, that they occur where (i) the next element begins with a consonant and (ii) there is no subsequent long-vowelled element (i.e. there is no subsequent element, or every subsequent element is short-vowelled). With this common factor it is possible to combine the two types of alternance into a single system, described in terms of the following three complementary sets of circumstances :-

- (1) Where (i) the next element if any begins with a consonant and (ii) there is no subsequent long-vowelled element. This applies to the first member of both types of alternance.
- (2) Where (i) the next element begins with a consonant but (ii) one of the subsequent elements contains a long vowel. This applies to the second member of the first type of alternance.
- (3) Where the next element begins with a vowel. This applies to the second member of the second type of alternance.

6.5. We can postulate that a T.S. or moiety may have, at least potentially, three positional variants, to be called first form, second form, and third form, occurring in these three complementary

sets of circumstances. Alternances of type (A) may then be described as alternances between the first form and the second form, and alternances of type (B) as alternances between the first form and the third form; and the various patterns of alternance considered in § 6.3 above may be combined into three-member alternances and listed as shown below. (Pattern (i) is combined with pattern (c) since the first member of each is generalised as -V, and pattern (ii) is combined with pattern (d) since the first member of each is generalised as $-[V]tV$ or $-VtV$. (iii) and (iv) are re-labelled (e) and (f)).

	<u>1st form</u>	<u>2nd form</u>	<u>3rd form</u>	<u>examples</u>
(a)	-VV	-V	-	(-ii/-i, -aa/-a (-oo/-o, -ee/-e (-aama/-a...ma
(b)	$-[V]tVV$	$-[V]tV$	-	($-[o]too/-[o]to$ ($-[e]tee/-[e]te$
(c)	-V	-U	Zero	(-i/-U, -a/-U (-i/Zero, -o/Zero
(d)	$[-V]tV$	-ai	$-Vt$	($-[a]ta/-ai$ (-oto/ $-Vt$ 1
(e)	-U	-U	Zero	(-U/-U in 14a (B-S) (-U/Zero
(f)	-ai	-ai	$-[V]t$	(-ai/-ai/ $-[V]t$ (in 15a(B-S) (-ai/ $-Vt$ 2

6.6. If the same sets of circumstances are applied to B-S complexes of tense 14a, previously described as characterised by an -U suffix cluster it is necessary to postulate two -U clusters with

1. This should perhaps be $-[o]to/-Vt$ or $-[o]to/-[V]t$, cf. notes on §§ 4.35 and 5.33

2. This should perhaps be $-ai/-[V]t$, see note on § 5.33.

the same range of suffixes but formally distinct, viz. a first form occurring where every subsequent element is short-vowelled (e.g. mball-u-mi, mball-u-mi-ſe "I helped (them)"), and a second form occurring where one element is long-vowelled (e.g. mball-u-noo-mi, mball-u-no-moo-mi, mball-u(-no)-daa(-ſe) "I had helped (him)", "you (had) helped (them)"). Similarly for B-S complexes of tense 15a it is necessary to postulate, in addition to the third form -Vt occurring before vowel-initial elements, two homophonous but formally distinct -ai suffixes occurring before a consonant-initial element - a first form occurring where every subsequent element is short-vowelled (e.g. mball-ai-mi, mball-ai-mi-ſe "I will help (them)"), and a second form occurring where one element is long-vowelled (e.g. mball-ai-noo-mi, mball-ai-no-daa "I was about to help, you were about to help"). It is on this account that -U and -ai have been shown as second forms in patterns (e) and (f).

6.7. Since the three forms are positional variants, and in each case the second and third form can, on the basis of the above table, be predicted from a given first form, the three forms may be subsumed under a single generalised T.S., which may be referred to by quoting the 1st form preceded by an asterisk. Thus the T.S. of tense 9b (-ii/-i) may be referred to as *-ii, that of tense 3a (-ai/-Vt) as *-ai, those of both tense 9a (-i/-U) and tense 2a (-i/zero) as *-i,

and the alternance in tense 15a ($-\text{[a]ta}/-\text{ai}/-\text{ai}/-\text{[v]t}$) as $\ast-\text{[a]ta}/-\text{ai}^1$.

6.8. In Appendix L the generalised suffix is given for each of the various T.S. alternances, which are arranged under the appropriate phonological pattern. It will be observed that some individual suffixes occur as 1st form in one pattern and 2nd form in another (-oto in 3b and 15b, -i, -a, -o, -U and -ai in various tenses); this is of course a reflection of the fact that they occur in different sets of circumstances, and are therefore formally distinct and belong to different generalised T.S.'s.

6.9. A comparison of Appendix L with Appendix K shows that every tense characterised by a T.S. alternance can now be described in terms of a generalised suffix, which is concise, but at the same time is indicative of the potential range of suffixes for that tense. In fact all three forms occur in only two tenses—15a(B-S) and 13a—but the value of this method of treatment is none the less real.

6.10. Of the remaining tenses, several have a single T.S. whose shape and behaviour would justify its being treated as a 1st form T.S., viz. 1a (-ii), 8a (-aa), 7a (-[ataa]), 2c (-a) and 3c (-ete). These T.S.'s all occur in circumstances (1); for in enlarged complexes of these tenses (all of which belong to group A) none of the possible

1. \ast -ata (in S-B complexes) and \ast -ai (in B-S complexes) cannot be subsumed under a single suffix, for in mball-ai-mi -ai occurs in circumstances (1) (there being no subsequent long-vowelled element), where on the above basis a first form is appropriate.

Similarly in tense 14a, since in mball-u-mi -U occurs in circumstances where a first form is appropriate, it is impossible to subsume the \ast -i of S-B complexes and the \ast -U of B-S complexes under a single generalised suffix, and the T.S. must be stated as an alternance \ast -i/ \ast -U.

subsequent elements has a long vowel or begins with a vowel, P.E. being -no and all O.E.'s being pattern 1. (cf columns 9 and 8 of Appendix M). It is therefore possible to regard these as being 1st form T.S.'s (of the patterns -V, $\overline{(-V)}$, $\overline{-[V]tW}$, $\overline{-[V]tV}$), the 2nd and 3rd forms of which do not occur since the circumstances in which they would occur are not found in these tenses. There is, however, no particular advantage in such treatment, and the T.S.'s of these tenses will be treated as single suffixes.

6.11. The T.S.'s of the other nine tenses (1b-ake; 4a-c -Uma, -ooma, and -eema; 6a-c -aayi, -aaki, -aaka; and 7b-c -[a]taako, -[a]taake) again appear only in circumstances appropriate to 1st forms, (cf. columns 9 and 8 of Appendix M), so that no question of a 2nd or 3rd form arises; moreover their shapes do not fit in with any of the six regular patterns, nor is there any reason, in this variety of Fula, for breaking them down into moieties.¹ Accordingly they also will be treated simply as single suffixes or suffix clusters (4a) or sets of variants (7b-c).

Conclusion.

6.12. The different types of T.S. alternance found in many tenses may justifiably be regarded as sections of three-term alternances, the members of which (called 1st form, 2nd form and 3rd form) are correlated with various phonological features of the subsequent

1. In some dialects, however, the T.S.'s of tenses 6b and 6c would have to be broken down into the moieties * -aa...ki and * -aa...ka, with second forms -a...ki and -a...ka to cover such preterite complexes as 'o-suud-a-noo-ki "he had not gone into hiding" and 'o-suud-a-noo-ka "he had not been hidden", corresponding to the Gombe complexes 'o-suud-aaki-no and 'o-suud-aaka-no cf. Labouret, La Langue des Peuls ou Foulbé, § 234.)

elements within the complex. As a result, the T.S.'s of all tenses may be described either as single suffixes, suffix clusters, or sets of variants (correlated with differences in the radical, and independent of tense) or as generalised suffixes from which variant suffixes are predictable.

6.13. Furthermore, where the suffixes occurring in enlarged complexes differ from those in the corresponding minimal complexes, they are now seen to be positional variants. There is thus in all tenses a systematic relationship between the T.S. found in enlarged complexes and that found in the corresponding minimal complexes, the former being in some tenses identical with the latter, in other tenses a set of positional variants predictable from it.

Chapter 7

Other Features of the Verbal Complex

7.1. The elements considered so far are those into which complexes can be broken down by a process of fragmentation; but the two features considered in this section are of a different order, the first, final glottality, being an additional linear feature occurring only in certain circumstances, while the second, the intonation pattern, applies to the complex as a whole.

(a) Final Glottality

7.2. The term final glottality (F.G.) is used to refer to the possibility of glottal closure, with eventual but not immediate release, at the end of a complex. Such glottal closure is a pre-pausal feature, occurring, with most speakers¹, at the end of words or complexes of certain types when in pause, but not in medial position, in most types of sentence.² With other types of words or complexes, which may be said to be marked by absence of F.G., such glottal closure does not occur even in pause.

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1. There are some speakers with whom this glottal closure is barely noticeable in normal speech; but with others, in Gombe and in many other dialects, its occurrence is so regular that it must be taken into account as a feature of the language.
 2. Such glottal closure occurs in sentences having a final falling intonation, but not in sentences having a final rising intonation. For details see Appendix A.3.

7.3. In this thesis F.G. is indicated by an apostrophe at the end of every complex to which it applies, e.g. midon-war-a'; "I am coming" and absence of F.G. will be indicated, in this section, by ^h written above the line, e.g. 'o-suudf-ake^h "he hid himself".

7.4. Whereas with other parts of speech F.G. or absence of F.G. may be described as a feature of a whole class of words (for instance, all full nominals and nominal substitutes¹ have F.G., but adverbs, demonstratives and numerals do not), no such generalisation can be made about verbal complexes, and different types of complex and different groups of tenses must be considered separately.

(i) Minimal Complexes

7.5. The incidence of F.G. in minimal complexes is indicated by the apostrophe at the end of the complexes set out in Appendix 9. From this it can be seen that none of the minimal complexes in tenses of group A (characterised by arrangement S-B throughout the paradigm) is marked by F.G., e.g.

1a	'o-suudf-ii ^h	he hid
1b	'o-suudf-ake ^h	he hid himself
2a	'o-suudf-u ^h	he <u>hid</u>
	cf. 'o-war ^h	he <u>came</u>
6a	'o-suudf-aayi ^h	he did not hide
7a	'o-suudf-ataa ^h	he will not hide

1. By 'full nominal' is meant a member of the nominal system having a suffix belonging to one of the four series of nominal suffixes (listed in Table 1 of my article 'Some Features of the Nominal Class System of Fula in Nigeria, Dahomey and Niger', Afrika und Uebersee, Band XLIII/4 - 1960, pp.246-7) and certain other grammatical characteristics; they correspond roughly to the nouns and adjectives of traditional grammar. 'Nominal substitutes' are other members of the nominal system, corresponding to the independent (or disjunctive) pronouns of traditional grammar.

7.6. In tenses of groups B and C, on the other hand, where the arrangement is also S-B, all complexes have F.G., e.g.

10a	'odon-suud-a'	he is hiding
9b	'odon-suud-ii'	he is in hiding
12b	'emo-suud-oo'	he was going into hiding
11c	'emo-suud-aa'	he was hidden

7.7. F.G. is also a feature of all complexes in tenses of groups D and E, even though the arrangement of elements in these tenses varies, sometimes the T.S. and sometimes the S.E. being in final position, e.g.

14b	'o-suud-ii'	he went into hiding
	shuud-ii-mi'	I " " "
	shuud-i-daa'	you " " "
	shuud-ii-den'	you & I went into hiding
15a	'o-suud-ata'	he will hide
	shuud-ai-mi'	I " "
	shuud-at-aa'	you " "
	shuud-et-en'	you & I will hide

7.8. The incidence of F.G. in minimal complexes is thus most concisely described as correlated with the difference of tense, tenses of groups B-E being characterised by F.G., tenses of group A by absence of F.G.

(ii) 1-object Complexes

Group A

7.9. In 1-object complexes there is much greater variety than in minimal complexes, as can be seen in part from Appendix J. Thus in tense 1a the only complexes which do not have F.G. are those with O.E.'s of category B¹ (1st and 2nd persons singular and plural), and of category C (dum, referring to a full nominal in the same sentence,

corresponding to Zero S.E.) e.g.

'o-suud-ii-yam ^h	he hid me
'o-suud-ii-ma ^h	" " you
'o-suud-ii-min ^h	" " us
'o-suud-ii-'en ^h	" " you and me
'o-suud-ii-dum ^h	" " him/them

In contrast with these, every complex containing an O.E. of category A (i.e. one of the 3rd person O.E.'s associated with the nominal class system) is marked by F.G., e.g.

'o-suud-ii-mo'	he hid him
'o-suud-ii-ngel'	he hid it
'o-suud-ii-6e'	" " them
'o-suud-ii-dum' (Class 23)	" " it

The same distribution is found in all other tenses of group A, F.G. occurring with all O.E.'s of category A, but not with those of category B or C. This applies to pattern 2 as well as pattern 1 O.E.'s of category B, e.g.

5a ('Alla) wall-am ^h	God help me!
('Alla) wall-e ^h	God help you!
3a 'o-wall-et-e ^h	he will help you

In these tenses, then, F.G. must be described by reference to the category of the O.E., the final element in the complex.

