

AN INVESTIGATION INTO THE TONAL SYSTEM  
OF ZULU, WITH SPECIAL REFERENCE TO NOUNS.

This thesis is submitted in partial fulfillment of the requirements for the degree of MASTER OF ARTS in the Department of Bantu Studies of the University of Natal.

PRESENTED BY

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(University of the Witwatersrand).
- A.N.TUCKER: An article in Volume XIII of the Bulletin of the School of Oriental  
and African Studies, University of London.
- K.L.PIKE: "Tone Languages". (University of Michigan).
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PART ONE.I N T R O D U C T I O N.CHAPTER I ..... DEFINITIONS.PITCH.

The actual note struck by the voice on the syllable. This can be accurately determined and recorded by mechanical means, according to the number of vibrations per second. The study of pitch involves musical analysis, so that each pitch can be plotted on the musical scale, as has been done by Prof. Doke in "The Musical Analysis of Zulu Tone" in "The Phonetics of the Zulu Language".

tone.

Not the absolute pitch, but the relative pitch struck by the voice on the syllable. A high tone is not high by virtue of its acoustic pitch, but by virtue of its relative height compared with other tones. In the tonal system of a tone language, the significant factor is the relationship between tones and not the relationship of pitches to an absolute scale. In this investigation therefore the study is not of absolute pitch, but of relative pitch, or tone. "It is the relative height of the tones, not the actual pitch, which is pertinent to linguistic analysis". (Pike)

tone language.

Pike defines a tone language as a language having lexically significant tone on each syllable. In such a language the tone is as much a part of the syllable as the qualities of consonant and vowel. In a non-tone language, tone is a purely prosodic feature, a feature of the sentence rather than of the syllable. This use of tone at the sentence level is called intonation, as distinct from the use of tone at the syllable level so typical of tone languages.

In a tone language, the role of intonation is limited, the tune of the sentence being determined at the level of the syllable

by the individual tones of the constituent syllables. Tone is therefore studied at the syllable level, whereas intonation is studied at the sentence level.

Chinese is the example par excellence of a tone language. In such a language each syllable bears a lexically significant tone, the function of that tone being to distinguish the syllable as to meaning in the same way that consonants and vowels do. Tone therefore plays no part in the grammar—it is a matter only for the lexicon or dictionary.

This definition of a tone language given above, is not however quite true of Bantu languages. In Bantu languages (excepting Swahili, which is not a tone language at all), tone is grammatical as well as lexical. Not only is tone significant at the lexical level by distinguishing words as to meaning, but it is also significant at the grammatical level by indicating grammatical function both morphological and syntactical. Tone is therefore not only a matter for the lexicon or dictionary but also for the grammar. In addition tone may play a part at the sentence level, but the role of intonation in tone languages is always limited. There is therefore an interplay of lexical and grammatical tone, which considerably complicates the tonal systems of these languages, so that it cannot be said that tone is a fixed feature of the syllable in the same way that consonants and vowels are.

Nevertheless the Bantu languages are tone languages, as tone is significant at the syllable level both lexically and grammatically. A more accurate definition of a tone language is therefore: "A Tone Language is a language having lexically and grammatically significant syllabic tone".

#### TONETICS, TONOLOGY, AND THE PRINCIPLE OF THE TONEME.

These terms are used in relation to speech sounds on the vertical plane (tones), in the same way that the terms phonetics,

phonology, and the principle of the phoneme are used in relation to speech sounds on the horizontal planes (phones).

(a) Tonetics and Phonetics.

Phonetics is the study in as great a detail as possible of the sound features on the horizontal plane. Many of these details are too minute to be recorded by the human ear, which is therefore supplemented by the use of such machines as the kymograph. In this way phonetic features such as aspiration, voicing, ejection, etc., can be accurately recorded, and shown by means of kymograph tracings. This study has been thoroughly undertaken by Prof. Doke in "The Phonetics of the Zulu Language". Tonetics is the similar study of the sound features on the vertical plane, and this study has also been undertaken by Prof. Doke in the same work. He isolates nine pitch points of tone, each of which is an absolute entity according to the number of vibrations per second, and can therefore be plotted on the musical scale.\*

Just as the mass of phonetic details is simplified into some sort of system for the practical purposes of speaking the language, and of representing the spoken language in writing, so also is the mass of tonetic details. Linguistic analysis is the abstraction from "the mush of general goings-on" (Firth) of those things relevant to the particular purpose. At this level of linguistic analysis, Phonology is the study which investigates phonetic facts with a view to abstracting those distinctions which are significant to the phonal sound system of the language, and Tonology is the study which investigates tonetic facts with a view to abstracting those distinctions which are significant to the tonal sound system of the language.

The former study has been carried out by Prof. Doke in "The Phonetics of the Zulu Language", but not the latter; or rather by no means completely, as he himself admits. This

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\* The musical scale varies between men and women, and also



thesis is a contribution towards that deficiency in the present knowledge of the Zulu language.

(b) Tonology and Phonology.

Phonology is the study which seeks to systemise the mass of phonetic facts by abstracting from "the mush of general goings-on" those facts significant to the sound system. The main means whereby this is done is the principle of the phoneme.

Certain details of phonetics are significant in the language because they form part of its sound system; others are not, and can therefore be ignored. Of these significant details, some are distinctive ("semantically significant"), and others are non-distinctive, but they cannot therefore be ignored, as they are nevertheless significant. The distinctive features are abstracted according to the principle of the phoneme and represented as phonemes, or distinctive sound units. These are therefore abstractions, the actualities being the allophones of the phoneme, differences between which are non-distinctive phonemically, but nevertheless phonologically significant.

Prof. Daniel Jones describes the phoneme as "a family of sounds consisting of an important sound, together with other related sounds which take its place in particular sound sequences"; but Pike more accurately regards the phoneme as "a distinctive sound unit", an abstraction realised in speech as one of a number of allophones, depending on the phonological principles obtaining in that particular language. Bloomfield describes the phoneme as "a minimum unit of distinctive sound feature": each phoneme is characterised by a sound feature that is distinctive, the differences between the allophones of each phoneme being non-distinctive. As Bloomfield says, the non-distinctive features receive conventional treatment according to the phonological system of the language, otherwise the speaker will speak with a foreign accent. For example the "p" phoneme in English is a sound unit characterised by

voiceless bilabial plosion, that being the distinctive sound feature of that phoneme. The differences between the allophones of that phoneme are non-distinctive phonemically, but nevertheless phonologically significant, and these differences, the non-distinctive features, must be observed if the speaker is not to speak with a foreign accent.

Thus the aspirated allophone of the "P" phoneme is not phonemically distinct from the unaspirated allophone, but the significance of the aspiration is soon seen by its absence when a Frenchman speaks English. The Frenchman tends to ignore this aspiration because in his own language this feature is not significant whereas in English it is significant, although phonemically non-distinctive. In Zulu however this aspiration is not only significant, but also phonemically distinctive, so that the "Ph" phoneme is distinct from the "P" phoneme by virtue of its aspiration, the distinctive sound feature.

This example shows that whereas phonetic facts are general, applicable to all languages (witness the International Phonetic Alphabet), phonological facts are specific, applicable only to the particular language in question. Not only does the application of the principle of the phoneme to the mass of phonetic facts produce a different result for each language sound features distinctive in one language being non-distinctive in another, but also the range of the allophones and the nature of the differences between them varies from language to language.

These definitions of phonology and the phoneme, and the general observations made above, may now be applied in toto to the study of tone. Thus the toneme is a distinctive sound unit of tone, or simply a distinctive tone-unit, an abstraction realised in speech as one of a number of allotones, depending

on the tonological principles obtaining in that particular language. The tonal differences between allotones, though non-distinctive tonemically; are tonologically significant and must therefore be observed. Failure to observe the tonological principles determining the correct use of allotones is as serious as, to take an example from Zulu, the failure to observe the phonological principles determining the quality of the mid-front and mid-back vowels.

There is however one thing to notice in the application of this terminology to the study of tone, and that is that the distinctive tone feature characterising each toneme is not distinctive per se, but in relation to the distinctive tone features of other tonemes. A high toneme is a tone-unit characterised not by some absolute degree of pitch, but by a degree of pitch that is high in relation to the degrees of pitch characterising other tonemes. This in fact goes without saying, for tone is not absolute but relative : a tone is not an absolute pitch but a relative pitch.

To sum up, just as phonology may be described as the study of the sound system on the horizontal plane, so may tonology be described as the study of the sound system on the vertical plane, or the tonal system.

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CHAPTER II.  

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THE PURPOSE.

The purpose of this study is an investigation into the tonal system of Zulu, with special reference to nouns. The results of this research however have a wider application.

Part One (Introduction). applies generally.

Part Two (Tonology).

Chapters I and IV apply generally.

Chapters II and III to a great extent apply generally, but the illustrations are all nominal, and some of the facts thus illustrated may or do apply only to nouns.

Part Three (Tonal Grammar). applies to nouns only.

Part Four (Tonological principles).

Chapters I and II to a great extent apply generally, but the illustrations are all nominal, and some of the principles thus illustrated may or do apply only to nouns.

Chapter III applies generally.

Part Five (Conclusion). applies generally, but the examples are all nominal.

This field is virtually untouched, so little research having been carried out, but Prof. Doke and Prof. Tucker have made useful contributions:-

PROF. DOKE, who laid the foundations of tonal analysis in his outstanding work, "The Phonetics of the Zulu Language", there undertook a tonetic study, in which he isolated nine pitch-points of tone on the musical scale of each speaker. Similarly he isolated a large number of "tonal nuclei" (tonal shapes), but again these were tonetic rather than tonemic. No attempt at systemisation was made, although later in "The Southern Bantu Languages" he suggests that there are probably three tone heights tonemically. The significance of tone not only lexically but also grammatically

was pointed out, but no formulation of the tonological principles operating at these levels was made. Prof. Doke's study was primarily tonetic, whereas this study is tonological. In admitting that his study was incomplete, Prof. Doke says that "the tonology of Zulu is such that a very detailed series of investigations is necessary". This study is one of those investigations.

PROF. TUCKER makes a contribution by way of an article in the Bulletin of the School of Oriental and African Studies. There he postulates three tonemes:- high level, low level, high falling; and four tone patterns:- HH (high-high), HL (high-low), LL (low-low), LH (low-high). He also shows the influence of certain consonants on tone, a factor already pointed out by Prof. Doke in the above-mentioned work, saying that "non-breathy" consonants have a raising effect and "breathy" consonants a lowering effect. Prof. Tucker applies the principle of the toneme to the tonetic facts, his object being a method of tone-marking by way of a reduction to tonemes. His study is therefore primarily tonemic, whereas this study is tonological, abstracting not only the tonemes but also the tonological principles operating throughout the language; and finally to present the tonal system as "un système où tout se tient", Meillet's basic principle which Prof. Firth translates as "a system in which all the constituent units are held together in function by the whole".

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CHAPTER III.

THE METHOD.

The method of investigation has been the careful aural analysis of specific sentences drawn up to include nouns of different tonal types and of different consonantal composition, disyllabic, monosyllabic, and trisyllabic; in subject and object positions and in final position; and in various grammatical inflections, prefixal and suffixal.

These sentences were read by the speakers, and recorded by the tape recorder for the purpose of tonal analysis. Later recordings were made of sample speech from particular parts of Zululand and Natal. No instrumental analysis of these sentences has been made, as the investigation is not tonetic but tonological, for which the human ear is not only necessary, but sufficient, as distinctions which cannot be heard by the trained ear are not likely to be significant tonologically. In "Tone Languages" Pike points out that instrumental analysis is not very useful for two reasons:-

- (1) It is the relative pitch of tones that is significant, not the absolute pitch.
- (2) The tones vary considerably under various conditions.