Groups B and C

7.10 In tenses of groups B and C, where the O.E. is again in final position, the incidence of F.G. is almost the same as in group A tenses, e.g. (10a)

O.E. of Category B	midon-wall-a-'on ^h	I am helping you
" " " C	midon-wall-a-dum ^h	" " " him/them
but		
O.E. of Category A	midon-wall-a-mo'	I am helping him

But in the case of complexes having 2 sing. O.E. the incidence of F.G. differs according to the pattern of the O.E.. Thus F.G. does not occur with the pattern of 1 O.E. -ma, (cf. § 5.8(3)) which is comparable with the other O.E.'s of Category B, e.g. (9c)

'odon-suuf-ee-ma^h he is being hidden from you

but F.G. does occur with the pattern 3 O.E. -maa (cf. 5.8(2)), e.g. (9a)

midon-wall-u-maa' I am helping you

In tenses of groups B and C, then, the incidence of F.G. must be described by reference not only to the category of the O.E. but in the case of the 2 sing. O.E., also by reference to its pattern.

Groups D and E

7.11. Tenses of groups D and E may be illustrated by the following complexes of tense 15a :-

S-B-O	'o-wall-ata-yam ^h , 'o-wall-ata-ma ^h , -en ^h , -dum ^h but 'o-wall-ai-maa', 'o-wall-ata-mo', -ŕe', etc. ¹
B-S-O	mball-at-aa-yam ^h , mball-at-aa-dum ^h but mball-at-aa-mo', mball-at-aa-ŕe' etc. mball-ai-mi-'on ^h , mball-ai-mi-dum ^h but mball-ai-mi-ŕe' etc.
B-O-S	mball-ai-maa-mi', mball-ai-moo-mi'

1. "etc." indicates that the pattern is the same with all other O.E.'s of category A.

The meanings of these complexes are as follows :-

S-B-O "he will help me, you, you and me, him/them"

"he will help you, him, them"

B-S-O "you will help me, him/them"

"you will help him, them"

"I will help you (pl.), him/them"

"I will help them"

B-O-S "I will help you, him"

dum in these complexes is the O.E. of category C, corresponding to zero S.E..

In the case of both S-B-O and B-S-O complexes F.G. occurs with complex-final O.E.'s of category A, but not with the majority of O.E.'s of categories B and C; in the case of the 2 sing. O.E., however, the incidence of F.G. is the same as in tenses of groups B and C, F.G. occurring with the pattern 3 O.E. -maa but not with the pattern 1 O.E. -ma. The B-O-S complexes, with complex-final S.E. -mi, are marked by F.G., like the corresponding 1 sing. minimal complexes (cf. § 7.7. above).

7.12. The incidence of F.G. in the remaining tenses of groups D and E may be described in the same terms, even though the distribution of the different arrangements and of the -maa and -ma forms of the 2 sing. O.E. vary from tense to tense.

1-object complexes, Summary

7.13 When all tenses are taken together, the incidence of F.G. in 1-object complexes may be covered by the generalisation that F.G. occurs in the B-O-S complexes of group E tenses, as in the corresponding minimal complexes; but in the case of S-B-O and B-S-O complexes of all tenses where the final element is an O.E. the incidence of F.G. is correlated with the category and pattern of O.E..

(iii) Preterite 1-object complexes

7.14. In preterite 1-object complexes, where the same elements occur in final position as in the corresponding non-preterite 1-object complexes, it is not surprising to find that the incidence of F.G. is the same, and can be covered by the same generalisation.

(iv) Simple preterite complexes

7.15. In simple preterite complexes, the incidence of F.G. closely resembles the incidence with minimal complexes; but there is an important difference which necessitates a different form of statement.

7.16. F.G. occurs in simple preterite complexes of all group E tenses (whether the final element is the P.E. or the S.E.) but not in those of group A (whether the final element is the P.E. or the O.E.), e.g.

Group E	S-B-P	15a	'o-suud-ai-noo'	"he was going to hide"
		15b	'o-suud-oto-noo'	"he was going to hide himself"
		14b	'o-suud-i-noo'	"he had hidden himself"
	B-P-S	15a	shuud-ai-noo-mi'	"I was going to hide"
		15b	shuud-oto-noo-mi'	"I was going to hide myself"
			shuud-oto-no-daa'	"you were going to hide your- self"
		shuud-oto-noo-den'	"you and I were going to hide ourselves"	
Group A	S-B-O	1a	'o-suud-ii-no ^h	"he had hidden"
		7a	'o-suud-ataa-no ^h	"he was, not going to hide"
	S-R-t ₁ -P-t ₂ -O	1c	'o-suud-a-noo-ma ^h	"he had been hidden"

In these tenses, then, the incidence of F.G. can be described as a feature of the tense, as in the corresponding minimal complexes; but it is to be noted that where the P.E. is in final position F.G. occurs with -noo but not with -no, so that it would be possible to describe its incidence as correlated with the shape of the P.E. in these cases.

7.17. In group B tenses, minimal complexes of which have F.G., S-P-B complexes (i.e. where the T.S. is in final position) also have F.G., e.g.

10a	'odon-no-suud-a'	he was hiding
9b	'odon-no-suud-ii'	he was in hiding

So also do S-B-P complexes in which the P.E. has the shape -noo

(with long vowel), e.g.

9b 'odon-suud-i-noo' he was in hiding

But where the P.E. in S-B-P complexes has the shape -no (with short vowel, cf. §5.19) there appears¹ to be no F.G., e.g.

10a 'odon-suud-a-no^h he was hiding

10b 'odon-saal-oo-no^h he was passing by

That is to say, where the T.S. is in final position, the incidence of F.G. is the same as in minimal complexes; but where the P.E. is in final position, the incidence of F.G. must^{apparently} be described in terms of the shape of the P.E., F.G. occurring with the long-vowelled alternant -noo but not with the short-vowelled alternant -no.

7.18. Since this statement is also applicable to the S-B-P complexes in tenses of groups A and E (cf. § 7.16), it is convenient to differentiate in all tenses between S-B-P complexes and complexes having other arrangements. Thus the position in simple preterite complexes of all relevant tenses may be generalised by saying that where T.S. or S.E. is in final position, the incidence of F.G. is the same as in minimal complexes; but where P.E. is in final position, it is^{apparently} necessary in some tenses and convenient in others to describe the incidence of F.G. in terms of the shape of the P.E..

Conclusion

7.19. It may be said, then, that in minimal complexes the incidence of F.G. is correlated with differences of tense, F.G. being an integral feature of minimal complexes in tenses of groups B-E but

1. My material relating to this point is scanty and not conclusive.

not in group A tenses. But in enlarged complexes the incidence of F.G. is correlated primarily with the arrangement of the elements. It is correlated with differences of tense only where the complex-final element is a T.S. or S.E., i.e. one of the basic elements of minimal complexes. Where on the other hand the complex-final element is the P.E. or an O.E. - i.e. one of the supplementary elements occurring only in enlarged complexes - the incidence of F.G. is correlated with features of the element, viz. the category and pattern of O.E. and the shape of the P.E. as follows : F.G. occurs with

- (1) O.E.'s of category A, and the pattern 3 form of 2 sing. O.E., -maa, but not pattern 1 or 2 O.E.'s of categories B or C;
- (2) the long-vowelled P.E. alternant -noo, but not the short-vowelled alternant -no.

Thus in enlarged complexes the presence or absence of F.G. is directly a feature of tense only with certain arrangements of the elements; with other arrangements the presence or absence of F.G. is a feature of tense only indirectly, in so far as differences in the shape of the P.E. and of the 2 sing. O.E. are features of tense.

(b) The Intonation Pattern

7.20. The actual intonation pattern of any complex depends on the overall intonation pattern of the sentence in which it occurs - different patterns being associated with different kinds of sentence - and to some extent on the place the complex occupies in the sentence. But for the present purpose it is sufficient to study what may be regarded as the basic intonation pattern, that is, the intonation pattern of the complex as it occurs in a non-interrogative sentence in which there is not exclusive emphasis on some other part of the sentence; for these are the circumstances in which there is maximum differentiation.

7.21. The general outline of the basic intonation pattern of all verbal complexes may be represented thus :-

(-) (-) ⁻ (⁻ - -)

It may be described as consisting of a gradual descent from an intonation peak, the peak being usually but not always preceded by one or more syllables at a lower level; the number of steps in the descent will vary according to the length of the complex.

7.22. Such is the general outline for all complexes in all tenses, but the intonation peak does not always fall on the same syllable, and it is in this way that the basic intonation pattern of one tense or type of complex may differ from that of another.

Most Tenses

7.23. In minimal complexes of the great majority of tenses the intonation peak (the position of which is indicated by the superscript

symbol ') coincides with the first vowel¹ of the radical, whatever the position it occupies in the complex, e.g.

1a	'o-sʰuud-ii	he hid
	'o-yejjit-ii	he forgot
1b	'o-sʰuud-ake	he hid himself
1c	'o-sʰuud-aama	he was hidden
10a	'emo-wall-a	he was helping
14b	shuud-ii-mi	I hid myself
15b	shuud-otoo-mi	I will hide myself

It is clear from the above examples that as the arrangement of the elements varies in different tenses; the intonation peak coincides sometimes with the second vowel of the complex as a whole, sometimes with the third, and sometimes with the first; but in each case it falls on the first vowel of the radical. The same is true of enlarged complexes, e.g.

1b	'o-yaaf-ake-mo	he forgave him
	'o-yaaf-ake-no	he had forgiven
	'o-yaaf-ake-no-mo	he had forgiven him
10a	'emo-wall-a-mo	he was helping him
15b	njaaf-oto-noo-mi	I was about to forgive
	njaaf-oto-no-moo-mi	I was about to forgive him
	njaaf-oto-no-daa-mo	you were about to forgive him

Such is the basic intonation pattern of all complexes in all tenses of groups C, D, and E, and also of tenses numbered 1-5 in group A; but in the remaining tenses different patterns are found.

Group B

7.24. In all complexes, both minimal and enlarged, of group B tenses, the intonation peak coincides with the second vowel of the

1. It is more accurate to describe the position of the intonation peak in terms of vowels rather than syllables; for where the first consonant of the radical is a voiced continuant, it is often heard on an upward glide, so that the peak coincides with the vowel rather than the syllable as a whole.

S.E., which is disyllabic in these tenses, e.g.

10a	mid ¹ on-wall-a	I am helping
	mid ¹ on-wall-a-mo	I am helping him
	mid ¹ on-no-wall-a	I was helping
	mid ¹ on-no-wall-a-mo	I was helping him
9b	mid ¹ on-jog-ii	I have hold of him
	mid ¹ on-jog-ii-mo	I have hold of him
	mid ¹ on-jog-i-maa	I have hold of you
	mid ¹ on-no-jog-ii-mo	I had hold of him

Thus while the general outline of the basic intonation pattern is the same as in tenses 1a, 1b etc., and the peak coincides with the second vowel of the whole complex, as in many group A tenses, it never coincides with any vowel of the radical.

Tenses numbered 6-8

7.25. The position of the intonation peak in minimal and enlarged complexes of tenses numbered 6-8 is shown in the following examples:

6a	mi-wall- ¹ aayi	I did not help
	mi-wall- ¹ aayi-mo	" " " " him
	mi-wall- ¹ aayi-no	" had not helped
	mi-wall- ¹ aayi-no-mo	" " " " him
	and so also	
6b	mi-yaaf- ¹ aaki(-mo)	I did not forgive(him)
	mi-yaaf- ¹ aaki-no (-mo)	I had not forgiven him
6c	mi-suud- ¹ aaka(-mo)	I was not hidden (from him)
	mi-suud- ¹ aaka-no(-mo)	I had not been hidden (from him)
7b	mi-yaaf- ¹ ataako	I shall not forgive
	mi-yaaf- ¹ ataako-mo	" " " " him
	mi-yaaf- ¹ ataako-no	" was not going to forgive
	mi-yaaf- ¹ ataako-no-mo	" " " " " " him
	also with a Type II radical	
	mi-'oppin- ¹ taako(-no)	I won't (was not going to) squat
	and with a Type III radical	
	dum-wad-(a) ¹ taako(-no)	It won't be (was not going to be) possible

and so also		
7c	mi-suud-ataake(-mo)	I shall not be hidden(from him)
	mi-suud-ataake-no(-mo)	I was not going to be hidden (from him)
7a	mi-wall-ataa	I won't help
	mi-wall-ataa-mo	" " " him
	mi-wall-ataa-no(-mo)	I wasn't going to help (him)
	mi-maßbit-ataa	I won't open
	but with a Type II radical	
	mi-'anndin-taa	I shan't inform
	mi-'anndin-taa-mo	I " " him
	mi-'anndin-taa-no(-mo)	I wasn't going to inform(him)
	and with a Type III radical	
	mi-nan-taa	or mi-nan-ataa I shan't hear,
	mi-nan-taa-mo	mi-nan-ataa-mo etc.
	mi-nan-taa-no(-mo)	mi-nan-ataa-no(-mo)
8a	mi-'annd-aa	I don't know
	mi-'annd-aa-mo	I don't know him
	mi-'annd-aa-no(-mo)	I didn't know (him)
	and with a disyllabic radical	
	mi-semmbid-aa	I am not strong
	mi-semmbid-aa-no	I was not strong

7.26. It is possible to describe the basic intonation patterns of these tenses in a variety of ways, but the following is the most satisfactory. In tenses 6a-c and 7b-c the intonation peak coincides with the long vowel of the T.S., -aayi, -aaki, -ataako etc. in both minimal and enlarged complexes. In tenses 7a and 8a, on the other hand, the intonation peak coincides with the long vowel of the T.S. -[a]taa, -aa in enlarged complexes only, but not in minimal complexes. In the latter it coincides variously with the first vowel of the T.S. (as in mi-wall-ataa, mi-maßbit-ataa, mi-nan-ataa), or the last or only vowel of the radical (as in mi-'anndin-taa, mi-semmbid-aa; mi-nan-taa, mi-sew-aa). But it is simplest to say that in minimal complexes of both these tenses, whatever the radical, the intonation peak coincides with the penultimate vowel of the base.