A high level tone may be higher or lower, rising or falling, anything in fact but an absolute entity, which clarifies both these points. What concerns tonology is whether that tone is a member of the High Toneme or not, and this is something that cannot be determined by instrumental analysis.

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## CHAPTER IV.

-tone-marking.

The system of tone marking used throughout this thesis is a close transcription, the purpose being to show as many tonal distinctions as possible. For practical purposes a broad transcription is necessary of course, but the tonal system must first be analysed.

To a certain extent this <sup>s</sup>system of tone-marking presupposes tonological analysis, e.g. there is no special tone-mark for mid tones, which are marked either τ or τ', thus showing that they are regarded as either lowered-high tones or raised-low tones, and not as mid tones.

The system of tone marking is as follows:-

High tones are marked by a dash: —

Low tones are marked by a dot: .

Relatively higher or lower tones than these are indicated by a vertical mark above or below the tone-mark: † & τ, † & (†).

Rising and falling tones are indicated by rising and falling dashes, as only high tones can rise or fall: /, \, /, \; \, (v), (λ).

The downstep is marked thus: v

(Only occasionally is this mark needed. Normally the down step coincides with a low tone, and the appropriate tone-mark therefore indicates this as well).

Tonal displacement is marked thus: ←

(This indicates that the tone behind the mark has been displaced from the syllable shown by the arrow).

PART TWO.TONOLOGY.CHAPTER I .... LEVELS OF TONOLOGICAL INVESTIGATION

Prof. Firth in his article, "Technique of Semantics", to be found in one of the Transactions of the Philological Society, shows that meaning may be studied at different levels. The full meaning of a word is made up of the components of meaning at the different levels. The word he uses as an example is "bɔ:d". At the lexical level, the fact that the word is "bɔ:d" and neither "pɔ:d", "kɔ:d", "qɔ:d", nor "bɔ:t", "bɔ:k", nor "bi:d", "bu:d", "ba:d", is semantically significant. At the grammatical level, morphology and syntax account for further components of meaning; morphologically when "bɔ:d" is shown to be the verb "bored", and not either of the nouns "board" or "bawd", and syntactically when "bored" is shown to be "bored?" and not "bored!". Finally the full meaning of the word becomes apparent in the context of situation:-

Question: "Bored?".

Answer: "No, not at all; do go on".

Semantics is the study of meaning, a complex of components of meaning at different levels. The technique of this study is therefore to investigate meaning at these different levels in order to know the full final meaning.

In tone-languages, semantics involves tonological as well as phonological investigation, meaning being conveyed by speech sounds on the vertical plane (tones) as well as by speech sounds on the horizontal plane (phones); in other words, tone is a semantic feature. Tone is to a certain extent semantically significant in non-tone languages, but it operates only at the sentence level, whereas in tone languages tone operates at the syllable level, in Bantu languages both lexically and grammatically. Tone in Zulu is therefore a syllabic



semantic feature, significant both lexically and grammatically, as the following example shows:-

Umhlaḅa:

At the lexical level it is semantically significant that the tone of the root is LL and not H-LL, because this determines that the reference is to "aloe" and not to "earth". At the grammatical level it is morphologically significant that the tone of the prefix is LH and not HH, because this determines that the word is stable or "copulative"; and it is syntactically significant that the tone of the penultimate syllable is slightly falling because this indicates the final cadence. Finally at the sentence level as distinct from the syllable level (intonation as distinct from tone), tonological investigation shows that the word is umhlaḅa., and neither umhlaḅa! nor umhlaḅa?. Thus this word, a complex of phones and tones, phonally (umtāḅa), and tonally (-' \ -), means: "it is an aloe".

This example not only bears out for speech sounds on the vertical plane what Prof. Firth asserts for speech sounds on the horizontal plane, but also shows that the technique of tonology is the same as the technique of semantics: to investigate tone at the different levels in order to know not only its semantic significance, but the full tonal system functioning as "un système où tout se tient" (Meillet).

1. Lexical Level.

The study of tone at this level is important because root tones are as significant semantically as root phones, in determining the reference of the root. In fact tone may be the only distinguishing feature between two roots otherwise identical, as:- -hlāḅā (aloe) and -hlāḅā̄ (earth); -nyāngā (doctor) and -nyāngā̄ (moon); -ḅēlē (kaffir-corn) and -ḅēlē̄ (breast); and as:- -hlānz- (wash) and -hlānz- (vomit); -thānd- (love) and -thānd- (wind). Tone at this level is a matter for the Lexicon not for the Grammar. It is a lexical fact that a root is a complex of phones and tones arranged in a certain way, and no amount of grammatical analysis, either phonological or tonological,

2. Grammatical Level.

The study of tone at this level is important because tone is as significant grammatically as the processes of grammar itself: in fact tonal change is a morphological process operating on the vertical plane just as phonal change (i.e., inflection by prefixes and suffixes) is a morphological process operating on the horizontal plane, and tone-order (i.e. the succession of tones from word to word from the beginning to the end of the sentence) is a syntactical process operating <sup>on</sup> the vertical plane just as word-order is a syntactical process operating on the horizontal plane, so that grammatical behaviour is shown both tonally and phonally within words (morphology) and between words (syntax).

(a) Morphology. Tonal change and phonal change are the two main means of indicating grammatical function at the morphological level. These two processes usually operate concurrently:-

e.g. (i) The Extra Prefixes na- and nga-.

íkhehlā: ūmfānā nékhehlā 6ahlezi endleleni.

īntombi: īnsizwa nēntombi 6ayathandana.

īmpongo: īnqamā nēmpongo ziyalwa.

īmpandé: ūmuthi nēmpandé yawo uphephukile.

īndinā: inkosi i6usa abantu ngēnduna yayo.

īnka6i: uyayilima insimu ngēnka6i

īzinka6i: uyayilima insimu ngēzinka6i.

e.g. (ii) The Locatives.

īsihlālō: ēsihlālweni.

īthangā: ēthangeni. (pumpkin). īthangā: ēthangeni. (thigh).

īsikhovā: ēsikhoveni. (owl). īsikhovā: ēsikhoveni. (banana grove)

āmā6elē: āmā6elēni. (breasts). āmā6elē: ēmā6elēni. (kaffir-corn).

īsikhwamā: ēsikhwamēni.

But one process may operate without the other:

e.g. (i) There is no tonal difference between the verbal concords for the 3rd person (the Z-concords are exceptional), but on the other hand there is no phonal difference between the verbal concords for

the 2nd person singular and the 3rd person Class I singular, the distinction being indicated by tone only; although generally the grammatical function of "person" is indicated by both phonal and tonal change.

e.g. (ii) The formation of stable or "copulative"<sup>nouns</sup> is indicated by tonal change, which may or may not be accompanied by phonal change.

ááafána: ngááafána or ááafána.

ááafazi: ngááafazi or ááafazi.

índoda: yíndoda or índoda.

ínkomo: yínkomo or ínkomo.

inja: yinja or injá.

It is therefore not true to say that tonal change accompanies the processes of grammar. Tonal change is a morphological process in itself, of equal validity with phonal change. Vice versa: morphology causes the tonological processes of tonal displacement, tonal assimilation and tonal dissimilation, and other processes, in the same way that morphology causes the phonological processes of palatalization and nasalization.

(b) Syntax. Tone-order and word-order are the two main means of indicating grammatical function at the syntactical level, and these two processes always operate concurrently. In Zulu and in Bantu languages generally, where tonal change and phonal change are highly developed devices for showing grammatical function at the morphological level, the devices of tone-order and word-order for showing grammatical function at the syntactical level are less highly developed than in a language such as English where inflection plays a relatively small part. In this sentence, "the chief is laughing at the old woman", word-order is the only way of indicating the relationship between subject and object, so that if the word-order is reversed to read, "the old woman is laughing at the chief", the meaning is also reversed. But in these sentences, "inkosi iyasikleka isalukazi" and "isalukazi iyasikleka inkosi", word-order plays no such part, the relationship between subject and object

word-order simply indicates emphasis and is automatically accompanied by a reversal of the tone-order, the tonal down-drift now being from "isalukazi" to "inkosi" instead of from "inkosi" to "isalukazi", which accentuates the emphasis on "isalukazi"; or rather, the emphasis is due to word-order and tone-order together. Final cadence, the device which serves to mark the end of a statement sentence, clearly shows the concurrent operation of these two processes, for final cadence is a complex of penultimate vowel-lengthening (which marks final word-order), and penultimate tone-falling (which marks final tone-order).

Tone therefore is not only a lexical feature but also a grammatical feature operating morphologically (tonal behaviour within words) and syntactically (tonal behaviour between words). Whereas the former (tone at the lexical level) is a matter for the Lexicon, the latter (tone at the grammatical level) is a matter for the Grammar. The distinction between Lexicon and Grammar ~~is~~, to quote Henry Sweet, is that "the Lexicon deals with special facts and the Grammar deals with general facts", the former being facts that cannot be analysed and the latter being facts that can be analysed and described linguistically as parts of the total system. The distinction between grammatical facts on the horizontal plane and on the vertical plan has been defined as "Grammar" consisting of Morphology and Syntax, and "Tonal Grammar" consisting of tono-morphology and tono-syntax, a useful distinction to make, but it must always be borne in mind that Grammar and Tonal Grammar are parts of the same single system.

### 3. Intonation.

Although tone is always a feature of the syllable in tone-languages, intonation may nevertheless play a part. Intonation is a feature of the sentence, as the characteristic "downdrift" intonation of the Zulu sentence, but even so, intonation in tone-languages is determined at the syllable level, and therefore must be analysed at the syllable level.

The downdrift intonation of the Zulu sentence does not proceed simply with loss of breath, but by means of a series of definite downsteps which take place at the grammatical level of tonological investigation, within words (morphological level) and between words (syntactical level).

It may seem that intonation cannot be distinguished from tone, seeing that both operate syllabically, but that it can is shown by a consideration of the nature of intoning. Intoning is the use of an abnormally high level of pitch, together with the elimination of intonation. In non-tone languages this means the elimination of tone altogether, and the intoner maintains one pitch-level throughout. In tone languages this means the elimination of sentence tone but not of syllabic tone, so that the intoner must make the tonal distinctions, otherwise the speech will be meaningless. In both tone languages and non-tone languages, intoning should give the desired strange-sounding audibility, without loss of meaning. The art of sending messages by means of "talking drums" involves the elimination of intonation but not of tone, so the phenomenon of intoning is not unknown to the Bantu.

Just as tone is semantically significant both lexically and grammatically, so is intonation semantically significant to a certain extent. The characteristic intonation of the Zulu sentence is the gradual downdrift of tone. The plain statement sentence has normal intonation terminating in final cadence on the penultimate syllable. The interrogative sentence has raised intonation, due to a general <sup>heightening</sup> of pitch level, and there is no final cadence. The sarcastic sentence also has raised intonation, but even more so than the interrogative sentence, so much so that devocalization often occurs. The significance of this intonation is to reverse the meaning conveyed by normal intonation. Therefore interrogative and sarcastic intonation is simply the use of a higher level of pitch than that used in normal intonation. The basic "tune" of the sentence does not change therefore, so that intonation can only be

shown on paper by the full-stop for plain statements, the question-mark for interrogative sentences, and the exclamation-mark for sarcastic sentences.

ākayīthandi. He doesn't like it.

ākayīthandi? Doesn't he like it?

ākayīthandi! He doesn't half like it!