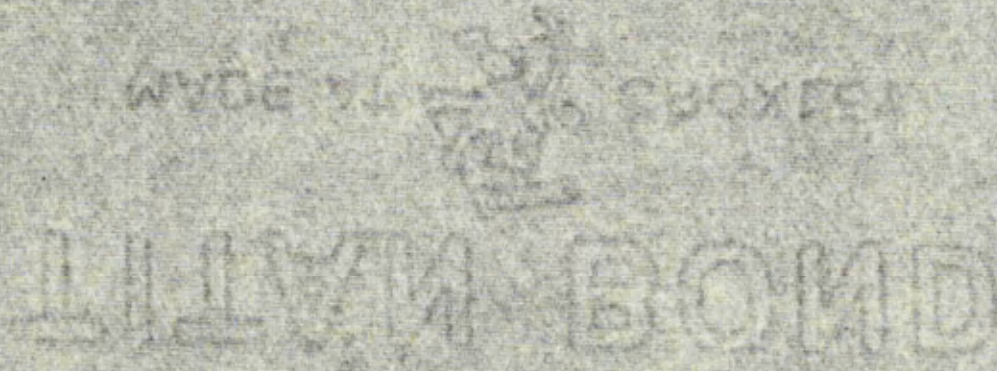
7.27. Now the intonation peak also coincides with the penultimate vowel of the base in minimal complexes of tenses 6a-c and 7b-c, so that the basic intonation pattern of minimal complexes of all seven of these tenses could be described in identical terms. But this would necessitate a separate statement for enlarged complexes of all of them, and would obscure the fact, which is important from the point of view of the tense system, that for tenses 6a-c and 7b-c, like all other group A tenses and all tenses of groups B-E, the basic intonation patterns of both minimal and enlarged complexes can be described in identical terms, while for tenses 7a and 8a the basic intonation pattern of the two types of complex must be described in different terms. Accordingly it is better to differentiate between the intonation patterns of minimal complexes of the two sets of sentences, as suggested in the previous paragraph.

Summary

7.28. In brief, then, for minimal complexes, four different basic intonation patterns must be distinguished, occurring in the minimal complexes of (a) group B tenses, (b) tenses 6a-c and 7b-c, (c) tenses 7a and 8a, and (d) the remaining tenses of group A and all those of groups C-E; and for enlarged complexes, three different patterns must be distinguished, occurring in (a) group B tenses, (b) all tenses numbered 6-8, and (c) the remaining tenses of group A and all those of groups C-E. Finally the basic intonation pattern of enlarged complexes is identical with that of minimal complexes in all tenses except 7a and 8a, where it is the same as that of enlarged complexes of tense 6a-c and 7b-c.

Conclusion

7.29. Thus the basic intonation patterns of minimal and of enlarged complexes of any tense are integral features of the tense. The intonation pattern is essentially a feature of the complex as a whole, though the position of the intonation peak is, in nearly all cases, described by reference to one or other of the individual elements.



Chapter 8

Conclusions

(a) The relevance to the tense system of the features discussed in the preceding chapters.

8.1. Having examined the behaviour of the elements, the incidence of final glottality, and variations in the intonation pattern in all complexes of the various tenses, and established that in nearly all cases they are integral features of the tenses concerned, we now consider their exact relevance to the tense system. For this purpose it is useful to distinguish four categories of relevance :-

(1) An essential characteristic, which is a fixed feature of the tense paradigm of a given tense (but not of all tenses), or a fixed feature of every complex in the paradigm; an alternance may also be treated as an essential characteristic where each of the alternants is a fixed feature of one set of complexes and between them they cover the whole paradigm.

(2) A discriminatory feature, which is an essential characteristic found in one tense only, and therefore is in itself sufficient to differentiate that tense from all others..

And at the other extreme,

(3) A contingent characteristic, which applies to minimal or enlarged complexes in certain circumstances only.

(4) A subsidiary characteristic, which applies only to enlarged complexes, or only to enlarged complexes of certain types.

8.2. Each of the elements and other features will be considered in turn, and reference will be made to the relevant columns of Appendix M, where the features of the tenses established in previous chapters are tabulated.

The Tense Suffix
(columns 6-7 of Appendix M)

8.3. Of the various T.S.'s which have been established, a considerable number are unique, that is to say, each suffix occurs in one tense only. This applies not only to certain single suffixes and sets of variants and to one suffix cluster, but also to a number of the alternances which may be generalised as described in Chapter 6, viz.

Single suffixes:	1a	-ii	2c	-a	8a	-aa
	1b	-ake	3c	-ete		
	4b	-ooma	4c	-eema		
	6a	-aayi	6b	-aaki	6c	-aaka
Suffix cluster:	4a	-Uma				
Sets of variants:	7a	-[a]taa	7b	-[a]taako	7c	-[a]taake
Alternances:	1c	*-aama	3b	*-oto	5b	*-o
			15b	*-[o]too	15c	*-[e]tee

8.4. Each of the single suffixes mentioned occurs in all complexes of the tense in question, and these are the only tenses characterised by such single suffixes.¹ Similarly, in the case of the suffix cluster and the sets of variants, the appropriate variant

1. The single suffixes -ii, -a and -aa are treated as distinct from the alternances referred to as the generalised suffixes *-ii *-a and *-aa, cf. § 6.10

is found in every complex of the tense concerned, and in no other. Again, each alternance occurs, in one form or other according to the circumstances, in all complexes of the tense concerned, and the same alternance is not found in any other tense. Accordingly each of the above nineteen T.S.'s, whether single suffix, cluster, set of variants, or alternance, is not only an essential characteristic of the tense in question, but a discriminatory feature, being in itself sufficient criterion for differentiating the tense from every other tense.

8.5. In the case of tenses 14a and 15a, the alternances x-i/x-U and x-[a]ta/x-ai are unique as alternances, although three of the alternants (x-i , x-U and x-ai) are shared by at least one other tense (see § 8.6 below). Since none of the alternants occurs throughout the paradigm, they cannot be regarded individually as essential characteristics of the tense in question, nor - except in the case of x-[a]ta - do they by themselves differentiate individual complexes of the tense from the corresponding complexes of other tenses (e.g. 2b, 2a and 3a). Nevertheless, each pair of alternants, taken together, is not simply an essential characteristic of the tense, but being unique, is a discriminatory feature.

8.6. Other T.S.'s quotable as generalised suffixes, are shared by a number of tenses, and occur (in one or other of their forms)

in all complexes of each of these tenses, viz.

x _{-ii}	occurs in tenses			9b, 11b and 14b
x _{-aa}	"	"	"	9c, 11c " 14c
x _{-oo}	"	"	"	10b, 12b " 13b
x _{-ee}	"	"	"	10c, 12c " 13c
x _{-i}	"	"	"	2b, 9a, 11a
x _{-a}	"	"	"	10a, 12a " 13a
x _{-U}	"	"	"	2a and 5a

In all these cases the T.S. is not a discriminatory feature, since it is shared by a number of tenses; but since it occurs, in one of its forms, in all complexes of each of the tenses, it must be regarded as an essential characteristic of the tense. Similarly x_{-ai}, which occurs in all complexes of tense 3a, and also in B-S complexes of tense 15a, is not a discriminatory feature, since it is not unique, but it is an essential characteristic of tense 3a.

8.7. In short, there are a number of tenses where the T.S., being unique, is a discriminatory feature distinguishing the tense in question from all other tenses. This is however true of only half of the 42 tenses, and in the remainder the T.S., although an essential feature of the tense in question, is shared by at least one other tense. Consequently the T.S. by itself is not an adequate criterion for differentiating all 42 tenses.

The Subject Element
(column 3 of Appendix M)

8.8. The S.E.'s found in minimal complexes of any tense constitute a series which is fixed for that tense but there is variation

from tense to tense; the S.E. series is therefore an essential characteristic of any tense. But series 4a and 4b, which characterise tenses 13a and 15a respectively, are the only series which are confined to a single tense; every other series, as is clear from the third column of Appendix M, is shared by at least two tenses. Consequently the S.E. series is not a discriminatory feature, except in the case of these two series.

8.9. But it is important to note that the grouping of tenses on the basis of S.E. series cuts across the grouping based on T.S.'s. Thus the tenses, mentioned in § 8.6 above, which share a common T.S. are distinguished by their S.E. series. For instance, while the T.S. \times -ii is common to tenses 9b, 11b and 14b, the three tenses are distinguished by having S.E. series 2, 3 and 5b respectively; and the tenses sharing the T.S.'s \times -aa, \times -oo, \times -ee, \times -a, \times -i, and \times -U are similarly distinguished by their S.E. series, as is clear from the following table :-

<u>T.S.</u>	<u>S. E. Series</u>							
	1	1x	2	3	4a	4b	5a	5b
\times -ii	Tense		9b	11b				14b
\times -aa			9c	11c				14c
\times -oo			10b	12b			13b	
\times -ee			10c	12c			13c	
\times -a			10a	12a	13a			
\times -i	2b		9a	11a)
\times -U	2a	5a) 14a
\times -ai	3a)
							(15a)	

It follows that although neither T.S. nor S.E. series is in itself an adequate criterion for the formal differentiation of all tenses, the two taken together do serve to differentiate all 42 tenses from each other.

8.10. The S.E. series which is characteristic of each tense is also found in the corresponding enlarged complexes of all types, with the single exception of tense 15a. Preterite complexes of this tense, as stated in § 5.26, are characterised by S.E. series 5b, in contrast with the series 4b of minimal and 1-object complexes. This exceptional behaviour in tense 15a means that the S.E. series occurring in preterite complexes must be regarded as a significant feature of any tense; but since it applies only to certain types of enlarged complex, it is to be classed as a subsidiary and not an essential characteristic.

The Arrangement of the Elements
(Column 2 of Appendix M)

8.11. It is clear from Chapter 3 that in any tense the arrangement of the elements in minimal complexes (and of the same elements in enlarged complexes) is either constant throughout the paradigm, or else an alternance of two different arrangements in complementary distribution. The pattern of arrangement, including the distribution of the two arrangements, is therefore to be regarded as an essential characteristic of the tense. In no case, however, is the pattern of arrangement confined to a single tense, since each of the three patterns is

common to at least three tenses, as follows :-

Groups A-C	S-B in all complexes
Group D	S-B in 1st and 3rd person complexes B-S in 2nd person complexes
Group E	S-B in 1 pl. and all 3rd person complexes B-S in 1 sing. " " 2nd " "

The pattern of arrangement in minimal complexes, therefore, though an essential characteristic, cannot be regarded as a discriminatory feature.

8.12. As regards P.E. and O.E.'s in enlarged complexes, it might be argued that since these elements occur only in enlarged complexes, the possibility of occurrence of a P.E. in complexes of a given tense and the position occupied by P.E. and O.E.'s in enlarged complexes is at most a contingent characteristic of the tense. Against this it must be stressed that there is a formal difference (which may be called a difference in the potentiality of enlargement) between minimal complexes (such as those of tense 1a) for which there are corresponding enlarged complexes containing a P.E., and others (such as those of tense 4a) for which there are none. Similarly, there is a formal difference between

(a) minimal complexes - such as those of tense 1a - which can be enlarged by the occurrence of a P.E. only after the base (arrangement S-B-(P));

(b) minimal complexes - such as those of tense 9a - which can be enlarged by the occurrence of a P.E. either before or after the base (arrangement S-(P)-B or S-B-(P)); and

(c) minimal complexes - those of tense 1c - which can be enlarged

by the occurrence of a P.E. either between the moieties of the T.S. or after the base (arrangement S-R-t₁-(P)-t₂ or S-B-(P)). Similar statements could also be made about the position of the O.E.. The possibility of enlargement of minimal complexes, and the arrangement of the elements in enlarged complexes of any tense are therefore significant features of it.

8.13. Moreover, even though in some tenses there is free variation in the arrangement, the range of variation is restricted (e.g. in group B tenses S-B-(P)-(O) and S-(P)-B-(O) are possible variants, but B-(P)-(O)-(S) and S-R-t₁-(P)-t₂-(O) are not; and in tense 1c the first and the last of these arrangements are possible, but the others are not). The pattern of arrangement of the elements even in enlarged complexes of any tense - including free variation in certain cases - is therefore a fixed feature of the tense, and as such must be regarded as an essential characteristic, no less than the arrangement of the basic elements in minimal complexes.

The Radical
(columns 4-5 of Appendix M)

8.14. Differences in the shape of a variform radical, consisting of a systematic alternation in the initial consonant, are a feature of the radical itself. But the distribution of the two shapes within the tense paradigm of any tense (shared by some other tenses but contrasting with the distribution in other tenses) is a fixed feature of the tense - even though it may for convenience be described in terms partly of the category of S.E. and partly of the arrangement of the elements. It is therefore to be regarded as an essential characteristic of the tense.

8.15. This classification is not affected by the fact that some radicals, viz. uniform radicals, do not have alternants. Their behaviour is not an exception to the distribution pattern, for the question of alternance simply does not arise in their case; in the case of variform radicals on the other hand, the distribution of alternants is quite regular and applies to all complexes in all circumstances.¹

8.16. The pattern of distribution of the alternant shapes of variform radicals is thus an essential characteristic of the tense; but since each pattern is shared by at least three tenses (in the same way as patterns of arrangement), it is in no case a discriminatory feature.

8.17. The pattern of distribution in enlarged complexes is the same as in the corresponding minimal complexes, and no separate statement is required.

8.18. The possibility of variation in the final vowel of certain types of composite radical (e.g. lootir-/lootor-, §§ 4.20-21) is a feature of the radical itself; but the actual shape of radical found in a given tense, being common to all complexes but contrasting with the shape found in some other tenses, and not being correlated with phonological features, is an essential characteristic of the tense - though here again there are many radicals to which the characteristic is irrelevant. But since each shape is common either to

1. This is in contrast with the incidence of F.G. considered in §§ 8.20-21 below, which applies to a given complex in some circumstances but not to the same complex in other circumstances.

all tenses of the Middle Voice or to all tenses of the Active and Passive Voices, it cannot be regarded as a discriminatory feature.

8.19. In contrast with the foregoing, the second kind of variation in the final vowel of composite radicals (e.g. maṣṣit-/maṣṣut-, § 4.22), is basically a phonological feature of this type of radical only incidentally associated with the tense system.

Final Glottality
(column 10 of Appendix M)

8.20. The incidence of F.G. in minimal complexes has been shown to be correlated with differences of tense, F.G. being a fixed and integral feature of all minimal complexes of certain tenses, and absence of F.G. a fixed feature of all minimal complexes of other tenses. But F.G. is by definition a conditional feature, referring not to the regular occurrence of glottal closure in all circumstances, but to the possibility of glottal closure in certain circumstances only, viz. in pause but not in medial position. It must therefore be regarded as a contingent rather than an essential characteristic, even of minimal complexes.

8.21. As regards enlarged complexes, it will be recalled that the incidence of F.G. is correlated primarily with the arrangement of the elements; where one of the basic elements of minimal complexes (T.S. or S.E.) is in complex-final position, the incidence of F.G. is the same as in minimal complexes; but where one of the supplementary elements P.E. or an O.E. is in complex-final position, the incidence of F.G. is correlated with features of that element, and is only a feature of tense in so far as differences in the shape of the element

are a feature of tense. F.G. or absence of F.G. in enlarged complexes is therefore also a contingent characteristic of tense; but here the incidence of F.G. is further governed by three sets of conditions applying to the individual complex, in addition to the condition governing the actual occurrence of glottal closure.

The Intonation Pattern
(Column 11 of Appendix M)

8.22. The basic intonation pattern of minimal complexes varies as between one tense and another, but is fixed for any one tense, and applies to all complexes in the paradigm. It is therefore an essential characteristic of the tense; but it is not a discriminatory feature, since each pattern is shared by a number of tenses.

8.23. The basic intonation pattern of enlarged complexes of any tense is also fixed, and applies to all enlarged complexes of the tense. Moreover, since in two tenses, and two only, (7a and 8a) the position of the intonation peak in enlarged complexes is different from that in minimal complexes, the basic intonation pattern cannot be stated in general terms covering all enlarged complexes, but must be stated in terms of tense. The basic intonation pattern of enlarged complexes of any tense is therefore a significant feature of the tense; but since it is a feature confined to enlarged complexes, it cannot be classed as an essential characteristic of the tense, but only as a subsidiary characteristic.

The Preterite Element
(Column 9 in Appendix M)

8.24. Since the P.E. does not occur in minimal complexes, its behaviour cannot be said to be an essential characteristic of any

tense; and some of the differences of shape have been shown to be alternants correlated with the phonology of the next element, and therefore independent of tense. But the difference between the range and distribution of P.E. shapes found (a) in tense 1c (-no or -noo), (b) in the other relevant group A tenses (-no), (c) in group E tenses (-noo/-no) and (d) in group B tenses (-no or -noo/-no) is not correlated with any feature other than the difference of tense. The range of P.E. shapes found in any tense, and the nature of the alternance (if any) are in fact a fixed feature of that tense. But since the P.E. is confined to preterite complexes, they can only be classed as subsidiary characteristics.

The Object Elements
(Column 8 in Appendix M).

8.25. In the case of O.E.'s, different tenses are characterised by different O.E. series or sets of series. The majority of tenses are each characterised by a single series, which is a fixed feature of the tense in question. Other tenses (14a-b, 15b) are each characterised by two different series in complementary distribution, and here the alternance is a fixed feature of the tense in question. In the remaining tenses, in which a free variation constitutes one member of an alternance (14c, 15a, 15c), or characterises the whole tense (9c-13c), the range of variation is restricted to two out of the five possible series; so that even these tenses are covered by the generalisation that the range of O.E. series associated with any tense is a fixed feature of that tense. But since O.E.'s occur only in 1-object and preterite 1-object complexes, and not in minimal complexes, the range

of O.E. series cannot be classed as an essential characteristic, but only as a subsidiary characteristic of the tense.

Summary

8.26. We conclude that the essential characteristics of any tense include not only (a) the T.S. or range of T.S.'s, but also (b) the arrangement of the elements in enlarged as well as in minimal complexes, (c) the S.E. series found in minimal complexes, (d) the distribution of the two shapes of variform radicals, and some (but not all) other variations in the shape of composite radicals, and (e) the intonation pattern of minimal complexes. Only in a limited number of cases is the T.S. a discriminatory feature, but the T.S. and S.E. series taken together serve to differentiate all 42 tenses from each other. Whether or not a tense is characterised by F.G. is also a significant feature of the tense, but since it does not apply in all circumstances, it must be regarded as a contingent and not an essential characteristic. Finally, the range and distribution of P.E. shapes and of O.E. series, and the S.E. series and intonation pattern of enlarged complexes of a given tense, though significant features of the tense, must be classed as a subsidiary rather than essential characteristics. Nevertheless, in view of the close relationship between minimal and enlarged complexes of any tense, a full account of the tense system must include an account of the contingent and subsidiary characteristics as well as of the essential characteristics.

(b) The interdependence of the features
of the complex

8.27. If one prominent aspect of the tense system is the extent to which all features of the complex must be regarded as characteristics of tense of varying degrees of relevance, the other outstanding aspect is the interdependence of the various features of both minimal and enlarged complexes. These have been described in detail in the preceding chapters. Here the conclusions of those chapters are drawn together; and, since the very complexity of the interdependent patterns creates problems of description, an attempt is made to establish an order of priority for descriptive purposes, indicating which features are to be described largely in terms of other features and which function largely as 'referends', i.e. as the basis of description of other features.

The Arrangement of the Elements

8.28. The arrangement of the elements both in minimal and in enlarged complexes of any tense has been shown to be an essential characteristic of the tense. But where a single tense is characterised by two different arrangements in complementary distribution their distribution must be described by reference to the category of S.E., and, in enlarged complexes of some tenses, (group E), by reference also to the category of O.E.

8.29. The arrangement of the elements is in its turn a convenient basis for the description of many other features, viz. not only the distribution of radical alternants and T.S. alternants in some tenses (tenses 14a and 15a), but also (in enlarged complexes only) the shape of the 3 sing. O.E. of Class 1 (group E), the shape of the P.E.

(tense 1c and groups B and E), and the incidence of F.G. (groups B, D and E). It is also a relevant factor in the description of the T.S. in enlarged complexes of tense 1c and tenses of groups B-E, in so far as there is correlation between the T.S. and the phonological structure of subsequent elements.

8.30. The arrangement of the elements is thus closely bound up with various other features, both of minimal and of enlarged complexes, and in particular forms a useful basis for the description of other features in various circumstances.

The Subject Element

8.31. The S.E. series occurring in a given tense is an essential characteristic of the tense, and is not correlated with any other feature, except in tense 15a, where it is correlated with the presence or absence of the P.E., i.e. with the type of complex. On the other hand, the category of S.E. is the basis of description of differences of arrangement, and therefore indirectly of the many other features mentioned in § 8.29 above. And the phonological structure or actual shape of the S.E. is one of the referends for describing the T.S. in minimal and enlarged complexes of certain tenses (group D) and the T.S. and shape of P.E. in others (group E). Thus the S.E. is also closely bound up with various other features of minimal and enlarged complexes, many of which are to be described ultimately in terms of the category or shape of the S.E..

The Radical

8.32. The pattern of distribution of the alternant shapes of variform radicals in any tense has been shown to be an essential characteristic of the tense; but the incidence is ultimately correlated with the category of S.E., though in each case it is possible to make a generalisation in terms of the category of number and the arrangement of the elements. Again, while some variations in the shape of certain types of extended radicals - consisting of a variation in the final vowel - are correlated with difference of tense, others are correlated with difference of T.S. On the other hand, the phonological category of the radical, and sometimes the individual radical is the referend in describing the T.S. of certain tenses, particularly in the case of the suffix-cluster -U. The shape of the radical is thus closely related in many instances to the other basic elements, S.E. and T.S. (though not to other features of the complex), being described in terms of them as well as functioning as referend in some circumstances.

The Tense Suffix

8.33. The T.S. of each tense - whether it is a single suffix, a suffix cluster, or an alternance - is an essential characteristic of the tense itself. But the actual distribution of the variants and alternants, is correlated variously with the arrangement of the elements, and with aspects of the radical S.E., O.E., and P.E., as indicated in column 7 of Appendix M. The T.S. is in its turn the referend for describing the shape of the radical in certain circumstances. Thus

Thus the T.S. is closely bound up with other features not only of minimal but also of enlarged complexes; and it is much more often to be described in terms of other features than vice versa.

The Object Element

8.34. We have seen that the range of O.E. series found in any tense is a subsidiary characteristic of the tense itself. But where two different series occur in a single tense, they are occasionally in free variation, but more often form an alternance correlated either with the presence or absence of the P.E. - i.e. the type of complex - (tenses 2a-b, 3a-b) or with the arrangement of the elements, i.e. ultimately with the category of S.E. (in the case of the 3 sing. O.E. of Class 1 in group E tenses). The category of O.E. is in turn one of the referends for describing the arrangement of elements in 1-object complexes of some tenses (group E); and the phonological pattern of the O.E. is a referend for describing the T.S. in certain tenses (2a-b, 3a-b, 5a-b) and the T.S. and shape of P.E. in other tenses (most tenses of groups B-E). Moreover both the category of O.E. and the shape of certain O.E.'s is one of the referends for describing the incidence of F.G.. The O.E. is thus closely related to other features of enlarged complexes in a number of respects, more elements being described in terms of aspects of O.E.'s than vice versa.

The Preterite Element

8.35. The range of P.E. shapes found in any tense has been shown to be a subsidiary characteristic of the tense itself. But where there is an alternance, the distribution of the alternants is

correlated variously with the arrangement of the elements (tense 1c), or with the phonological category of S.E. and/or O.E. (group E), or with both these factors (group B). The shape of the P.E. is in turn one of the referends for describing the T.S. in certain tenses (groups B and E), and the incidence of F.G. in certain tenses of group B. Thus the shape of the P.E. also is closely bound up with other features of preterite complexes, the P.E. being on the whole more often described in terms of other features than vice versa.

Final Glottality

8.36. In minimal complexes F.G. or absence of F.G., is a contingent characteristic of the tense; but in enlarged complexes it is correlated variously with the arrangement of the elements, the shape of the P.E., and the category and sometimes the shape of O.E.'s. On the other hand, it is not itself a referend for describing any other feature.

Intonation Pattern.

8.37. The basic intonation patterns of minimal and of enlarged complexes of a given tense are respectively essential and subsidiary characteristics of the tense; and the intonation pattern is in fact the only feature of a complex which is not closely bound up with other features, except in so far as the difference between the intonation patterns of minimal and enlarged complexes of tenses 7a and 8a is correlated with the absence or presence of the P.E. and/or an O.E..