Although intonation is an extrinsic part of the sentence, as distinct from the intrinsic syllabic tone, it operates syllabically, tone being a feature of the syllable in tone languages. Tonological investigation must therefore take not<sup>e</sup> of intonation as well as of syllabic tone.

IMPORTANT NOTE:

It must be pointed out that this scheme outlined as "Levels of tonological investigation" is simply a convenient framework for descriptive linguistics. It is convenient to study syllabic tone at the lexical level and at the morphological and syntactical levels of grammar, and to regard intonation quite separately, but that is not to say that these distinctions exist per se in the language. It has already been noticed that intonation, a feature of the sentence, is determined and therefore must be analysed at the syllable level. Morphology and Syntax are linguistic distinctions rather than distinctions of the language itself, for morphology and syntax overlap and interlock just as tone and intonation.

Similarly the distinction between Lexicon ("special facts") and Grammar ("general facts") is simply a convenience for descriptive linguistics. Roots concern the Lexicon, and the process of prefixing concerns the Grammar. But take any noun, e.g. isihlalo: is this a matter for the Lexicon or for the Grammar? A matter for tonological investigation at the lexical level or at the morphological level? The process of prefixing noun prefixes to noun roots is a general and therefore grammatical fact. The prefixing of this noun prefix to this noun root is a special and therefore lexical fact, as each noun root can only take certain prefixes (unlike adjective and re-

-hlalo can only take isi- and in-; -hla6a can take three prefixes: i-, in-, and um-; hlo6o can take five prefixes: in-, isi-, u6u-, u-, and um-. This entity, noun prefix plus noun root, is therefore dealt with specifically in the Lexicon and generally in the Grammar. In Part III of this thesis it has been dealt with at the lexical level of tonological investigation, simply because it is convenient to do so, and then to deal with prefixing of a purely grammatical nature (as distinct from prefixing of a lexico-grammatical nature) at the morphological level of grammar.

This "overlapping and interlocking" between levels of tonological investigation may be said to operate from the higher levels to the lower levels. Thus intonation affects grammatical tone at both the morphological and the syntactical levels, for downstepping operates both within words and between words. Indirectly it also affects lexical tone, because of the downdrift of tonal level. <sup>and Morphology affects lexical tone -</sup> Syntax affects morphological tone, <sup>^</sup> The morphological processes of prefixing and suffixing have a great influence on lexical tones, so much so that high tones may become low and low tones may become high through prefixing, and syllables having lexical tones may become tonally neutral through suffixing.

However this may be, this scheme of "Levels of tonological investigation" is a convenient framework for linguistic analysis, and this is sufficient to justify its existence, which is hypothetical rather than categorical.

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## CHAPTER IV.

TONES AND TONEMES.A. TONES.

In "tone languages" Pike writes, "The basic difficulty in discerning the significant pitch-units lies in the relative nature of these pitches. The absolute pitch is not pertinent as such." This observation must above all be borne in mind when applying the principle of the toneme to Zulu tonetics, the object of which is to abstract those distinctions which are tonemically significant to the exclusion of those which are not. In this respect the following nine points are important, as they deal with the factors which account for non-distinctive tonal differences, i.e. tonal differences which are not tonemically significant. These factors operate at the different levels of tonological investigation:-

A1. At the sentence level, the factor of intonational downdrift causes a high tone at the end of a word to be lower in pitch than a high tone at the beginning of a word, and high tones near the end of a sentence to be considerably lower in pitch than high tones, or even than low tones, near the beginning of that sentence. Similarly a low tone at the beginning of a word is higher in pitch than a low tone at the end of a word, and low tones near the beginning of a sentence are higher in pitch than low tones, or even than high tones, near the end of that sentence. This factor may be described as the influence of intonation on tone.

A2. At the syntactical level, the factor of tonal context may cause low tones to be raised in pitch by a process of tonal assimilation, to a greater or lesser degree depending upon the speed of speech and upon the position in the sentence, unless the syllable has a voiced consonant, in which case it remains low in tone always.

e.g. *ángim'ónāngā umh'loóó umh'loóó wami uhāmbīle.*

*akalihloniphi ík'hēhlā. ík'hēhlā ligqoke isicoco.*



A3. At the syntactical level, the factor of final cadence causes the tones on the penultimate syllable in final position to fall slightly, whether they be high or low. This tone-falling is coincidental with vowel-lengthening, these two factors together comprising final cadence.

e.g. (umkhúba awuvunyelwa nguHulumeni.  
 { abantu basalonda umkhúba . [ - - \ - ] .  
 { ukhamba lugwele amasi  
 { intombazana iphethe ukhamba . [ / \ - ] .

(This tone-falling is too slight to warrant any special tone-mark).

A4. At the syntactical level (except duplicated high tones on tonally neutral syllables), the fact that two high tones cannot follow one another on the same level results in the second one becoming raised.

e.g. úcusó céntómbi Guyakhanya.  
íntómbi ívinúle kahlé.

But: ísifo sésifúba sígulala abantu abaningi. (duplicated high tone)

A5. At the morphological level (except duplicated high tones on tonally neutral syllables), the fact that two high tones cannot follow one another on the same level, results in the second one becoming raised.

e.g. ísifo sésifúba sígulala abantu abanungi.

But: écaleni nensimu kukhona ukhula. (duplicated high tone).

A6. At the morphological level, the factor of tonal context causes the low tones on tonally neutral syllables to be raised in pitch by a process of tonal assimilation. Tonally neutral syllables are syllables bearing no lexically or grammatically significant tone; in the absence of such specific determination they have low tones which become raised in pitch owing to tonal context, unless the syllables in question have voiced consonants, in which case they remain low in tone always.

e.g. ēmhláááthini kukhona izimbewu.

ēmasimīni kukhona ummbila.

īsithombē sēntombazána—, izithombē zēntombazána—.

NOTE: The influence of tonal context on a single tonally neutral syllable may cause the low tone to become a high tone, which is in effect an example of tonal duplication, a process which normally operates only at the syntactical level, as the example given under points 4 and 5 shows: isifo sesifuá— . At the morphological level however, it operates only as an extreme example of the process of tonal assimilation, and where it does operate, the following high tone becomes raised in pitch in accordance with the principle contained in point 5.

e.g. ōphāphēni or ōphāphēni.

ēnsimīni or ēnsimīni.

A7. At the morphological level, the process of tonal displacement from syllables that cannot bear high tones (or rather that prefer not to, because of voiced consonants) on to following low-tones syllables that can, gives rise to high-falling tones; or, in quick speech, simply to high-level tones.

e.g. isilonda siphuma ubuvu. izilonda— or izikonda—.

úphāphē lupheshulwa ngumoya. izimpāphē— or izimpāphē—.

Here the process is seen operating on root syllables, but it also operates on prefix syllables; in which case, owing to the shortness of the syllable, high-level tones rather than high-falling tones result.

e.g. intambo yomthwalo ikhunyiliwe. izintambo zomthwalo—.

īsiguúu sēsīhāmbi saphukile. iziguúu zēsīhāmbi—.

However, if the latter syllable also cannot bear a high tone, the former syllable is forced to bear its own high tone regardless of the voiced consonant, tonal displacement being impossible here. Owing to the influence of the voiced consonant (see point 9, but the fact applies here too, although the situation is usually avoided by the operation of tonal displacement), the high tone occurs as a rising-high tone.

e.g. imbazo iúkhali. izimbazo zúkhali.

Here the process is seen operating on root syllables, but it also operates on prefix syllables.

e.g.  $\bar{i}zinw\bar{e}l\bar{e}$   $\bar{z}\bar{e}z\bar{i}ng\bar{a}n\bar{e}$  zigcotshwe amafutha.  
 $\bar{i}zig\bar{u}b\bar{i}$   $\bar{z}\bar{e}z\bar{i}h\bar{a}mb\bar{i}$  zigcwele amasi.

NOTE: The influence of the inherent low tone of the extra independent prefixes, na-, nga-, kuna-, njenga-, nganga-, and of the "copulative" prefixes, is the same as the influence of the voiced consonant of the noun prefixes and the dependent prefixes (concord) of Noun Classes 8 and 10, viz.: either the displacement of the high tone on to the following syllable, or, if that is impossible, the initial lowering of the high tone resulting in a rising-high tone.

e.g.  $\bar{i}nd\bar{o}d\bar{a}$   $n\bar{e}mp\bar{a}h\bar{l}a$   $y\bar{a}y\bar{o}$ — ( <  $\bar{i}mp\bar{a}h\bar{l}a$  ).  
 $\bar{i}ns\bar{i}z\bar{w}a$   $n\bar{e}nt\bar{o}mb\bar{i}$   $y\bar{a}y\bar{o}$ — ( <  $\bar{i}nt\bar{o}mb\bar{i}$  ).  
 ngiyayibopha  $\bar{i}mp\bar{a}h\bar{l}a$   $ng\bar{e}nt\bar{a}mb\bar{o}$ . ( <  $\bar{i}nt\bar{a}mb\bar{o}$  ).  
 $\bar{i}nd\bar{o}d\bar{a}$   $n\bar{e}nd\bar{a}b\bar{a}$   $y\bar{a}y\bar{o}$ — (no displacement).  
 $\bar{i}sal\bar{u}k\bar{a}z\bar{i}$   $n\bar{e}ng\bar{a}n\bar{e}$   $y\bar{a}s\bar{o}$ — (no displacement).  
 $\bar{s}ula$   $\bar{i}z\bar{i}c\bar{a}th\bar{u}l\bar{o}$   $ng\bar{e}nd\bar{w}ang\bar{u}$ . (no displacement).  
 $y\bar{i}nc\bar{w}\bar{a}d\bar{i}$  ( <  $\bar{i}nc\bar{w}\bar{a}d\bar{i}$  ).  $y\bar{i}ny\bar{o}n\bar{i}$  ( <  $\bar{i}ny\bar{o}n\bar{i}$  ).  
 $y\bar{i}ng\bar{u}b\bar{o}$  (no displacement).  $y\bar{i}nd\bar{u}n\bar{a}$  (no displacement).

48. At the lexical level, the fact that two high tones cannot follow one another on the same level results in both becoming lowered to mid tones.

e.g.  $\bar{i}s\bar{i}f\bar{u}b\bar{a}$   $s\bar{a}m\bar{i}$   $s\bar{i}b\bar{u}h\bar{l}ung\bar{u}$ .  
 $\bar{u}mk\bar{h}os\bar{i}$   $\bar{u}zokuguj\bar{w}a$   $k\bar{u}s\bar{a}s\bar{a}$ .

49. At the lexical level (and to a certain extent at the morphological level), the factor of consonantal influence causes rising and falling tones. All voiced consonants (except l, m & n) have the effect of lowering the pitch of high tones, and all voiceless ejective consonants have the effect of raising the pitch of low tones. The latter is a tendency rather than the invariable rule of the former, a tendency that depends upon the speed of speech and upon the position in the sentence. Usually the high tone recovers from the effect of

the effect of the voiceless ejective consonant to occur as a falling tone.

e.g.  $\bar{i}ng\acute{a}ne$  isacathula.

$\bar{i}nd\acute{u}na$  iyabamemeza abantu.

$\bar{i}s\acute{i}g\acute{c}e\acute{b}\acute{a}$  sikhula emhlabathini ocebileyo.

$\bar{i}mp\grave{a}h\grave{a}$  inzima kakhulu. ( $\bar{i}mp\acute{a}h\acute{a}$ ).

$\bar{i}nt\acute{o}mb\acute{i}$  ivunule kahle. ( $\bar{i}nt\acute{o}mb\acute{i}$ ).

NOTE: The influence of voiced consonants.

A syllable having a voiced consonant prefers not to have a high tone. At the morphological level, where tonal grammar determines that the tone on such a syllable should be high, that high tone is displaced on to the following syllable, whether it be high-toned or low-toned, wherever possible. Where tonal displacement is impossible, i.e. where the following syllable also has a voiced consonant, the syllable in question is forced to bear its own high tone, which, because of the voiced consonant, occurs as a rising-high tone.

At the lexical level, it is still true that a syllable having a voiced consonant prefers not to have a high tone, but this cannot be so easily avoided by the operation of tonal displacement. The quality of tone is as significant semantically as the quality of consonant, so that it is no more possible to change the tone from high to low to suit the voiced consonant than to change the phone from voiced to unvoiced to suit the high tone. In other words, the lexical tone is an integral part of the root. This being so, each syllable must bear its own high tone, and if that syllable has a voiced consonant, the high tone occurs as a rising-high tone due to the influence of the voiced consonant.

To sum up, at the morphological level, tonal displacement is the way in which the coincidence of a high tone on a syllable

having a voiced consonant is avoided wherever possible, which is more often than not. At the lexical level, this process cannot operate, but its operation at the morphological level greatly affects the lexical tones, as when high tones on prefix syllables are displaced on to low-toned root syllables. The influence of voiced consonants is therefore of far-reaching effect, not only directly but also indirectly by way of tonal displacement.

These two sentences, one without and one with voiced consonants, show well how far-reaching the influence of voiced consonants may be:-

wacindezela abantu ngesikhundlā sakhe sobūdūnā.

6acindezela abantu ngezikhundlā za6ō zobūdūnā.

However, the factor of consonantal influence is of consequence at this stage only in so far as it is responsible for variations within the toneme, for these nine points account for non-distinctive tonal differences, changes from allotone to allotone, rather than from toneme to toneme.

#### B. TONEMES.

Bearing these nine points in mind, the tones of Zulu can be reduced to three tonemes: the high toneme, the low toneme, and the high-to-low falling toneme, which is always coincidental with a long or lengthened vowel. This toneme only occurs in a few places; on the contracted perfect suffix -e, on the interrogative particle -na, and on the penultimate syllable of nouns of a certain tone class in final position. It may however occur in other places not yet investigated, e.g. on the remote past tense verbal concord.

It might seem that there is a mid toneme in Zulu, as there are tones which appear to be members of such a toneme, but on closer investigation it becomes clear that these tones are either lowered-high tones (see points 1 (the influence of intonation), and

8), in which case they are allotones of the high toneme, or raised-low tones (see points 1 (the influence of intonation), 2 and 6), in which case they are allotones of the low toneme. Similarly the raised-high tones (see points 4 and 5) are allotones of the high toneme and do not constitute an extra-high toneme, as it might seem.

The following table accounts for the allotones of each toneme. In actual fact the range of sub-tonemic variation is far greater. Not only does each speaker have his own way of speaking, but his pronunciation varies according to his moods and the fluctuations of his physical state. This element of free variation is beyond tonemic theory, and is of no significance anyway to tonology. Only the tonologically significant variations within the toneme are given here:-

#### HIGH TONEME.

1. high-level tone--- the most representative member. --
2. lowered-high or mid tone --- see point 8. -
3. raised-high tone--- see points 4 and 5. +
4. falling-high tone--- see points 7 and 9. \
5. rising-high tone--- see point 9. / x /
6. slightly falling high tone--- see point 3.

Allotones 2 and 3 arise because of the rule that two high tones cannot follow one another on the same level. This rule operates differently at the lexical and morphological levels, at the former level giving rise to lowered-high tones and at the latter level to raised-high tones.

Allotones 4 and 5 arise because of consonantal influence, falling tones by tonal displacement and by direct influence of voiceless ejective consonants on low tones, and rising tones by direct influence of voiced consonants on high tones.

Allotone 6 arises as a result of final cadence; it is too slight a variation to warrant some special tone-mark in this thesis.

LOW TONEME.

1. low-level tone--- the most representative member. .
2. raised-low tone--- see points 2 and 6. ' .
3. slightly falling low tone--- see point 3.

Allotone 2 arises because of tonal assimilation, to a greater or lesser degree depending upon the speed of speech.

Allotone 3 arises as a result of final cadence; it is too slight a variation to warrant some special tone-mark in this thesis.

HIGH-TO-LOW FALLING TONEME.

1. high-to-low falling tone---- the normal allotone. //
2. rising high-to-low falling tone--- see point 9. ^

Not only are there these variations within the toneme, or changes from allotone to allotone, but there are also changes from toneme to toneme. The fact that each syllable (except tonally neutral syllables) bears a lexically or grammatically significant tone, does not mean that tone is a fixed feature of the syllable in the sense that a particular syllable always bears a particular toneme. A syllable normally low-toned may bear a high tone and vice versa, such changes usually being due either to the influence of certain consonants or to the influence of grammatical tone on lexical tone. These changes take place in the following circumstances:-

B1. At the syntactical level, the occurrence of nouns of a certain tone class (III--HH) in final position involves a change of toneme from high to high-to-low falling, which indicates that position.

e.g. <sup>ˈ</sup>isifúba <sup>ˈ</sup>sami <sup>ˈ</sup>síúhlungu.

ˈˈwángihlába <sup>ˈ</sup>isifúba.

B2. At the syntactical level, the influence of tonal context may cause low tones to be raised in pitch by a process of tonal assimilation to a greater or lesser degree depending upon the speed of speech and upon the position in the sentence; unless the syllable has a voiced consonant, in which case it remains low in tone always.

Being raised to a greater degree involves a change of toneme from low to high, whereas being raised to a lesser degree involves a change of allotone from the low-level allotone to the raised-low allotone. (See point A2). Note the consequent application of the rule that two high tones cannot follow one another on the same level, which operates with different results according as the syllable in question is either the first or the second, or both syllables.

- e.g.  $\overset{1}{u}m\bar{h}l\bar{o}o\bar{o} \bar{w}am\bar{i} \bar{u}h\bar{a}m\bar{b}i\bar{l}\bar{e}$ . (<  $\overset{1}{u}m\bar{h}l\bar{o}o\bar{o}$ )  
 $\overset{1}{i}k\bar{h}e\bar{h}l\bar{a} \bar{l}i\bar{g}q\bar{o}k\bar{e} \bar{i}s\bar{i}c\bar{o}c\bar{o}$ . (<  $\overset{1}{i}k\bar{h}e\bar{h}l\bar{a}$ ).  
 $\bar{u}m\bar{t}h\bar{w}\bar{a}l\bar{o} \bar{w}e\bar{z}i\bar{n}k\bar{u}n\bar{i} \bar{u}n\bar{z}i\bar{m}\bar{a}$ . (<  $\bar{u}m\bar{t}h\bar{w}\bar{a}l\bar{o}$ ). (rare-).

B3. At the syntactical level, the process of tonal duplication on initial tonally neutral syllables causes a change of toneme from low to high, if the determining toneme is itself high. Note the consequent operation of the principle contained in point A5.

- e.g.  $\bar{i}s\bar{i}f\bar{o} \bar{s}e\bar{s}i\bar{f}u\bar{b}\bar{a} \bar{s}i\bar{b}u\bar{l}\bar{a}l\bar{a} \bar{a}b\bar{a}n\bar{t}u \bar{a}b\bar{a}n\bar{i}ng\bar{i}$ . (the toneme is high).  
 $\bar{u}k\bar{u}g\bar{q}\bar{o}k\bar{a} \bar{k}w\bar{e}s\bar{i}c\bar{o}c\bar{o} \bar{k}u\bar{k}h\bar{o}m\bar{b}\bar{a} \bar{i}n\bar{d}\bar{o}d\bar{a}$ . (the toneme is low).  
 $\bar{w}\bar{a}n\bar{g}\bar{a}z\bar{i}s\bar{a} \bar{i}s\bar{i}b\bar{o}n\bar{g}\bar{o}$ . (the toneme is high).

B4. At the morphological level, the influence of tonal context on a single tonally neutral syllable may cause a change of toneme from low to high. This is an extreme example of the operation of the process of tonal assimilation, which normally causes a change of allotone rather than a change of toneme. (See point A6: Note). Note the consequent operation of the principle contained in point 5.

- e.g.  $\bar{u}p\bar{h}\bar{a}p\bar{h}\bar{e} - \bar{o}p\bar{h}\bar{a}p\bar{h}\bar{e}n\bar{i}$  (change of allotone) or  $\bar{o}p\bar{h}\bar{a}p\bar{h}\bar{e}n\bar{i}$   
 (change of toneme)  
 $\bar{i}n\bar{s}i\bar{m}\bar{u} - \bar{e}n\bar{s}i\bar{m}\bar{i}n\bar{i}$  (change of allotone) or  $\bar{e}n\bar{s}i\bar{m}\bar{i}n\bar{i}$   
 (change of toneme)

B5. At the morphological level, the influence of the voiced consonant of the noun prefixes and the dependent prefixes (concord) of Noun Classes 8 and 10, may cause a change of toneme from high to low and the consequent tonal displacement cause a change ~~a change~~ of toneme from low to high. Similarly the influence of the inherent low tone of the extra independent prefixes, na-, nga-, etc., and the



"copulative" prefixes, may cause a change of toneme from high to low and the consequent tonal displacement cause a change of toneme from low to high.

e.g. isilonda - izilonda. uphaphē - izimpaphē. (noun prefixes).  
 { intambo yomthwalo ikhunyuliwe. (dependent prefixes).  
 { izintambo zomthwalo zikhunyuliwe.  
 { umthwalo unzima kakhulu. (independent prefixes).  
 { inqola nomthwalo wayo inzima kakhulu. (~~independent prefixes~~).  
 { intambo ikhunyuliwe. (independent prefixes).  
 { ngiyayibopha impahla ngentambo.  
 { isithombe sentombazana sihle.  
 { yisithombe sentombazana. ("copulative" prefixes).  
 { umkhuba awuvunjelwa nguHulumeni.  
 { ngumkhuba wabantu.

B6. At the lexical level, the fact that two high tones cannot follow one another on the same level causes the toneme of the final syllable of nouns of a certain tone class (II--LH) to change from high to low, when the toneme of the first syllable changes from low to high (the high-level allotone) because of tonal displacement. When the toneme of the first syllable changes from low to high (the high-falling allotone), there is no change of the toneme of the final syllable, because the two high tones are not "on the same level". The determining factor between these two allotones is simply the speed of speech: the high-level allotone is used in quick speech and the high-falling allotone is used in slow speech.

e.g. uphaphē: izimpaphē (slow speech) or izimpaphe (quick speech).  
incwadi: izincwadi (slow speech) or izincwadi (quick speech).

A similar situation arises because of tonal assimilation, but this depends upon the speed of speech and upon the position in the sentence, and is therefore rarer.

e.g. uúso ǀentombi ǀuyakhanya. (slow speech).  
uúso ǀentombi ǀuyahlanya (quick speech).  
ǀkhehla ǀigqoke ǀisicoco. (slow speech).

B7. At the lexical level, the influence of voiceless ejective consonants may cause the toneme to change from low to high (the high-falling allotone), and the influence of voiced consonants may cause the toneme to change from high to low, although it is usual for the change to be one of allotone (from the high-level allotone to the rising-high allotone) rather than one of toneme. In fact this change of toneme only occurs with nouns of a certain tone class (III—HH) as spoken by men. Because of the greater flexibility of the female voice, there is no change of toneme with these nouns as spoken by women, but simply a change of allotone. (See point 9).

e.g.  $\bar{i}mp\bar{a}h\bar{l}a \bar{i}nzima kakh\bar{u}l\bar{u}$ . (< $\bar{i}mp\bar{a}h\bar{l}a$ ).