Summary of Section (b)

8.38. It is clear from the foregoing that although in a number of tenses many of the features are constant throughout the paradigm, in many other cases one or more of the features has to be described by reference to one or more of the others. But since some features function more often as a referend than others, it is possible to arrange them in an order of priority representing the most convenient order for descriptive purposes, as follows :-

A. For minimal complexes:

- (i) Category of subject element.
- (ii) Arrangement of elements.
- (iii) Shape of subject element.
- (iv) Type of radical.
- (v) Tense suffix.
- (vi) Final glottality.
- (vii) Intonation pattern.

B. For enlarged complexes:

An order comparable with that for minimal complexes, but with the addition of object element and preterite element, which occur in enlarged complexes but not in minimal complexes. Since the tense suffix in enlarged complexes is in many cases correlated with the shape of object element or preterite element, these two elements occupy a place immediately after the radical and before the tense suffix, as follows:

- (i) Category of subject element.
- (ii) Arrangement of elements.
- (iii) Shape of subject element.
- (iv) Type of radical.
- (v) Category and shape of object element.
- (vi) Shape of preterite element.
- (vii) Tense suffix.
- (viii) Final glottality.
- (ix) Intonation pattern.

(c) General Conclusion

8.39. The foregoing chapters have shown that there are close links, both grammatical and phonological, between the various elements considered, which justify their treatment as interrelated components of a complex. Various aspects of the behaviour of these elements, the incidence of final glottality, and the intonation pattern of the complex are all integral features of the tense system, of varying degrees of relevance, as shown in the first section of this chapter. But a full description of the tense system - which is simplified by use of the generalisations in Chapter 6 - must include an account not only of the features which have been shown to be discriminatory features and essential characteristics, but also of those which rank merely as contingent or subsidiary characteristics. Moreover, the relationships between the various features, described in detail in the foregoing chapters and summarised in the preceding section of this chapter, make it necessary in many cases to describe one feature of the complex by reference to another. But there is an optimum order of treatment, arising from the nature of the relationships, which makes it possible to describe in a reasonably coherent and economical manner the complicated web of patterns which constitutes the Fula tense system.

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Explanation of Certain Terms1. Verbal Complex

Two types of verbal complex need to be distinguished :-

- (1) Minimal complexes, each consisting of a base together with one of a series of subject elements (cf. Appendix E), the base consisting of a radical plus one of a series of tense suffixes (cf. Appendices H and K).
- (2) Enlarged complexes each consisting of the same elements as in minimal complexes, together with one (sometimes two) of a series of object elements (cf. Appendix F) or a preterite element (-no or -noo), or both object element(s) and preterite element.

The unity of such verbal complexes is shown by a variety of facts :-

- (a) the grammatical and phonological links between the elements, discussed in this thesis, - links which do not exist between parts of the complex and other parts of the sentence. These links include
- (b) the possibility of a number of different arrangements of the ^{each one of them} elements occurring between the remaining elements in certain circumstances;
- (c) the possibility of 'interpolation', - the fact that
 - (i) nothing except another element can intervene between the base and any subsequent element, ^{or between any two subsequent elements} whereas there is consider-

ably greater possibility of intervention between the complex and object nominals;

(ii) it is extremely rare for anything other than the preterite element to occur between the base and a preceding subject element, the possibilities being limited to one or two particles, whereas there is an extremely wide range of types of words and groups of words which frequently intervene between a subject nominal and the verbal complex.

Appendix 2

2. Intonation Pattern
(cf. Chapter 7, section (b))

The actual intonation pattern of any complex depends on the overall intonation pattern of the sentence and the complex's place in the sentence; but the Basic Intonation Pattern considered in this thesis is that of the complex as it occurs in a non-interrogative sentence in which there is not exclusive emphasis on some other part of the sentence. The general outline may be represented thus:

(-) (-) [•] (- - -)

It consists of a gradual descent from an intonation peak, the peak being usually, but not always preceded by one or more syllables at a lower level. The general outline is the same throughout all tenses, but the intonation peak falls on different syllables in different types of complex. The position of this intonation peak will be represented by the symbol ' placed above the vowel coinciding with the peak, thus:

mi-suud-ake (- ['] - -)

3. Final Glottality
 [see Chapter 7, section (a)]

Apart from the implosive consonants ɓ, ɗ, and 'y (in which glottal closure is combined with oral closure), two different types of glottal closure occur in Fula, both of which are here represented by an apostrophe, '. One, noted by most grammarians, is the consonant-unit (occurring either at the beginning of or within a word or complex), which is usually a glottal plosive (closure and immediate release), but may be realized simply as 'glottal creak'; e.g. 'uga "throw!", mi-'ug-ake "I threw". The other is the glottal closure (with eventual, but not immediate release) which occurs with most speakers at the end of a word or complex of certain types whenever it is in pause, but not in medial position in certain types of sentence¹ e.g. mi-suud-ii-mo' "I hid him" mi-suud-ii-dum' 'I hid it', shuud-ii-mi' 'I hid myself'. This possibility of glottal closure is here termed Final Glottality, and will be indicated by an apostrophe at the end of every complex to which it is applicable, even though the actual occurrence of the glottal closure is conditional on the complex being in pause.

The existence of this feature was pointed out to me in the Adamawa dialect by my colleague Mr. J. Carnochan. Nothing has however so far been published on it, apart from a footnote in my article in BSOAS, 1956 xviii/1.

1. viz. in all sentences marked by final cadence. This includes

- (a) all non-interrogative sentences, e.g.
 mi-heɓ-ii sheede "I've got the money"
 hokk-am'sheede "give me some/the money"
- (b) interrogative sentences in which interrogation is marked by the particle na, e.g.
 'a-heɓ-ii na sheede ? "did you get the money?"

Glottal closure does not occur, even with words treated as having 'final glottality', in sentences marked by a final rising intonation, viz.

- (i) interrogative sentences introduced by interrogative nominal and adverbial forms such as mo, moye "who?", ko, dume "what?", to "where?", no "how?" etc., e.g.
to 'o-heβ-i sheede ? "where did he get the money"
- (ii) interrogative sentences where the intonation pattern is the only mark of interrogation, e.g.
'a-heβ-ii sheede? "did you get the money?"
- (iii) requests containing the particle ne, e.g.
hokk-am ne sheede "please give me some money" (perhaps "won't you give me some money?").

sheede 'money' is treated as having final glottality; but actual glottal closure will occur only in the examples quoted under (a) and (b), not in those quoted under (i), (ii) and (iii).

4. The Preterite Element

The preterite element (P.E.), has two shapes -no and -noo, the distribution of which is discussed in section (b) of Chapter 5. It is associated with a particular aspect of meaning, referring to time past, and implying that the situation has since changed; cf. the following representative pairs of complexes :

Tense

- | | | |
|-----|------------------|---|
| 1a | 'o-war-ii | he has come, he came. |
| | 'o-war-ii-no | he had come, he came (but has gone/went away again). |
| 3a | 'o-war-ai | he will come, he is about to come; he comes. |
| | 'o-war-ai-no | he was about to come (but did not); or he used to come (but no longer comes). |
| 14b | 'o-jood-ii | he sat down |
| | 'o-jood-i-noo | he had sat down, (but has now got up again). |
| 10a | 'odon-war-a | he is coming, he is on his way. |
| | 'odon-no-war-a | he was coming, was on his way (but turned back). |
| | etc. | |
| 9b | 'odon-jood-ii | he is seated. |
| | 'odon-no-jood-ii | he was seated (but is no longer). |
| | etc. | |

It would be possible to treat all of these as separate tenses, as some writers do; -ii and -iino, -ai and -aino etc. would then be distinctive tense suffixes of different tenses, and -no...-a, -no...-ii would be linked tense elements. But in view of the regularity of occurrence of such pairs of comparable paradigms, one with and one without a -no or -noo element, and the possibility of associating a particular aspect of meaning with the presence of this element, it seems preferable to treat -no / -noo as a distinct element. This treatment avoids the proliferation of tenses which would otherwise be necessary.

Consonant Alternance

The full range of alternances is as follows :-

f	alternates with	p	
s	" "	sh	
h	" "	k	
r	" "	nd	
w	sometimes "	mb	(examples occur with each of the 5 vowels as the first vowel of the radical)
W	" "	ng	when the ensuing vowel is <u>a</u> , <u>o</u> or <u>u</u>
y	alternates "	ng	" " " " " <u>e</u> or <u>i</u>
y	" "	nj	" " " " " <u>a</u> , <u>o</u> or <u>u</u>
d	" "	nd	
b	" "	mb	
g	" "	ng	
j	" "	nj	

e.g. fot-/pot- be equal, adequate
suud-/shuud- hide
haß-/kaß- fight
rem-/ndem- cultivate

war-/mbar- kill
wel-/mbel- be pleasant
winnd-/mbinnd- write
wood-/mbood- be blind ^{be good}
wum-/mbum-

war-/ngar- come
wood-/ngood- possess
wujj-/ngujj- steal

yett-/ngett- thank
yim-/ngim- sing

yar-/njar- drink
yob-/njob- pay
yuw-/njuw- stab

buut-/mbuut- become cheap
def-/ndef- cook

ga'y'y/nga'y'y-	crush
jal-/njal-	laugh

2. Note that where the shape of R^1 is known, the shape of R^2 can be predicted from the above table, except in the case of radicals whose R^1 begins with the pattern wa-, wo-, or wu-. In some of these w alternates with mb, in others with ng, and it is here necessary either to quote both R^1 and R^2 , or to indicate the alternance, e.g. war- (mb) "kill", war- (ng) "come".

3. Note also that while R^2 can, with the exceptions mentioned, be predicted from a given R^1 , the reverse is not true, for

mb in R^2	corresponds to both w and b in R^1
nd " "	" " " r " d " "
nj " "	" " " y " j " "
ng " "	" " w or y " g " "

Moreover nd, ng, p, sh and k also occur as the initial consonant of R^1 as well as of R^2 of uniform radicals, cf. § 4.11(a).

Two-object Complexes

The second object in all preterite and non-preterite 2-object complexes of all tenses comes at the end of the complex, and is always a pattern 1 form (cf. § 5.11).

The arrangement and behaviour of the other elements, and also the basic intonation pattern, are the same as in the corresponding 1-object complexes.

The incidence of F.G. is correlated with the category of O.E., as in the case of 1-object complexes of group A (where, as here, the final element is an O.E. of pattern 1).

These points are illustrated by the following sample 2-object complexes:

Tense

1a	'o-h ¹ oll-ii-ma-mo'	he showed him to you
	'o-h ¹ oll-ii-mo-yam ^h	he showed me to him
	'o-h ¹ oll-ii-mo-ma ^h	he showed you to him
10a	'o-d ¹ on-holla-mo-dum'	he is showing him it
	'o-d ¹ on-no-holla-mo-dum'	he was showing him it
14a	'o-h ¹ oll-i-mo-dum'	he showed him it
	'o-h ¹ oll-u-maa-dum'	he showed you it
	k ¹ oll-u-moo-mi-dum'	I showed him it
	k ¹ oll-u-maa-mi-dum'	I showed you it
	k ¹ oll-u-daa-mo-dum'	you showed him it
	k ¹ oll-u-no-daa-mo-dum'	you had shown him it
1a	'o-h ¹ okk-ii-mo-dum'	he gave him it
	'o-l ¹ ootir-ii-mo-dum'	he washed him with it
	'o-w ¹ addan-ii-mo-dum'	he brought it for him

The arrangement of the two objects in relation to each other is a feature of the radical, and therefore another example of the interdependence of the elements of the complex; but it is not dealt with in this thesis because with any one radical the arrangement is constant in all tenses.