$\bar{i}ntomb\bar{i} \bar{i}vinul\bar{e} kah\bar{l}\bar{e}$ . (< $\bar{i}ntomb\bar{i}$ ).

$\bar{i}mv\bar{u}l\bar{a} \bar{y}avela eningizimu$ . (female voice).

$\bar{i}mv\bar{u}l\bar{a} \bar{y}avela eningizimu$ . (male voice).

$\bar{u}m\bar{d}l\bar{a}l\bar{o} \bar{w}eb\bar{o}l\bar{a} uzokuqala ntambama$ . (female voice).

$\bar{u}m\bar{d}l\bar{a}l\bar{o} \bar{w}eb\bar{o}l\bar{a} uzokuqala ntambama$ . (male voice).

## CHAPTER III.

tone patterns.

Just as the basic unit in phonology is the phoneme, so the basic unit in tonology is the toneme. And just as the basis of Grammar is the grammatical class of "part of speech", which is determined by phonology and by grammatical behaviour on the horizontal plane, so the basis of Tonal Grammar is the tonal class, which is determined by tonology and by grammatical behaviour on the vertical plane, or simply by tonal behaviour. The grammatical class is characterised by a particular phonological shape and by particular possibilities of grammatical behaviour. The Noun is characterised by such roots as -hlo6o, -phaphe, -fula, or -ntu, -tsha, -thi, symbolised as CVCV and CV, and by characteristic nominal behaviour, e.g. the extra prefixes: na-, nga-, kuna-, njenga-, etc.; the "copulative" prefixes; the locative and diminutive and augmentative suffixes. The Verb is characterised by such roots as -hlal-, -theng-, -khoth-, or -kh-, -mb-, -dl-, symbolised as CVC and C, and by characteristic verbal behaviour, e.g. the stem extensions: -el-, -is-, -an-, etc.; the infixes: -nga-, -sa-, and the objectival concords. In the same way the tonal class is characterised by a particular tonal shape or tone pattern and by particular possibilities of tonal behaviour. The tone pattern is therefore the all-important unit in tonal grammar, rather than the toneme, although, just as Grammar presupposes Phonemics and Phonology, Tonal Grammar presupposes Tonemics and Tonology, for the tone pattern is an association of tonemes; and being so it is greatly affected in shape by the changes from allotone to allotone within the toneme and by the changes from toneme to toneme.

Prof. Doke's study in the relevant chapters of "The Phonetics of the Zulu Language" is tonetic and concerns tones and tonal shapes ("tonal nuclei"), but this study is tonological and

concerns tonemes and tone patterns. By the application of the principle of the toneme, the tones of Zulu may be reduced to three tonemes, and by the application of this same principle, the wide variety of tonal shapes may be reduced to a specific number of tone patterns. The tone pattern is therefore just as much an abstraction as the toneme. To say that the tone pattern of a certain noun is made up of an association of two low tonemes is certainly not to say that the tonal shape of that noun is always LL. That tonal shape may be the most representative member of the tone pattern, but each tone pattern has many variations, just as each toneme has many variations or allotones. The tone pattern is simply an abstraction by means of which a word may be classified into a particular tonal class characterised by that tone pattern, and by particular tonal behaviour.

The tone pattern being an association of tonemes, the possibilities are limited by the two tonemes of Zulu: High and Low. (The High-to-low falling toneme occurs comparatively rarely, and plays no active part tonologically anyway). Thus for monosyllabic nouns there are only two possibilities: H and L. For disyllabic nouns there are four possibilities: LL, LH, HH, HL, and for ~~the~~-syllabic nouns eight possibilities. However the classification of nouns into tone classes is simpler than it may seem, for there are only four tone classes of nouns, characterised by the tone patterns for disyllabic nouns; in other words, the tone class of a noun is determined by the tone pattern on the final two syllables of the uninflected noun. The final two syllables of a monosyllabic noun include part of the prefix, and of a trisyllabic noun exclude the first syllable of the root, the tone of which is not significant to its classification. The tone pattern on the final two syllables of the uninflected noun determines the tone class, and this in turn determines the tonal behaviour of that noun. The importance of the tone pattern is therefore fundamental to tonal grammar ---

it is in fact the basic unit.

The four tone-classes of nouns are as follows:-

	TONE CLASS I	having tone pattern	LL.
"	II	"	LH.
"	III	"	HH.
"	IV	"	HL.

The constituent tonemes of these tone patterns are subject to the influence of the factors contained in the nine points A: (allotonic variations), and also to the influence of the factors contained in the seven points B: (tonemic variations). There are therefore changes from tonal shape to tonal shape within the tone pattern just as there are changes from allotone to allotone within the toneme. The following table accounts for the variations in tonal shape of each tone pattern:-

TONE PATTERN LL.

[· ·] - the most representative tonal shape.

Change of allotone:-

[· ' ] -see point A2: the factor of tonal context (slow speech).

Change of toneme:-

[τ τ] -see point B2: the factor of tonal context (quick speech),  
and point A8: two high tones on the same level.

[ \ . ] -see points A7 and B5: the factor of tonal displacement (slow speech).

" -see points A9 and B7: the factor of consonantal influence.

[ - . ] -see points A7 and B5: the factor of tonal displacement (quick speech).

TONE PATTERN LH.

[· -] -the most representative tonal shape.

Change of allotone:-

[· ^ ] -see point A9: the factor of consonantal influence.

[· - ] -see point A2: the factor of tonal context (slow speech).

Change of toneme:-

[ - . ] -see point B2: the factor of tonal context (quick speech),  
and point B6: two high tones on the same level.

[ \ - ] -see points A7 and B5: the factor of tonal displacement (slow speech).

" -see points A9 and B7: the factor of consonantal influence.

- [ - . ] -see points A7 and B5: the factor of tonal displacement (quick speech),  
and point B6: two high tones on the same level.

-tone pattern HH. A (initial position).

- [ ˘ ˘ ] -the most representative tonal shape. (See point A8:)

Change of allotone:-

- [ ˘ ˘ ] -see points A9 and B7: the factor of consonantal influence,  
with voicing on the first syllable (female voice).

- [ ˘ ˘ ] -see points A9 and B7: ditto, with voicing on both syllables  
(female voice).

- [ ˘ ˘ ] -see points A9 and B7: ditto, with voicing on the second syllable  
(male and female voices).

Change of toneme:-

- [ . - ] -see points A9 and B7: the factor of consonantal influence,  
with voicing on the first syllable (male voice).

- [ . ˘ ] -see points A9 and B7: ditto, with voicing on both syllables  
(male voice).

- [ . - ] -see footnote at end of chapter.

tone pattern HH. B (final position).

- [ \ . ] -the most representative tonal shape. (See point B1.)

Change of allotone:-

- [ \ . ] -see point A9: the factor of consonantal influence.

tone pattern HL.

- [ - . ] -the most representative tonal shape.

Change of allotone:-

- [ / . ] -see point A9: the factor of consonantal influence.

- [ - . ] -see point A2: the factor of tonal context (slow speech).

~~Change of toneme:-~~

- ~~[ \ . ] -see point A9: the factor of consonantal influence.~~

~~tone pattern HL.~~

- ~~[ - . ] -the most representative tonal shape.~~

~~Change of allotone:-~~

- ~~[ / . ] -see point A9: the factor of consonantal influence.~~

- ~~[ - . ] -see point A2: the factor of tonal context (slow speech).~~

~~Change of toneme:-~~

### Change of toneme :-

[ $\tau$   $\tau$ ] -see point B2: the factor of tonal context (quick speech),  
and point A8: two high tones on the same level. (rare).

These are not all the variations to be found. The factors of final cadence (point A3) and of consonantal influence (point A9) give rise to more variations than are shown here, not to mention the factor of intonational downdrift (point A1). However this table accounts for the main variations, and certainly shows that the tone pattern, like the toneme, is not an absolute entity. It is an abstraction representing a group or family of tonal shapes, the most commonly occurring member (i.e. the most representative tonal shape) being the symbol of that abstraction.

As for verbs, no research has as yet been carried out to find out the number of tone classes into which they are classified, but it may be that verbs and other parts of speech can be classified into these same four tone classes. If so, it could be said that the classifications of tonal grammar cut across the classifications (parts of speech) of phonal grammar, this complex of <sup>a</sup>grammatical behaviour on the the two planes, horizontal (phonal) and vertical (tonal), comprising the Grammar of Zulu.

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## CHAPTER IV.

THE METAPHYSICS OF ZULU TONOLOGY.

The principle of the polarity of the tonal compass is fundamental to tonology, as it is the metaphysical basis of the tonal system; the unifying factor which makes Meillet's well-known statement as true for this aspect of the language as it is for the language as a whole. An understanding of this principle clarifies what has been said in Part II and illuminates what is to be said in Part III.

The tonal compass of Zulu has two poles, the high pole and the low pole, the former being the High toneme consisting of a group of high tones, and the latter being the Low toneme consisting of a group of low tones. The High-to-Low Falling toneme embraces the full range of the tonal compass, and therefore plays no active part tonologically, being outside the system of balance between high pole and low pole. The high pole is the magnetic pole, and tonal attraction is always from low to high for this reason. Thus low tones in a context of high tones come under this magnetic influence and become raised (see points A2 and 6), sometimes even becoming high tones (see points B2 and 4), but high tones never become lowered because of the influence of low tones. The raising of low tones (see points A2 and B2 (syntax) and A6 and B4 (morphology)) is due to the natural magnetic attraction from low to high, but the lowering of high tones at the lexical level (see points A8 (mid tones) and B6) and the raising of high tones at the grammatical level (see points A4 (syntax) and A5 (morphology)), is due to the natural magnetic repulsion between tones of the high pole, which explains why it is that two high tones cannot follow one another on the same level.



Tones of the high magnetic pole are altogether more dynamic than tones of the low pole. Low tones frequently disappear owing to the superimposition of high tones, as in tonal duplication (see point B3) and in tonal displacement (see point B5), but high tones never disappear owing to the superimposition of low tones: either the high tone is displaced on to the following syllable, or, if that is not possible, a rising-high tone results, i.e. the influence of the low tone is simply to lower the high tone initially. There is only one instance of the disappearance of a high tone (see point B6),\* but this is due not to the superimposition of a low tone, but to the repulsion between tones of the high magnetic pole. In this instance tonal displacement causes the tone on the first syllable of the root to change from low to high, and the high tone on the second syllable automatically becomes low, as two high tones cannot follow one another on the same level. This is to be compared with the tone pattern HH, which is essentially (— —) but actually ( ? ), for the same reason (see point A8). Of course there is no repulsion between tones of the low pole as it is not magnetic, and there is therefore no reason why two low tones cannot follow one another on the same level.

Consonantal influence operates in accordance with this principle of polarity, notwithstanding the fact that it is an influence of a different order altogether: not the influence of high tones on low tones, and of low tones on high tones, or of high tones on one another, but the influence of phones on tones, voiceless ejective consonants on low tones and voiced consonants (except l, m, n)

on high tones. The former influence causes a change of toneme from low to high, but the latter influence only causes a change of allotone within the toneme (see point B7). There is only one instance of the disappearance of a high tone due to consonantal influence: nouns of Tone Class III, in initial position, with voiced consonants, as spoken by a male voice. This again illustrates the fact that the tones of the high magnetic pole are more dynamic than the tones of the low pole.