Complete Tense 1a Paradigm of the Radical fot-

Subject Element Group	Category	Complex	
A (i)	3 sing	'o-fot-ii	he /she is adequate
		(or mo-fot-ii)	
		kal-fot-ii	it is adequate
		ngum-fot-ii	
		ngel-fot-ii	
		nga-fot-ii	
		nde-fot-ii	
		ndi-fot-ii	
		ndu-fot-ii	
		nga-fot-ii	
		nge-fot-ii	
		ngo-fot-ii	
		ngu-fot-ii	
		ngal-fot-ii	
		ngol-fot-ii	
		ka-fot-ii	
		ki-fot-ii	
ko-fot-ii			
kol-fot-ii			
dam-fot-ii			
dum-fot-ii			
A (ii)	3 pl.	ʒe-pot-ii	they are adequate
		kon-pot-ii	
		ko-pot-ii	
		de-pot-ii	
		di-pot-ii	
B (i)	1 sing.	mi-fot-ii	I am adequate
	2 sing	'a-fot-ii	you are adequate
	1 pl.	min-pot-ii	we " "
	2 " incl.	'en-pot-ii	you and I are adequate
	2 " excl.	'on-pot-ii	you are adequate
C (i) (ii)	Zero	(laamdo) fot-ii	the chief is adequate
		(laambe) pot-ii	the chiefs are adequate

Table of Subject Elements

Group	Nominal Class	Person	Subject Elements								Assign-able Meaning	
			Series		2	3	4		5			
			1	1x			4a	4b	5a	5b		
A(i)	1	3 sing.	'o- (or mo-)		'odon-	'emo-	'o- (or mo-)		'o- (or mo-)		"he/she"	
	3		kal-		kaldon-	'ekal-						
	4		ngum-									
	5		ngel-									
	7		nga-									
	9		nde-									
	10		ndi-									
	11		ndu-									
	12		nga-									
	13		nge-		the	'e +	as		as		"it"	
	14		ngo-		same	the	Series		Series		(in a very	
	15		ngu-		+	same	1		1		few cases	
	16		ngal-		-don-						"he" or	
	17		ngol-								"she")	
	18		ka-									
	19		ki-									
	20		ko-									
	21		kol-									
	22		dam-									
	23		dum-									
	(ii)	2	3 pl.	βe-		βedon-	'eβe-	βe-		βe-		"they"
		6		kon-		kondon-	'ekon-					
		8		ko-		kodon-	'eko-	as	as			"they"
24			de-		dedon-	'ede-	Series	Series			or "it"	
25			di-		didon-	'exi-	1	1				
B(i)	1 sing.	1	mi-		midon-	'emi-	mi-	mi-	mi-	mi-	"I"	
	2 sing.	2	'a-		'adon-	'e'a-	-aa	-aa	-daa	-daa	"thou"	
B(ii)	1 pl.	1	min-		mindon-	'emin-	min-	min-	min-	min-	"he/she/it/ they" & "I"	
	2 pl. incl.	2	'en-	'en-	'endon-	'e'en-	-en	-en	-den	-den	"thou/you & I/we"	
	2 pl. excl.	2	'on-		'ondon-	'e'on-	-on	-on	-don	-don	"you"	
C(i)	3 sing.	3	Zero	Zero	Z-don-	'e-Zero	Zero	Zero	Zero	Zero	-	
	(ii)	3 pl.	Zero		Z-don-	'e-Zero	Zero	Zero	Zero	Zero	-	

Column

1 2 3 4 5 6 7 8 9 10 11 12 13

INCL. = inclusive (including the speaker)
 excl. = exclusive (excluding the speaker)

For other notes, see next page.

Subject Elements

Columns 5 - 12 of the adjacent table give the shapes of the various series of S.E.'s discussed in section (a) of Chapter 5. The 32 categories of S.E.'s are arranged in three main groups, A, B and C, each subdivided into two sub-groups (i) and (ii). This grouping is based on grammatical distinction, though the traditional terms 1st, 2nd and 3rd person, singular and plural are used for convenience (3rd person including both the S.E.'s of group A and "Zero S.E." of group C).

Each element in group A is related to one of the nominal classes, and the S.E.'s are concord elements resembling or identical with concord elements in other members of the nominal class system. Elements of group B are not related to the nominal class system in the same way, but have specific shapes of their own. Group C consists of Zero S.E., which is postulated in sentences where there is also a subject nominal, such as laamdo war-ii (which is comparable with 'o-war-ii "he came", nge-war-ii "it (cow) came" etc.), and laambe ngar-ii (which is comparable with be-ngar-ii "they came" di-ngar-ii "they (cows) came" etc.).

The division of these three groups into subdivisions (i) and (ii) not only corresponds roughly (but not exactly) to the semantic distinction between singular and plural, but also corresponds to a difference in grammatical behaviour, viz. S.E.'s of sub-group (i) may be, and in most tenses are, associated with R^1 of variform radicals (cf. § 4.12), while those of sub-group (ii) are always associated with R^2 .

The further subdivision within A(i) and A(ii) corresponds to the individual nominal classes to which the S.E.'s are related, that within

B(i) and B(ii) to various differences in grammatical behaviour within the verbal system. The only point which need be mentioned here is that the reason for treating the 'en forms ("you and I") as 2nd person plural rather than 1st person plural is that grammatically this category of S.E. behaves more like other 2nd person S.E.'s than like the 1 pl. S.E. - see especially the 'suffixed' forms of series 4 and 5.

Object Elements

The adjacent table gives the whole range of object elements, classified in the same way as Subject elements (cf. Appendix E), the main categories corresponding to groups A, B and C of the S.E.'s.

The following notes are referred to in the table.

1. In the last three columns ' represents 'final glottality', and ^h represents absence of final glottality - cf. section (a) of Chapter 7.
2. *cfum* is the usual form, but the class concord forms of categories A(i) and (ii) are sometimes used, especially where the nominal referred to belongs to a class other than Class 1.

Table of Object Elements
(compared with Series 1 Subject Elements)

Main Category	Class	Person	S.E. Series 1	Object Elements				
				pattern 1 -CVC or -CV	2 -VC or -V	3 -CVV		
A (i)	1	3 sing.	'o-(or mo-)	-mo' 1		-moo' 1		
	3		kal-	-kal'				
	4		ngum-	-ngum'				
	5		ngel-	-ngel'				
	7		nga-	-nga'				
	9		nde-	-nde'				
	10		ndi-	-ndi'				
	11		ndu-	-ndu'				
	12		nga-	-nga'				
	13		nge-	-nge'				
	14		ngo-	-ngo'				
	15		ngu-	-ngu'				
	16		ngal-	-ngal'				
	17		ngol-	-ngol'				
	18		ka-	-ka'				
	19		ki-	-ki'				
	20		ko-	-ko'				
	21		kol-	-kol'				
	22		d̥am-	-d̥am'				
	23		d̥um-	-d̥um'				
	A (ii)		2	3 pl.	ʒe-	-ʒe'		
			6		kon-	-kon'		
			8		ko-	-ko'		
24		d̥e-	-d̥e'					
25		d̥i-	-d̥i'					
B (i)	1 sing.	1 sing.	mi-	-yam ^h	-am ^h			
	2 sing.	2 sing.	'a-	-ma ^h	-e ^h	-maa'		
B (ii)	1 pl.	1 pl.	min-	-min ^h				
	2 pl. incl.	2 pl. incl.	'en-	-'en ^h				
	2 pl. excl.	2 pl. excl.	'on-	-'on ^h				
C (i)	(referring to a nominal in the same sentence)	Zero	-d̥um ^h (or -mo' etc.) ²					
(ii)		Zero	-d̥um ^h (or -ʒe' etc.)					

For notes, see the previous page.

WILLIAM - JOHN LEADLEY and no barrel
- 21/10/1944

(a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z)

[G]

BOMB

LITVMBOMB

An indication of the meanings of complexes given in Appendix G
(The meaning given is usually that of the 3 sing. complex)
(a)
ACTIVE.

1. He hid, he has hidden.
2. He hid, he has hidden.
3. He will hide, He hides (habitually).
4. He'll hide.
5. May (God) cover up. pl. Let's hide. Middle May (God) prepare.
6. He did not hide. He has not hidden. (He has not got .. hidden)
7. He will not hide. He does not hide. He is not hiding.
8. He is not thin.

The meanings of the Middle and Passive complexes are comparable, except that with the radical sunder - the common meanings are respectively "hide oneself" and "be hidden", e.g. 1b "he hid himself" &c. 1c "he was hidden" &c.

Conspectus of Tenses

(containing representative Minimal Complexes of all tenses)

Based on the radical suud- "hide" except where inappropriate.

Tense Group No.	Categories of S.E.	ACTIVE (a)	MIDDLE (b)	PASSIVE (c)	Name of Tense
1	(1, 2,) 3 sing. " " " pl.	'o-suud-ii se-shuud-ii	'o-suud-ake se-shuud-ake	'o-suud-asma se-shuud-asma	General Past
2	(1, 2,) 3 sing. " " " pl.	'o-suud-(u) se-shuud-(u)	'o-suud-i se-shuud-i	'o-suud-a se-shuud-a	Emphatic Past (emphasis on the action of the verb)
3	(1, 2,) 3 sing. " " " pl.	'o-suud-ai se-shuud-ai	'o-suud-oto se-shuud-oto	'o-suud-ete se-shuud-ete	Future/Habitual
4	(1, 2,) 3 sing. " " " pl.	'o-suud-(u)ma se-shuud-(u)ma	'o-suud-ooma se-shuud-ooma	'o-suud-eema se-shuud-eema	Vague Future, or Minatory Future
5	Zero S.E. sing. 2 pl. incl.	(Alla) suud-u 'en-shuud-(u)	(Alla) shiry'o 'en-shuud-o	- -	'Optative' (prayer) ("let us...")
6	(1, 2,) 3 sing. " " " pl.	'o-suud-aayi se-shuud-aayi	'o-suud-aaki se-shuud-aaki	'o-suud-aaka se-shuud-aaka	Negative, past (and Stative)
7	(1, 2,) 3 sing. " " " pl.	'o-suud-ataa se-shuud-ataa	'o-suud-ataako se-shuud-ataako	'o-suud-ataake se-shuud-ataake	Negative, Future/Habitual (and Progressive)
8	(1, 2,) 3 sing. " " " pl.	'o-suw-aa se-shuw-aa	- -	- -	Negative of Quality

X (1, 2,) 3 sing., or (1, 2,) 3 pl., indicates that complexes with S.E.'s of all singular, or all plural, categories are identical apart from the difference of S.E., and that the complex quoted is a 3 sing., or 3 pl., complex.

Y Many speakers use a participial construction (e.g. 'o-shuud-ete-do) rather than this tense form - perhaps because the tense 3a (Active) complex with 2 sing. O.E. is also 'o-suud-ete, which would be indistinguishable in speech.

(The meaning is that of the Active voice, unless otherwise stated)

- 9a. He has got ... hidden.
- 9b. He is in hiding.
- 9c. He is hidden (having been hidden by someone else).
- 10. He is (in process of) hiding.

- 11. He has/had got ... hidden) used in certain types of constructions.
- 12. He is/was hiding.)

- 13. He is to hide, let him hide, he should hide, &c.

- 14. He hid, he has/had hidden, he had ... hidden.) (used in relative clauses and certain other constructions)

- 15. He will hide, he hides, he is hiding.) (used in relative clauses and certain other constructions)

1. He has got ... hidden.	1. He is in hiding.	1. He is hidden (having been hidden by someone else).	1. He is (in process of) hiding.
2. He has/had got ... hidden.	2. He is/was hiding.	2. He is to hide, let him hide, he should hide, &c.	2. He hid, he has/had hidden, he had ... hidden.
3. He will hide, he hides, he is hiding.	3. He is hidden.	3. He is hidden.	3. He is hidden.
4. He is hidden.	4. He is hidden.	4. He is hidden.	4. He is hidden.
5. He is hidden.	5. He is hidden.	5. He is hidden.	5. He is hidden.
6. He is hidden.	6. He is hidden.	6. He is hidden.	6. He is hidden.
7. He is hidden.	7. He is hidden.	7. He is hidden.	7. He is hidden.
8. He is hidden.	8. He is hidden.	8. He is hidden.	8. He is hidden.
9. He is hidden.	9. He is hidden.	9. He is hidden.	9. He is hidden.
10. He is hidden.	10. He is hidden.	10. He is hidden.	10. He is hidden.
11. He is hidden.	11. He is hidden.	11. He is hidden.	11. He is hidden.
12. He is hidden.	12. He is hidden.	12. He is hidden.	12. He is hidden.
13. He is hidden.	13. He is hidden.	13. He is hidden.	13. He is hidden.
14. He is hidden.	14. He is hidden.	14. He is hidden.	14. He is hidden.
15. He is hidden.	15. He is hidden.	15. He is hidden.	15. He is hidden.

[9. cont.]

Tense Group	Tense No.	Categories of S.E.	(a) ACTIVE	(b) MIDDLE	(c) PASSIVE	Name of Tense
B	9	(1, 2,) 3 sing. " " " pl.	'odon-suud-i' ʃeʔon-shuud-i'	'odon-suud-i-i' ʃeʔon-shuud-i-i'	'odon-suud-aa' ʃeʔon-shuud-aa'	Stative (denotes a state)
			'odon-suud-a' ʃeʔon-shuud-a'	'odon-suud-oo' ʃeʔon-shuud-oo'	'odon-suud-ee' ʃeʔon-shuud-ee'	Progressive (action in progress)
C	11	(1, 2,) 3 sing. " " " pl.	'emo-suud-i' 'eʃe-shuud-i'	'emo-suud-i-i' 'eʃe-shuud-i-i'	'emo-suud-aa' 'eʃe-shuud-aa'	Subordinate Stative (used mainly in subordinate clauses)
			'emo-suud-a' 'eʃe-shuud-a'	'emo-suud-oo' 'eʃe-shuud-oo'	'emo-suud-ee' 'eʃe-shuud-ee'	Subordinate Progressive
D	13	3 sing. 3 pl.	'o-suud-a' ʃe-shuud-a'	'o-suud-oo' ʃe-shuud-oo'	'o-suud-ee' ʃe-shuud-ee'	Subjunctive
			mi-suud-a' shuud-aa'	mi-suud-oo' shuud-oo-ʔaa'	mi-suud-ee' shuud-ee-ʔaa'	
		1 pl. 2 " incl. 2 " excl.	min-shuud-a' shuud-a-en' shuud-on'	min-shuud-oo' shuud-oo-ʔen' shuud-oo-ʔon'	min-shuud-ee' shuud-ee-ʔen' shuud-ee-ʔon'	
E	14	3 sing. 3 pl.	'o-suud-i' ʃe-shuud-i'	'o-suud-i-i' ʃe-shuud-i-i'	'o-suud-aa' ʃe-shuud-aa'	Relative Past (& Stative) (used in relative clauses, &c.)
			shuud-(u)-mi' shuud-(u)-ʔaa'	shuud-i-i-mi' shuud-i-i-ʔaa'	shuud-aa-mi' shuud-aa-ʔaa'	
	1 pl. 2 " inclusive 2 " exclusive	min-shuud-i' shuud-(u)-ʔen' shuud-(u)-ʔon'	min-shuud-i-i' shuud-i-i-ʔen' shuud-i-i-ʔon'	min-shuud-aa' shuud-aa-ʔen' shuud-aa-ʔon'		
15	3 sing. 3 pl.	'o-suud-ata' ʃe-shuud-ata'	'o-suud-otoo' ʃe-shuud-otoo'	'o-suud-ete'e' ʃe-shuud-ete'e'	Relative Future/Habitual (& Progressive)	
		shuud-ai-mi' shuud-at-aa'	shuud-otoo-mi' shuud-otoo-ʔaa'	shuud-ete-mi' shuud-ete-ʔaa'		
		1 pl. 2 " inclusive 2 " exclusive	min-shuud-ata' shuud-et-en' shuud-et-on'	min-shuud-otoo' shuud-otoo-ʔen' shuud-otoo-ʔon'	min-shuud-ete'e' shuud-ete-e-ʔen' shuud-otoo-ʔon'	

' at end of a complex represents 'Final Glottality'

Table of Tense Suffixes
found in Minimal Complexes.