Thus this principle of polarity, with its concept of the tonal compass having two poles, the high magnetic pole and the low pole, is the metaphysics of Zulu tonology. With regard to the changes from allotone to allotone, this principle explains the existence of raised-low tones (see points A2 and 6), and of raised (see points A4 and 5) and lowered (see point A8) high tones. With regard to the changes from toneme to toneme, this principle explains why changes from low to high are so frequent (see points B2, 3, 4, 5), and changes from high to low so rare, only one instance in fact (see point B6)\*; apart from the special case of nouns of Tone Class III, in initial position, with voiced consonants, as spoken by a male voice. Here again, with regard to consonantal influence, an understanding of this principle considerably clarifies the fact (see points A7 and 9 and B7), explaining why the influence of voiced consonants on high tones is so different from the influence of voiceless ejective consonants on low tones, and, owing to tonal displacement, so much more far-reaching.

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\* Nouns of Tone Class IIIA, regardless of whether the consonants are voiced or voiceless, or the voice male or female, when in Noun Classes 9 and 10, display the disappearance of the high tone on the first syllable of the root. The essential tones of these nouns: *izinkabi*, *izimbula*, *izimpande*, *izindawo*, *izifuba*, are HL. HH. The tone pattern HH is normally realised in speech as (˥˥), due to the principle of polarity, but here as (-). This is not in any way due to the influence of the voiced consonant of the prefix, because the same change occurs where the previous syllable, whether with or without a voiced consonant, is low in tone, as with trisyllabic nouns: *umhlabathi* and *umsebenzi*. Here the essential tones are HLL. HH, realised in speech as (-...-). It seems that a mid tone often

PART THREE.TONAL GRAMMAR OF NOUNS.INTRODUCTION:

Nouns are classified into tone classes according to the tone pattern on the final two syllables of the uninflected noun. The tonal compass with its two poles, the High Toneme and the Low Toneme, gives rise to four possibilities of tone pattern, so that there are four tone classes of nouns:-

Tone Class I, having tone pattern LL.

" II, " LH.

" III, " HH.

" IV, " HL.

To arrive at the essential tone pattern, it is necessary to eliminate the influence of the factors enumerated under "TONES" (which give rise to allotonic or sub-tonemic variations) & under "TONEMES" (which give rise to tonemic variations). The — influence of certain consonants is particularly disturbing, giving rise to many and great variations in tonal shape. The factor of final cadence can be avoided altogether by considering the noun in any position other than final; and here it should be noted that the tone pattern for Tone Class III is HH in all positions except final position, when it is H-LL. Otherwise the tone patterns are as given above in all positions, final cadence giving rise to slight variations in tonal shape but not a complete change. Only in the absence of all these influences are the tone patterns given above realised in speech as the tonal shapes symbolising them: LL, LH, HH, HL.

The disyllabic noun is the basic variety of noun, and the other varieties fit into the pattern of tonal behaviour of these nouns. Owing to the lesser or greater number of syllables of monosyllabic

and trisyllabic nouns, there are adaptations to the pattern of disyllabic nouns, but these adaptations in no way affect the pattern of tonal behaviour itself, which is determined by the rules of tonal grammar operating according to the tonological principles obtaining in the language. These rules and processes of tonal grammar apply to all nouns, and probably to all verbs and other parts of speech as well, but this has not yet been investigated.

The tonal grammar of disyllabic nouns is set out first, the most common and basic variety of noun.

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## CHAPTER I.

DISYLLABIC NOUNS.A. LEXICAL LEVEL.1. Noun Roots.

The final two syllables of the uninflected disyllabic noun comprise the root, and the tone class is therefore determined by the tone pattern of the root. This is a matter for the Lexicon rather than the Grammar, but here are some examples:-

I	II	III	IV
$\bar{i}n\text{-}n\bar{y}a\bar{ng}a$ (doctor)	$\bar{i}n\text{-}n\bar{y}a\bar{ng}a$ (moon)	$\bar{u}m\text{-}k\bar{h}o\bar{s}i$ (feast)	$\bar{u}m\text{-}f\bar{a}n\bar{a}$ (boy)
$\acute{i}\text{-}t\bar{h}a\bar{ng}a$ (pumpkin)	$\acute{i}\text{-}t\bar{h}a\bar{ng}a$ (thigh)	$\bar{u}m\text{-}s\bar{i}z\bar{i}$ (powder)	$\bar{u}m\text{-}s\bar{i}z\bar{i}$ (helper)
	$\bar{i}si\text{-}k\bar{h}o\bar{v}a$ (banana-grove)	$\bar{i}si\text{-}k\bar{h}o\bar{v}a$ (owl)	
	$\bar{a}m\bar{a}\text{-}\acute{c}\bar{a}l\bar{e}$ (kaffir-corn)		$\bar{a}m\bar{a}\text{-}\acute{c}\bar{e}l\bar{e}$ (breasts)
$\bar{u}m\text{-}h\bar{l}a\acute{a}$ (aloe)		$\bar{u}m\text{-}h\bar{l}a\acute{a}$ (earth)	
$\bar{u}m\text{-}\acute{c}\bar{a}l\bar{a}$ (shin)		$\bar{u}m\text{-}\acute{c}\bar{a}l\bar{a}$ (colour)	
$\bar{u}b\bar{u}\text{-}n\bar{g}a\bar{n}e$ (friendship)			$\bar{u}b\bar{u}\text{-}n\bar{g}a\bar{n}e$ (childhood)
$\bar{i}n\text{-}n\bar{t}u\bar{l}e$ (want)			$\bar{i}n\text{-}n\bar{t}u\bar{l}e$ (lizard)
$\bar{u}m\text{-}h\bar{l}o\acute{c}e$ (friend)	$\acute{i}\text{-}k\bar{h}e\bar{h}l\bar{a}$ (old man)	$\bar{u}m\text{-}k\bar{h}o\bar{n}o$ (arm)	$\bar{u}m\text{-}k\bar{h}o\bar{n}o$ (spear)
$\bar{i}si\text{-}l\bar{o}n\bar{d}a$ (sore)	$\acute{u}\text{-}p\bar{h}\bar{a}p\bar{h}e$ (feather)	$\acute{i}\text{-}h\bar{l}\bar{a}t\bar{h}i$ (forest)	$\bar{u}m\text{-}k\bar{h}u\acute{c}a$ (custom)
$\bar{i}n\text{-}n\bar{t}\bar{a}m\bar{b}o$ (string)	$\bar{i}n\text{-}n\bar{c}w\bar{a}d\bar{i}$ (letter)	$\bar{a}m\bar{a}\text{-}f\bar{u}t\bar{h}\bar{a}$ (fat)	$\acute{i}\text{-}g\bar{u}l\bar{a}$ (calabash)
$\bar{i}m\text{-}m\bar{f}e\bar{n}e$ (baboon)	$\bar{i}n\text{-}n\bar{t}o\bar{m}b\bar{i}$ (girl)	$\bar{i}n\text{-}n\bar{k}\bar{a}\acute{c}i$ (ox)	$\bar{i}n\text{-}n\bar{q}o\bar{l}\bar{a}$ (wagon)
		$\bar{i}m\text{-}m\bar{v}u\bar{l}\bar{a}$ (rain)	$\bar{i}n\text{-}n\bar{a}u\bar{t}\bar{a}$ (officer)
		$\bar{u}m\text{-}z\bar{i}m\bar{b}\bar{a}$ (body)	$\bar{i}n\text{-}n\bar{g}\bar{a}n\bar{e}$ (child)

## 2. Noun prefixes.

Noun prefixes have no inherent tones, in fact no tones at all apart from the noun roots in conjunction with which they occur; the tones are determined grammatically, according to the principle of polarity. Unlike root tones, which are lexical facts to be found in the Lexicon, prefix tones are the concern of the Grammar.\*

Seeing that the tones of the noun prefix depend upon the tones of the root, being grammatically determined by a process of tonal adaption to the tone of the first syllable of the root, it is useful to make the distinction between "high tone nouns" (nouns of Tone Classes III and IV) where the tone on that syllable is high, and "low tone nouns" (nouns of Tone Classes I and II) where the tone on that syllable is low.

(b) Double Prefixes. (Classes 1, 2, 2(a), 3, 4, 5, 6, 7, 11, 14, 15, 18,).

The general rule is that the prefix must have a high tone on one of its syllables, the other syllable being tonally neutral, and this rule operates by a process of tonal adaption to the tone of the first syllable of the root. It is the sine qua non of Zulu tonology that all rules and processes operate in accordance with the basic metaphysical principle of polarity, and it is therefore to be expected that the prefix tones should be HL with high tone nouns and DH with low tone nouns.

This is so with nouns of Tone Class IV, the high tone falling on the first syllable of the prefix and the second syllable being tonally neutral and therefore low in tone, actually a raised-low tone owing to the factor of tonal context.

e.g. *ūmfāna*(boy), *ānābēle* (breasts), *ūbūngāne* (childhood).

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\* Notwithstanding the fact that prefix tones are grammatically determined noun prefixes are dealt with at the lexical level because it is more convenient to do so. The main reason is that the noun root cannot occur without the noun prefix, the noun being an entity composed of prefix plus root, to be dealt with in the same place. The prefixes considered at the grammatical level are quite different, being prefixes to the noun as distinct from prefixes to the noun root, the former to be dealt with

The long vowel prefixes of Classes 5 and 11 and 2(a), follow the same pattern of behaviour.

e.g. full form:  $\bar{i}i\bar{c}e\bar{6}o$ . short form:  $\bar{i}i\bar{c}e\bar{6}o$  or  $\bar{i}c\bar{e}6o$ .  
 full form:  $\bar{i}i\bar{q}h\bar{a}w\bar{e}$ . short form:  $\bar{i}i\bar{q}h\bar{a}w\bar{e}$  or  $\bar{i}q\bar{h}a\bar{w}e$ .  
 full form:  $\bar{u}u\bar{n}w\bar{e}l\bar{e}$ . short form:  $\bar{u}u\bar{n}w\bar{e}l\bar{e}$  or  $\bar{u}n\bar{w}e\bar{l}e$ .  
 $\bar{o}o\bar{g}o\bar{g}o$  or  $\bar{o}g\bar{o}g\bar{o}$ . (ancestors).

Similarly with nouns of Tone Classes I and II, the high tone falling on the second syllable of the prefix and the first syllable being tonally neutral and therefore low in tone, actually a raised-low tone owing to the factor of downdrift intonation.

e.g.  $\bar{u}m\bar{h}l\bar{o}6o$  (friend),  $\bar{u}6\bar{u}ng\bar{a}m\bar{e}$  (friendship).  
 $\bar{a}m\bar{a}6\bar{a}l\bar{e}$  (kaffir-corn),  $\bar{i}s\bar{i}k\bar{h}o\bar{v}\bar{a}$  (banana-grove).

The long vowel prefixes of Classes 5 and 11 and 2(a), follow the same pattern of behaviour.

e.g. full form:  $\bar{i}l\bar{i}g\bar{e}j\bar{a}$ . short form:  $\bar{i}l\bar{i}g\bar{e}j\bar{a}$  or  $\bar{i}g\bar{e}j\bar{a}$ .  
 full form:  $\bar{u}l\bar{u}p\bar{h}o\bar{n}d\bar{o}$ . short form:  $\bar{u}p\bar{h}o\bar{n}d\bar{o}$  or  $\bar{u}p\bar{h}o\bar{n}d\bar{o}$ .  
 full form:  $\bar{i}l\bar{i}k\bar{h}e\bar{h}l\bar{a}$ . short form:  $\bar{i}k\bar{h}e\bar{h}l\bar{a}$  or  $\bar{i}k\bar{h}e\bar{h}l\bar{a}$ .  
 full form:  $\bar{u}l\bar{u}p\bar{h}a\bar{p}\bar{h}\bar{e}$ . short form:  $\bar{u}p\bar{h}a\bar{p}\bar{h}\bar{e}$  or  $\bar{u}p\bar{h}a\bar{p}\bar{h}\bar{e}$ .  
 $\bar{o}o\bar{6}\bar{a}6\bar{a}$  or  $\bar{o}6\bar{a}6\bar{a}$ .  $\bar{o}o\bar{m}\bar{a}m\bar{e}$  or  $\bar{o}m\bar{a}m\bar{e}$ .

However, the first syllable of the prefix is not always low in tone; in any position other than initial, it is subject to tonal duplication, being tonally neutral, and may therefore be low or raised-low, high or lowered-high, in tone.

e.g.  $\bar{a}6\bar{a}k\bar{w}\bar{a}Z\bar{u}l\bar{u} \bar{6}\bar{a}l\bar{i}m\bar{a} \bar{a}m\bar{a}6\bar{a}l\bar{e}$ . (The Zulus cultivate kaffir-corn).  
 $\bar{a}6\bar{a}k\bar{w}\bar{a}Z\bar{u}l\bar{u} \bar{6}\bar{a}l\bar{i}m\bar{a} \bar{K}\bar{a}h\bar{l}\bar{e} \bar{a}m\bar{a}6\bar{a}l\bar{e}$ . (The Zulus cultivate kaffir-corn well).

With nouns of Tone Class III, the prefix tones differ according as the noun is in final position or not. In final position the tone pattern is H-LL and the prefix tones according to the principle of polarity, are high on the first syllable and low on the second syllable, being tonally neutral. In any position other than final, the tone pattern is HH, but the prefix tones are not HL as for high tone nouns, but LH as for low tone nouns: i.e. they are high on the

second syllable and low on first syllable, being tonally neutral. This is presumably because the tone pattern is realised in speech as mid tones, but it is nevertheless an exception to the regular operation of the process of tonal adaptation according to the principle of polarity.

e.g. **B** (final position).

umkhosi (fest), isikhova (owl), umzimba (body).

**B** (initial position).

umkhosi (feast), isikhova (owl), umzimba (body). (male voice)  
umzimba (body). (female voice).

The long vowel prefixes of Classes 5 and 11 and 2(a), follow the same pattern of behaviour.

e.g. **B** (final position).

full form: ilihlathi. short form: iihlathi. or ihlathi.  
full form: ulusuku. short form: uusuku or usuku

**B** (initial position).

full form: ilihlathi. short form: iihlathi or ihlathi.  
full form: ulusuku. short form: uusuku or usuku.

The first syllable of the prefix is not always low in tone; in any position other than initial (also other than final, of course), it is subject to tonal duplication, being tonally neutral.

e.g. abakwaZulu bayaguba umkhosi namhlanje. (The Zulus are observing the feast today).

abakwa Zulu bayaguba kahle umkhosi namhlanje. (The Zulus are observing the feast well today).

With regard to the long vowel prefixes, it should be noted that in quick speech the prefix is often contracted to a single syllable, in which case the tone is no longer rising or falling but simply high. The downstep which occurs between the first syllable of the prefix and the first syllable of the root with nouns of Tone Class IV and of Tone Class IIIB, because of the intervening low tone, still occurs although there is now no low tone to mark it.



e.g.  $\bar{v} \bar{v} \bar{v}$   
 iqhawé libulale ibubési.  
 igeja laphukile.  
 ikhehla ligqoke isicoco.  
 ihlathi ligwele izilwanyana.  
 indoda ihamba icinga ihlathi.

To sum up, noun prefixes have no inherent tones, the tones being determined grammatically according to the principle of polarity. The high tone, being a member of the High Toneme, the magnetic pole of the tonal compass, is the dynamic grammatically significant tone, the low tone on the tonally neutral syllable being subject to various influences as the following table shows:-

Double Prefix Tones.

A. Full form of prefix.

Low tone nouns:-

I and II. LH, realised in speech as ( ' - ) in initial position due to the influence of downdrift intonation, and as ( . - ) or ( - - ) or ( - + ) in any other position due to the influence of tonal duplication.

High tone nouns:-

III A. Not HL but LH. See as for Tone Classes I and II.

IV and IIIB. HL, realised in speech as ( - ' ) due to the influence of tonal context.

B. Short form of prefix. (Classes 5 and 11 and 2(a) only).

Low tone nouns:-

I. and II. Basically LH, but realised in speech as ( / ) in slow speech and as ( - ) in quick speech.

High tone nouns:-

IIIA. See as for Tone Classes I and II.

IV and IIIB. Basically HL, but realised in speech as ( \ ) in slow speech and as ( - ) in quick speech, still followed by the tonal downstep.

(b) Single Prefixes. (Classes 1 (a), 9, 16.).

The general rule applies, but seeing that the prefix consists

of one syllable only, the tone on that syllable is always high. With nouns of Tone Class IV and of Tone Class IIIB the downstep between prefix and root still occurs although there is now no low tone to mark it; and similarly with nouns of Tone Classes I and II where the tone on the first syllable of the root has been raised from low to high owing to the influence of ejective consonants. (See point A9).

e.g. I.  $\bar{i}n\bar{a}b\bar{a}$ .  $\bar{i}n\bar{t}\bar{a}m\bar{b}o$  or  $\bar{i}n\bar{t}\bar{a}m\bar{b}o$ .  $\bar{u}n\bar{i}n\bar{a}$ .  $\bar{p}\bar{h}\bar{e}z\bar{u}l\bar{u}$ .

II.  $\bar{i}n\bar{d}l\bar{e}b\bar{e}$ .  $\bar{i}n\bar{t}\bar{o}m\bar{b}\bar{i}$  or  $\bar{i}n\bar{t}\bar{o}m\bar{b}\bar{i}$ .  $\bar{u}y\bar{i}s\bar{e}$ .  $\bar{p}\bar{h}\bar{a}k\bar{a}t\bar{h}\bar{i}$ .

III.  $\bar{i}n\bar{k}\bar{a}b\bar{i}$  and  $\bar{i}m\bar{v}\bar{u}l\bar{a}$  (A).  $\bar{i}n\bar{k}\bar{a}b\bar{i}$  and  $\bar{i}m\bar{v}\bar{u}l\bar{a}$  (B).

IV.  $\bar{i}m\bar{p}\bar{o}n\bar{g}o$ .  $\bar{i}n\bar{q}\bar{o}l\bar{a}$ .  $\bar{i}n\bar{c}\bar{u}n\bar{a}$ .  $\bar{u}g\bar{o}g\bar{o}$ .  $\bar{p}\bar{h}\bar{e}sh\bar{e}y\bar{a}$ .

Just as with nouns of Tone Classes I and II the ejective consonants may have a raising effect on tone, so with nouns of Tone Class IV, but here, seeing that the tone is already high, the effect is simply to eliminate the downstep, e.g.  $\bar{i}m\bar{p}\bar{o}n\bar{g}o$ . In the plural however, where a low tone intervenes, the downstep can never be eliminated, e.g.  $\bar{i}z\bar{i}m\bar{p}\bar{o}n\bar{g}o$ . With nouns of Tone Class IIIA, the ejective consonants have no such effect, as this would upset the mutually balancing mid tones; and with nouns of Tone Class IIIB, the ejective consonants have no effect because the noun is in final position.- It must be remembered that this influence of ejective consonants depends upon the speed of speech and upon the position in the sentence.

This pattern of behaviour for single prefixes is also followed by the double prefixes of disyllabic nouns whose roots begin with a vowel instead of with a consonant, the prefix in such cases being in effect a single prefix owing to the elision of the second syllable. Examples are:  $\bar{u}k\bar{w}\bar{a}l\bar{c}\bar{h}\bar{a}$ ,  $\bar{u}m\bar{a}k\bar{h}\bar{i}$ ,  $\bar{u}k\bar{w}\bar{e}b\bar{a}$ ,  $\bar{i}s\bar{e}b\bar{i}$ ;  $\bar{u}k\bar{o}n\bar{a}$ ,  $\bar{i}s\bar{o}n\bar{i}$ ;  $\bar{i}s\bar{a}n\bar{d}l\bar{a}$ ,  $\bar{i}s\bar{a}n\bar{d}o$ ;  $\bar{u}b\bar{o}y\bar{a}$ ,  $\bar{u}t\bar{s}\bar{h}\bar{a}n\bar{i}$ ,  $\bar{u}t\bar{s}\bar{h}\bar{w}\bar{a}l\bar{a}$ ; etc. These nouns behave as a single prefix disyllabic nouns in all particulars of tonal grammar.

(c) Z- Prefixes. (Classes 8 and 10).

The general rule applies, the prefix tones being HL with high tone nouns and LH with low tone nouns, but there are differences from the regular operation of the rule as described for double prefixes.

consonant "z" and therefore cannot bear a high tone.

With high tone nouns the operation of the rule is quite regular, and the principle of polarity determines that the prefix tones are HL, the low tone thus coinciding with the z-syllable. The only difference to note is that this low tone is never raised in pitch, the influence of tonal context not being strong enough to overcome the influence of the voiced consonant.

e.g.  $\bar{i}zithombe$ ,  $\bar{i}zimpongo$ ,  $\bar{i}zindana$ . (Tone Class IV).  
 $\bar{i}zifuba$ ,  $\bar{i}zinka\acute{b}i$ ,  $\bar{i}zim\grave{a}la$ . (Tone Class IIIB).

With nouns of Tone Class IIIA however, there is a consequent change of toneme from high to low on the first syllable of the root\*, and a consequent change of allotone from mid to high on the second syllable of the root. The tonal shape of the noun with z-prefixes is therefore (- · -), as opposed to (- · - ·), the tonal shape with double prefixes.

e.g.  $\bar{i}nka\acute{b}i$  -  $\bar{i}zinka\acute{b}i$ .  
 $\bar{i}mpande$  -  $\bar{i}zim\grave{a}nde$ .  
 $\bar{i}nv\acute{u}la$  (female voice) } -  $\bar{i}zimv\acute{u}la$ .  
 $\bar{i}nv\grave{u}la$  (male voice) }  
 $\bar{i}nd\acute{a}wo$  (female voice) } -  $\bar{i}zind\acute{a}wo$ .  
 $\bar{i}nd\grave{a}wo$  (male voice) }  
 $\bar{i}sikhand\acute{a}$  -  $\bar{i}zikhand\acute{a}$ .

With low tone nouns the principle of polarity determines that the prefix tones are LH, but here the high tone coincides with the z-syllable, which cannot bear it. Accordingly, by a process of tonal displacement, the high tone occurs on the following syllable, the first syllable of the root, as a high-falling tone, or, in quick speech, as a high-level tone. This latter event results in the disappearance of the final high tone of nouns of Tone Class II, according to the principle of polarity.

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\* See footnote on page 6 : "It seems that a mid tone after a low tone always becomes low itself....."

e.g.  $\bar{i}ntambo - izintambo$  or  $izint\bar{a}mb\bar{o}$ .  
 $\bar{u}khamba - izinkamba$  or  $izink\bar{a}mb\bar{a}$ .  
 $\bar{i}ntombi - izintombi$  or  $izint\bar{o}mb\bar{i}$ .  
 $\bar{u}phaphe - izimpaphe$  or  $izimp\bar{a}ph\bar{e}$ .  
 $\bar{i}silonda - izilonda$  or  $izil\bar{o}nd\bar{a}$ .