<u>Tense</u>	(a) ACTIVE	(b) MIDDLE	(c) PASSIVE
1	-ii	-ake	-aama
2	-U ¹ (-u:zero:-(u))	-i	-a
3	-ai	-oto	-ete
4	-Uma ¹ (-uma:-ma:-(u)ma)	-ooma	-eema
5	-U (-u:zero:-(u))	-o	-
6	-aayi	-aaki	-aaka
7	-[a]taa ²	-[a]taako	-[a]taake
8	-aa	-	-
9	-i	-ii	-aa
10	-a	-oo	-ee
11	-i	-ii	-aa
12	-a	-oo	-ee
13	-a/Zero	-oo/-o	-ee/-e
14	-i/-U	-ii/-i	-aa/-a
15	-ata/-ai:-[V]t ³	-[o]too/-[o]to	-[e]tee/-[e]te

- Notes.
1. -U and -Uma represent suffix clusters, as shown in brackets. cf. § 4.32.
 2. -[a]taa represents a set of suffix variants, cf. § 4.35; similarly with the other T.S.'s marked by square brackets.
 3. -V represents a vowel of the same quality as the following vowel.

Table of Representative Enlarged Complexes

1-object complexes,
Preterite complexes, and
Preterite 1-object complexes

ACTIVE		MIDDLE		PASSIVE	
Tense	O.E.	Tense	O.E.	Tense	O.E.
1a	all <u>Preterite</u> all	1b <u>Preterite</u> all	'o-yaaf-ake-be' &c. 'o-yaaf-ake-no 'o-yaaf-ake-no-be' &c.	1c <u>Preterite</u> all	'o-suud-ama-be' &c. 'o-suud-a-no-ma-be' (or 'o-suud-ama-no) 'o-suud-a-no-ma-be' &c. (or 'o-suud-ama-no-be' &c.)
2a	1 s. 2 s. others	2b <u>Preterite</u> 1 s. 2 s. others	'o-yaaf-am 'o-yaaf-e 'o-yaaf-i-be' &c.	2c <u>Preterite</u> 1 s. 2 s. others	'o-suud-a-yan 'o-suud-a-ma 'o-suud-a-be' &c.
3a	<u>Preterite</u> 1 s. 2 s. others	3b <u>Preterite</u> 1 s. 2 s. others	'o-yaaf-i-no 'o-yaaf-i-no-yan 'o-yaaf-i-no-ma 'o-yaaf-i-no-be' &c.	3c <u>Preterite</u> 1 s. 2 s. others	'o-suud-a-no 'o-suud-a-no-yan 'o-suud-a-no-ma others 'o-suud-a-no-be' &c.
4a	2 s. others	3b <u>Preterite</u> 2 s. others	'o-yaaf-ete 'o-yaaf-ete-be' &c.	3c <u>Preterite</u> 2 s. others	'o-suud-ete-ma others 'o-suud-ete-be' &c.
5a	1 s. 2 s. others	4b <u>Preterite</u> 2 s. others	'o-yaaf-oto-no 'o-yaaf-oto-no-ma 'o-yaaf-oto-no-be' &c.	4x <u>Preterite</u> 2 s. others	'o-suud-ete-no others 'o-suud-ete-no-be' &c.
6a	all <u>Preterite</u> all	4b <u>Preterite</u> all	'o-jog-oma-be' &c.	4x <u>Preterite</u> all	'o-suud-eema-be' &c.
7a	1 s. 2 s. others	5b <u>Preterite</u> 1 s. 2 s. others	'o-nang-uma-be' &c.	5c - none	
8a	all <u>Preterite</u> all	6b <u>Preterite</u> all	(Mia) yaaf-am (Mia) yaaf-e others (Mia) yaaf-o-be' &c.	6c <u>Preterite</u> all	'o-suud-ake-be' &c. 'o-suud-ake-no 'o-suud-ake-no-be' &c.
	all <u>Preterite</u> all	7b <u>Preterite</u> all	'o-yaaf-aki-be' &c. 'o-yaaf-aki-no 'o-yaaf-aki-no-be' &c.	7c <u>Preterite</u> all	'o-suud-ataake-be' &c. 'o-suud-ataake-no 'o-suud-ataake-no-be' &c.
	all <u>Preterite</u> all	8a <u>Preterite</u> all	'o-yaaf-ataake-be' &c. 'o-yaaf-ataake-no 'o-yaaf-ataake-no-be' &c.		
	all <u>Preterite</u> all		'o-yaaf-ataake-be' &c. 'o-yaaf-ataake-no 'o-yaaf-ataake-no-be' &c.		

(continued on next page)

Notes &c. indicates that complexes with O.E.'s of other categories are identical, apart from the difference in the O.E. itself.

The radicals wall- "help", yaaf- "forgive", and suud- "hide", except where inappropriate. Other radicals used are nang- "catch", jog- "take hold of", "suud- "know".

Table of Representative Enlarged Complexes
(cont.)

(App. J)

2

Tense 9a

<u>Type of Complex</u>	<u>O.E.</u>	
a Minimal		'odfon-nanng-i'
b 1-object	most	'odfon-nanng-i-mo' &c.
c "	2 s.	'odfon-nanng-u-maa'
d Preterite		'odfon-no-nanng-i'
e Pret. 1-obj.	most	'odfon-no-nanng-i-mo' &c.
f "	2 s.	'odfon-no-nanng-u-maa'
	<u>less often</u>	
g Pret.		'odfon-nanng-u-noo'
h Pret. 1-obj.	most	'odfon-nanng-u-noo-mo' &c.
j "	2 s.	'odfon--nanng-u-no-maa'

nanng- = "catch"

"he has (him/you &c.) under arrest"

"he had " " " "

For the remaining tenses ~~numbered 9 and 10~~ the letters on the left will be used to indicate the type of complex; complexes which are comparable, apart from the presence of extra elements, will be combined for brevity; and elements which are present in some complexes but not in others will be enclosed in brackets.

Tense 9b

a	'odfon-jog-ii'
b, d, e	'odfon(-no)-jog-ii(-mo)'
c, f	'odfon(-no)-jog-i-maa'
g, h	'odfon-jog-i-noo(-mo)'
j	'odfon-jog-i-no-maa'

jog- = "take hold of"

"he has (or had) (him/you) ~~under arrest~~
in his grasp"Tense 9c

a	'odfon-suud-aa'
b, d, e	'odfon(-no)-suud-aa(-mo)'
c, f	'odfon(-no)-suud-aa-ma or 'odfon(-no)-suud-a-maa'
g, h	'odfon-suud-a-noo-mo'
j	'odfon-suud-a-noo-ma or 'odfon-suud-a-no-maa'

suud- = "hide"

"he was (or had been) hidden (from him/you)"

Tense 10a

a	'odon-wall-a'	
b, d, e	'odon(-no)-wall-a(-mo)'	
c, f		'odon(-no)-wall-u-maa'
g, h	'odon-wall-a-no(-mo)'	or 'odon-wall-u-no(-mo)'
		'odon-wall-u-noo(-mo)'
j		'odon-wall-u-no-maa'

wall- = "help"

"he is (or was) helping (him/you)"

Tense 10b

a	'odon-jog-oo'	
b, d, e	'odon(-no)-jog-oo(-mo)'	
c, f		'odon(-no)-jog-o-maa'
g, h	'odon-jog-oo-no(-mo)'	OR 'odon-jog-o-noo(-mo)'
j		'odon-jog-o-no-maa'

"he is (or was) taking hold (of him/you)"

Tense 10c

a	'odon-suud-ee'	
b, d, e	'odon(-no)-suud-ee(-mo)'	
c, f		'odon(-no)-suud-ee-ma
		or 'odon(-no)-suud-e-maa'
g, h	'odon-suud-ee-no(-mo)'	or 'odon-suud-e-nod(-mo)'
j		'odon-suud-e-no-maa'
		or 'odon-suud-e-noo-ma'

"he is (or was) being hidden (from him/you)"

Tense 11a

(See next page)

(Tenses numbered 11-12 do not have preterite complexes)

Tense 11a

a, b 'emo-nanng-i(-mo)'
 c 'emo-nanng-u-maa'
 "he had (him/you) under arrest"

Tense 11b

a, b 'emo-jog-ii(-mo)'
 c 'emo-jog-i-maa'
 "he had (him/you) in his grasp"

Tense 11c

a, b 'emo-suud-aa(-mo)'
 c 'emo-suud-aa-ma
 or 'emo-suud-a-maa'
 "he was hidden (from him/you)"

Tense 12a

a, b 'emo-wall-a(-mo)'
 c 'emo-wall-u-maa'
 "he was helping (him/you)"

Tense 12b

a, b 'emo-jog-oo(-mo)'
 c 'emo-jog-o-maa'
 "he was taking hold (of him/you)"

Tense 12c

a, b 'emo-suud-ee(-mo)'
 c 'emo-suud-ee-ma
 or 'emo-suud-e-maa'
 "he was being hidden (from him/you)"

Tenses numbered 13

	<u>1st & 3rd persons</u> (S-B)	<u>2nd persons</u> (B-S)	
<u>Tense 13a</u>			
a, b	'o-wall-a(-mo)'	{ mball-on(-mo)' mball-aa(-mo)'	you (pl.) should help (him)
c	'o-wall-u-maa'		he/you should help(him) he should help you

<u>Tense 13b</u>			
a, b	'o-yaaf-oo(-mo)'	{ njaaf-oo-don(-mo)' njaaf-o-daa(-mo)'	you(pl.) should forgive/ (him) he/you " " "
c	'o-yaaf-o-maa'		he should forgive you

<u>Tense 13c</u>			
a, b	{ 'o-suud-ee(-mo)' shuud-ee-don(-mo)' shuud-e-daa(-mo)'		you (pl.) he/you should be hidden From (him)
c	'o-suud-ee-ma or 'o-suud-e-maa'		he should be hidden from you

Tenses numbered 14 and 15

	<u>3rd persons</u> & 1 pl. S.E.'s (S-B-(P)-(O))	<u>1 sing. S.E.</u> B-(P)-(O)-S & B-(P)-S-(O)	<u>2nd person S.E.'s</u> B-(P)-S-(O)
--	---	---	---

<u>Tense 14a</u>			
a, b	'o-wall-i(-mo)'	mball-u-mi(-6e)'	2 s. mball-u-daa(-mo)'
d, e	'o-wall-u(-noo(-mo))' 'o-wall-u(-noo(-mo))'	mball-u-noo-mi(-6e)'	2 pl. mball-u-don(-mo)' s. mball-u-no-daa(-mo)'
c, f	'o-wall-u(-no)-maa'	mball-u(-no)-maa-mi'	pl. mball-u-noo-don(-mo)'
		3 sing. O.E. Cl.1 mball-u(-no)-moo-mi'	

<u>Tense 14b</u>			
a, b	'o-yaaf-ii(-mo)'	njaaf-ii-mi(-6e)'	2 s. njaaf-i-daa(-mo)'
d, e	'o-yaaf-i-noo(-mo)'	njaaf-i-noo-mi(-6e)'	2 pl. njaaf-ii-den(-mo)' s. njaaf-i-no-daa(-mo)'
c, f	'o-yaaf-i(-no)-maa'	njaaf-i(-no)-maa-mi'	pl. njaaf-i-noo-don(-mo)'
		3 sing. O.E. Cl.1 njaaf-i(-no)-moo-mi'	

* N.B. -6e is used to represent the majority of O.E.'s with 1 sing. S.E., since there is a different pattern with 3 sing. O.E. of Claas 1.

3rd persons
& 1 pl. S.E.'s
S-B-(P)-(O)

B-(P)-(O)-S
& B-(P)-S-(O)

B-(P)-S-(O)

(App.J)
6

Tense 14c

a, b	'o-suud-aa(-mo)'	shuud-aa-mi(-se)'	2 s. shuud-a-daa(-se)'
d, e	'o-suud-a-noo(-mo)'	shuud-a-noo-mi(-se)'	2 pl. shuud-aa-don(-se)'
c	'o-suud-aa-ma	shuud-a-maa-mi'	s. shuud-a-no-daa(-se)'
or	'o-suud-a-maa'		pl. shuud-a-noo-don(-se)'
f	'o-suud-a-no-maa'	shuud-a-no-maa-mi'	(was "he had been hidden from him" &c. &c.
		<u>with 3 sing. O.E. Cl.1</u>	
		c, f shuud-a(-no)-maa-mi'	

Tense 15a

a, b	'o-wall-ata(-mo)'	mball-ai-mi(-se)'	2 s. mball-at-aa(-se)'
d, e	'o-wall-ai-noo(-mo)'	mball-ai-noo-mi(-se)'	2 pl. mball-ot-on(-mo)'
c	'o-wall-ata(-ma	mball-ai-maa-mi'	s. mball-ai-no-daa(-mo)'
or	'o-wall-ai-maa'		pl. mball-ai-noo-don(mo)'
f	'o-wall-ai-noo-ma	mball-ai-no-maa-mi'	"he is/was going to help him" &c. &c.
or	'o-wall-ai-no-maa'		
		<u>with 3 sing. O.E. Cl.1</u>	
		c, f mball-ai(-no)-moo-mi'	

Tense 15b

a, b	'o-yaaf-otoo(-mo)'	njaaf-otoo-mi(-se)'	2 s. njaaf-oto-daa(-se)'
d, e	'o-yaaf-oto-noo(-mo)'	njaaf-oto-noo-mi(-se)'	2 pl. njaaf-otoo-don(-se)'
c, f	'o-yaaf-oto(-no)-maa'	njaaf-oto(-no)-maa-mi'	s. njaaf-oto-no-daa(-se)'
		<u>with 3 sing. O.E. Cl.1</u>	pl. njaaf-oto-noo-don(-se)'
		c, f njaaf-oto(-no)-moo-mi'	"he is/was going to forgive him" &c. &c.

Tense 15c

a, b	'o-suud-ete(-mo)'	shuud-ete-mi(-se)'	2 s. shuud-ete-daa(-se)'
d, e	'o-suud-ete-noo(-mo)'	shuud-ete-noo-mi(-se)'	pl. shuud-ete-don(-se)'
c	'o-suud-ete-ma	shuud-ete-maa-mi'	s. shuud-ete-no-daa(-se)'
or	'o-suud-ete-maa'		pl. shuud-ete-noo-don(-se)'
f	'o-suud-ete-noo-ma	shuud-ete-no-maa-mi'	"he is/was going to be hidden from him" &c. &c.
or	'o-suud-ete-no-maa'		
		<u>with 3 sing. O.E. Cl.1</u>	
		c, f shuud-ete(-no)-moo-mi'	

Table of Tense Suffixes
found in Enlarged Complexes

<u>Tense No.</u>	(a) <u>ACTIVE</u>	(b) <u>MIDDLE</u>	(c) <u>PASSIVE</u>
1	-ii	-ake	-aama/-a...ma
2	-U/Zero	-i/Zero	-a
3	-ai/-Vt	-oto/-Vt	-ete
4	-Uma	-ooma	-eema
5	-U/Zero	-o/Zero	-
6	-aayi	-aaki	-aaka
7	-[a]taa	-[a]taako	-[a]taake
8	-aa	-	-
9) &) 11)	-i/-U	-ii/-i	-aa/-a
10) &) 12)	-a/-U	-oo/-o	-ee/-e
13	((S-B) -a/-U) () ((B-S) Zero)	-oo/-o	-ee/-e
14	((S-B) -i/-U) () ((B-S) -U)	-ii/-i	-aa/-a
15	((S-B) -ata/-ai) () ((B-S) -ai: [V]t)	-[o]too/-[q]to	-[e]tee/-[e]te

Generalised Tense Suffixes

Pattern Generalised T.S. Alternants Forms Found in the following tenses Single Tense Suffixes resembling the First Form of a Generalised Suffix T.S. Tense

(a) -VV/-V * -i-i -i-i/-i 1st/2nd 9b, 11b, 14b -i-i 1a

* -aa -aa/-a do. 9c, 11c, 14c -aa 8a

* -aama -aama/-a..ma do. 1c

* -oo -oo/-o do. 10b, 12b, 13b

* -ee -ee/-e do. 10c, 12c, 13c

(b) - [ʏ]tV/- [ʏ]tV * -[o]ftoo -[o]ftoo/-[o]fto do. 15b -[a]taa 7a

* -[e]tee -[e]tee/-[e]te do. 15c

(c) -V/-U/Zero * -i -i/-U do. 9a, 11a, 14a (S-B)

* -i -i/Zero 1st/3rd 2b

* -a -a/Zero 1st/2nd 10a, 12a -a 2c

* -a -a/-U/Zero 1st/2nd/3rd 13a

* -o -o/Zero 1st/3rd 5b

(d) - [ʏ]tV/-ai/-ʏt * -[a]ta -[a]ta/a/-ai 1st/2nd 15a (S-B)

* -oto -oto/-ʏt 1st/3rd 3b

-ete 3c

(e) -U/-U/Zero * -U -U/-U 1st/2nd 14a (B-S)

* -U -U/Zero 1st/3rd 2a, 5a

(f) -ai/-ai/-[ʏ]t * -ai -ai/-ʏt 1st/3rd 3a

* -ai -ai/-ai/-[ʏ]t 1st/2nd/3rd 15a (B-S)

Miscellaneous Single Suffixes

-VVCV -ooma 4b -aayi 6a -[ʏ]tWCV -[a]taako 7b

-eema 4c -aaki 6b -[a]taake 7c

-aaka 6c -ake 1b

-Uma 4a

Tense Group No.	Arrangement	S.E. Series	Distribution of Radical Alternants		Tense Suffix		Alterance &c. correlated with (the behaviour of....)	O.E. Series	P.E.	F.G. in Minimal Complexes h or h	Position of Intonation Peak																																																	
			R ¹	R ²	Single	Alterance																																																						
A	S-B-(P)-(0)	1	4	5	-ii -ake	-aamq/-a...ma Arr. & P.E.	Alterance &c. correlated with (the behaviour of....)	1	=no -noo or -no	10	"																																																	
												1a	S-B-(P)-(0)	6	-U/Zero -i/Zero	O.E. O.E.	3	-no																																										
												b	"						-ai/-yt -oto/-yt	O.E. O.E.	2																																							
												c	S-R-t ₁ (P)-t ₂ (0) (or S-B-(P)-(0))									-ete	O.E. O.E.	1																																				
												2a	S-B-(P)-(0)												1	-Uma	Rad.	1	-																															
												b																		-ooma	-U/Zero -o/Zero	O.E. O.E.	3	-																										
												c																							-eema	Rad.	1	-																						
												3a																											S-B-(P)-(0)	1	-ay _i	Rad.	1	-no																
												b																																	-zaki	-la/jtaa	Rad.	1	-no											
												c																																						-zaka	-la/jtaako	Rad.	1	-no						
												4a																																											S-B-(P)-(0)	1	-la/jtaake	Rad.	1	-no
												b																																																
c	-aa	Rad.	1	-no																																																								
5a					S-B-(P)-(0)	1x	-aa	Rad.	1	-no																																																		
b											-aa	Rad.		1	-no																																													
c																-aa	Rad.	1	-no																																									
6a													S-B-(P)-(0)							1	-aa	Rad.	1	-no																																				
b																									-aa	Rad.	1	-no																																
c																													-aa	Rad.	1	-no																												
7a																																	S-B-(P)-(0)	1	-aa	Rad.	1	-no																						
b																																							-aa	Rad.	1	-no																		
c																																											-aa	Rad.	1	-no														
8a																																															S-B-(P)-(0)	1	-aa	Rad.	1	-no								
b																																																					-aa	Rad.	1	-no				
c	-aa	Rad.	1	-no																																																								
9a					S-(P)-B-(0) (or S-B-(P)-(0))	2	-i/-U	O.E. P.E. Rad.	4	-no																																																		
b											-ii/-i	O.E. P.E. Rad.		4	-no																																													
c																-aa/-a	O.E. P.E. Rad.	4 or 1	-noo/-no																																									
10a													S-(P)-B-(0) (or S-B-(P)-(0))							2	-a/-U	O.E. P.E. Rad.	4	-no																																				
b																									-oo/-o	O.E. P.E. Rad.	4 or 1	-noo/-no																																
c																													-ee/-e	O.E. P.E. Rad.	4 or 1	-noo/-no																												
11a																																	S-B-(0)	3	-i/-U	O.E. P.E. Rad.	4	-																						
b																																							-ii/-i	O.E. P.E. Rad.	4 or 1	-																		
c																																											-aa/-a	O.E. P.E. Rad.	4 or 1	-														
12a																																															S-B-(0)	3	-a/-U	O.E. P.E. Rad.	4	-								
b																																																					-oo/-o	O.E. P.E. Rad.	4	-				
c	-ee/-e	O.E. P.E. Rad.	4 or 1	-																																																								

Min. C. Enl. C.

Long Vowel of T.S.
Long Vowel of T.S.

P.V.C. as 6a as 6a

P.V.C.

F.G. Second Vowel of S.E.

F.G.

First Vowel of Radical

For notes see next page.

Tense	Group No.	Arrangement	Category	S.E. of S.E.	Series	Distribution of Radical Alternants		Tense Suffix			Suffix Alternance correlated with (the behaviour of)	O.E. Series	P.E.	F.G. in Minimal Complexes or h	Position of Intonation Peak
						R ¹	R ²	1	2	3					
D	13a	(S-B-(0) - 1 & 3 persons (B-S-(0) - 2nd persons	S.E.	4a	1 & 3 sing. 2 sing. & all plural	Y	(S-B) -a/-U	Arr.	O.E. P.E. Rad.	Rad.	4	-			
							(B-S) -I/Zero								
D	13b	(S-B-(0) - 1 & 3 persons (B-S-(0) - 2nd persons	S.E.	5a	1 & 3 sing. 2 sing. & all plural	Y	-oo/-o	S.E. O.E.				-			
							-ee/-e	S.E. O.E.	4 or 1						
D	13c	(S-B-(0) - 1 & 3 persons (B-S-(0) - 2nd persons	S.E.	5a	1 & 3 sing. 2 sing. & all plural	Y	-ee/-e	S.E. O.E.	4 or 1						
D	14a	(S-B-(P)-(0) 3 sing. and 1 & 3 plural	S.E.	5b	1 & 2 Y 3 Y sing. & all plural	Y	(S-B) -I/-U	Arr.	O.E. P.E. Rad.	Rad.	4/5	Z			
							(B-S) -U								
D	14b	(B-(P)-(0)-S 1 sing. with certain O.E.'s	S.E.	5b	1 & 2 Y 3 Y sing. & all plural	Y	-II/-I	S.E. O.E. P.E.							
							-aa/-a	S.E. O.E. P.E.	4 or 1/5						
D	14c	(B-(P)-(0)-S 1 sing. with other O.E.'s; 2nd person S.E.'s	S.E.	5b	1 & 2 Y 3 Y sing. & all plural	Y	(S-B) - fa /-ai	Arr.	O.E. P.E.	4 or 1/5					
							(B-S) -ai/-IY It	Arr.	S.E. O.E. P.E.	4 or 1/5					
D	15a	(B-(P)-(0)-S 1 sing. with other O.E.'s; 2nd person S.E.'s	S.E.	5b	1 & 2 Y 3 Y sing. & all plural	Y	-lo too/- o to	S.E. O.E. P.E. Rad.	4/5	Z					
							- e tee/- e te	S.E. O.E. P.E. Rad.	4 or 1/5						
D	15b	(B-(P)-(0)-S 1 sing. with other O.E.'s; 2nd person S.E.'s	S.E.	5b	1 & 2 Y 3 Y sing. & all plural	Y	- e tee/- e te	S.E. O.E. P.E. Rad.	4 or 1/5	Z					
D	15c	(B-(P)-(0)-S 1 sing. with other O.E.'s; 2nd person S.E.'s	S.E.	5b	1 & 2 Y 3 Y sing. & all plural	Y	- e tee/- e te	S.E. O.E. P.E. Rad.	4 or 1/5	Z					

W viz. 2 sing. & 3 sing. (Class 1)
 X 5b in Preterite Complexes
 Y These are all covered by the generalisation: R¹ in S-B singular complexes, R² in S-B plural complexes & all B-S complexes
 Z Series 5 in B-(P)-(0)-S complexes

Notes on abbreviations used on previous page :-
 Column 10 F.G. = final glottality
 h = absence of final glottality

Column 11 Mn.C. = Minimal Complex
 Enl.C. = Enlarged Complex
 P.V.C. = Penultimate Vowel of Complex.