If, however, the first syllable of the root also has a voiced consonant, tonal displacement is impossible, and the second syllable of the prefix, the Z-syllable, is forced to bear its own high tone, which now occurs as a high-rising tone.

e.g.  $\bar{i}nda\bar{b}a - izinda\bar{b}a$ .  
 $\bar{u}b\bar{a}mb\bar{o} - izimb\bar{a}mb\bar{o}$ .  
 $\bar{i}ndle\bar{c}e - izindle\bar{c}e$ .  
 $\bar{u}dong\bar{a} - izindong\bar{a}$ .  
 $\bar{i}sigqoko - izigqoko$ .

It is important to note that the low tone on the first syllable of the z-prefix is always low, not being subject to tonal duplication as the first syllable of double prefixes. In the latter case, the syllable is tonally neutral, not having lexically or grammatically significant tone, but this is not so in this case.

e.g.  $imbongi iqamba kahle \bar{i}si\bar{o}ng\bar{o}$ .  
 $imbongi iqamba kahle izi\bar{o}ng\bar{o}$ .

Therefore, as regards the tone of the first syllable of the z-prefix, it is always low for low tone nouns (Tone Classes I and II) and always high for high tone nouns (Tone Classes III and IV). This tone is therefore grammatically significant: it indicates a high tone noun even when the toneme of the root has changed from high to low, and a low tone noun even when the toneme of the root has changed from low to high. This is not the case with double prefixes, where the first syllable of the prefix, with the exception of nouns of Tone Classes IV and IIIB, is tonally neutral and therefore subject to tonal duplication.

The situation is summarised in the following table:-

Z-PREFIX TONES.

Low tone nouns:-

I and II. LH, realised in speech as (··) plus tonal displacement of the high tone on to the first syllable of the root; or as (·') where tonal displacement is impossible.

High tone nouns:-

IIIA. HL, plus the disappearance of the high tone of the first syllable of the root.

IV and IIIB. HL, realised in speech as (-·).

Root Tones following z-prefixes.

I (LL) : (\·) or (-·) due to tonal displacement; otherwise (··).

II (LH) : (\-) or (-·) due to tonal displacement; otherwise (·-).

IIIA (HH) : (·-), an exception to the principle of polarity.

IIIB (H-L.L.) : (\·). (No change.)

IV (HL) : (-·). (No change).

B. GRAMMATICAL LEVEL.

1. Morphology. Here the subject of study is the grammatical behaviour within words, inflections both prefixal and suffixal. Prefixal inflections of the noun are the extra independent prefixes na-, nga-, kuna-, njenga-, nganga-, etc. and the "copulative" prefixes, and the dependent prefixes or possessive concords, the only type of dependent prefix occurring in conjunction with the noun. Suffixal inflections of the noun are the locative suffix, -ni, the diminutive suffix, -ana, and the augmentative suffix, -kazi. Although there are other prefixes and suffixes to be found in the language, these are the most common and show fully the pattern of tonal behaviour for all inflections.

(a) Prefixal inflection.

(i) Independent prefixes or extra prefixes.

The elements "na-" and "nga-" have inherent low tones; therefore the tone of the single prefixes, na- and nga-, is low, and of the second syllable of the double prefixes, kuna-, njenga-,

where the second syllable is forced to bear a high tone.

e.g. izimvu zincane kūnezinkomō.  
 izinkomazi zincane kūnezinka<sup>˘</sup>bi.  
 bagikima njengezinj<sup>˘</sup>a.

Seeing that the tonal changes that take place on inflection are caused by the inherent low tones of these elements, it is only necessary to consider the single prefixes in detail, the double prefixes following the same pattern exactly. Here it must be pointed out that the low tone of the single prefix is often raised in pitch owing to the influence of downdrift intonation. This depends upon the position in the sentence, and occurs more commonly with na- than with nga- because of the different consonants. This raising in pitch is not marked in the sentences given below as examples.

(a). Double prefix nouns.

With nouns of Tone Classes I, II, and IIIA, where the first syllable of the noun prefix is tonally neutral, the tone of that syllable becomes low on inflection.

e.g. umfana nomhlobo wakhe bahambile.  
izinkuku namaqanda azo zibiza malini?  
umuzi nesibaya sawo ushanelwe kahle.  
abakwazulu bazondla izingane ngamabele.  
wacindezela abantu ngesikhundla sakhe sobuzwana.

Nouns having long vowel prefixes follow the same pattern of behaviour.

e.g. umfana nekhehla (< nelikhehla) bahlezi endleleni.  
uabapuyayilima insimu ngegeja (< ngeligeja).  
wamthimulisa umntwana ngophaphe (< ngoluphaphe).

With nouns of Tone Classes IV and IIIB, the low tone of the extra prefix coincides with the high tone of the first syllable of the noun prefix, with the result that tonal displacement on to the second syllable of the noun prefix takes place. The downstep between the prefix and the root still occurs, although there is now no intervening low tone to mark it.

e.g. umthwalo: inqola nomthwalo walo inzima kakhulu.  
umkhonto: wayihlaba imbuzi ngomkhonto.  
amafutha: izintombi zazizigcoba ngamafutha.

Nouns having long vowel prefixes follow the same pattern of behaviour.

e.g. igula: amasi negula (< neligula) lawo antshontshiwe.  
ijoka: sibophela inkabi ngejoka (< ngelijoka).  
uthango: umlungu uyayibiyela insimu ngothango (< ngoluthango)

(b) Single prefix nouns.

Here the low tone of the extra prefix coincides with <sup>the</sup> high tone of the noun prefix, with the result that tonal displacement on to the first syllable of the root takes place wherever possible.

With nouns of Tone Classes I and II, the displaced high tone of the prefix occurs as a high-level tone on the following syllable. In slow speech there is the possibility of it occurring as a high-falling tone, which is usually the case in final position because of the coincidence of final cadence. Where tonal displacement is not possible, the high tone of the prefix occurs as a rising-high tone.

e.g. impahla: inqola nempahla yayo inzima kakhulu. (quick speech).  
 inqola nempahla yayo inzima kakhulu. (slow speech).  
intombi: insizwa nentombi bayathandana. (quick speech).  
 insizwa nentombi bayathandana. (slow speech).  
indaaba: indoda nendaaba yayo izokuthethwa kusasa. (tonal displacement impossible).  
intambo: ngiyibophileinja ngentambo.  
inkomo: wayethengisa ngenkomo.

With nouns of Tone Class IIIA, the displaced high tone of the prefix occurs as a high-level tone on the following syllable. There is no possibility of it occurring as a high-falling tone as with low tone nouns, because the syllable in question already bears a high tone, the mid tone of the high toneme. The effect of this displacement is to upset the mutual balance of the mid tones, the final mid tone

becoming low in consequence of the first mid tone becoming high, according to the principle of polarity. Where tonal displacement is not possible, the high tone of the prefix occurs as a rising-high tone.

e.g.  $\bar{i}m\bar{p}a\bar{n}d\bar{e}$ :  $\bar{u}m\bar{u}t\bar{h}i$   $\bar{n}e\bar{m}\bar{p}a\bar{n}d\bar{e}$   $\bar{y}a\bar{w}o$   $\bar{u}p\bar{h}e\bar{p}h\bar{u}k\bar{i}l\bar{e}$ . (tonal displacement).  
 $\left\{ \begin{array}{l} \bar{i}n\bar{v}\bar{u}l\bar{a}$ :  $\bar{i}f\bar{u}$   $\bar{n}e\bar{m}\bar{v}\bar{u}l\bar{a}$   $\bar{y}a\bar{l}o$   $\bar{l}i\bar{y}a\bar{d}i\bar{n}g\bar{e}k\bar{a}$ . (female voice).  
 (tonal displacement impossible).  
 $\bar{i}n\bar{v}\bar{u}l\bar{a}$ :  $\bar{i}f\bar{u}$   $\bar{n}e\bar{m}\bar{v}\bar{u}l\bar{a}$   $\bar{y}a\bar{l}o$   $\bar{l}i\bar{y}a\bar{d}i\bar{n}g\bar{e}k\bar{a}$ . (male voice)  
 (tonal displacement impossible).

With nouns of Tone Class IIIB, the process of tonal displacement is not apparent as the following syllable already bears a high tone; but it nevertheless takes place, for where tonal displacement is not possible owing to the following syllable having a voiced consonant, the high tone of the prefix occurs as a rising-high tone.

e.g.  $\bar{i}n\bar{k}\bar{a}\bar{b}\bar{i}$ :  $\bar{u}\bar{b}\bar{a}\bar{b}\bar{a}$   $\bar{u}y\bar{a}y\bar{i}l\bar{i}m\bar{a}$   $\bar{i}n\bar{s}i\bar{m}\bar{a}$   $\bar{n}g\bar{e}n\bar{k}\bar{a}\bar{b}\bar{i}$ . (tonal displacement).  
 $\bar{i}n\bar{v}\bar{u}l\bar{a}$ :  $\bar{u}m\bar{b}i\bar{l}\bar{a}$   $\bar{u}y\bar{a}k\bar{h}u\bar{l}\bar{a}$   $\bar{k}\bar{a}h\bar{l}\bar{e}$   $\bar{n}g\bar{e}n\bar{v}\bar{u}l\bar{a}$ . (tonal displacement impossible).

The situation is exactly the same for nouns of Tone Class IV.

e.g.  $\bar{i}m\bar{p}\bar{e}n\bar{g}\bar{e}$ :  $\bar{i}n\bar{q}\bar{a}m\bar{a}$   $\bar{n}e\bar{m}\bar{p}\bar{e}n\bar{g}\bar{e}$   $\bar{z}i\bar{y}\bar{a}l\bar{w}\bar{a}$ . (tonal displacement).  
 $\bar{i}n\bar{g}\bar{a}n\bar{e}$ :  $\bar{i}s\bar{a}l\bar{u}k\bar{a}z\bar{i}$   $\bar{n}e\bar{n}g\bar{a}n\bar{e}$   $\bar{b}\bar{a}h\bar{l}\bar{e}z\bar{i}$   $\bar{e}n\bar{d}l\bar{i}n\bar{i}$  } (tonal displacement impossible).  
 $\bar{i}n\bar{d}\bar{u}n\bar{a}$ :  $\bar{i}n\bar{k}\bar{o}s\bar{i}$   $\bar{i}\bar{b}\bar{u}s\bar{a}$   $\bar{a}\bar{b}\bar{a}n\bar{t}\bar{u}$   $\bar{n}g\bar{e}n\bar{d}\bar{u}n\bar{a}$ . }

It is interesting to note that Class 7 nouns as spoken by men may behave as single prefix nouns. This is because the sibilance of the consonant allows the syllable almost to disappear, so that the double prefix, *isi-*, becomes in effect a single prefix. Thus, when inflection by the extra prefix takes place, the high tone of the prefix occurs on the first syllable of the root instead of on the second syllable of the prefix, now nearly non-existent. Because of the greater flexibility of the female voice, the second syllable of the prefix, however short, bears its own high tone.

e.g.  $\bar{i}k\bar{h}\bar{e}h\bar{l}\bar{a}$   $\bar{n}\bar{e}ss\bar{c}\bar{o}c\bar{o}$   $\bar{s}\bar{a}l\bar{o}$   $\bar{l}i\bar{f}\bar{a}n\bar{e}l\bar{e}$   $\bar{l}i\bar{h}l\bar{o}n\bar{i}sh\bar{w}\bar{e}$ . (male voice).  
 $\bar{i}k\bar{h}\bar{e}h\bar{l}\bar{a}$   $\bar{n}\bar{e}s\bar{i}c\bar{o}c\bar{o}$   $\bar{s}\bar{a}l\bar{o}$   $\bar{l}i\bar{f}\bar{a}n\bar{e}l\bar{e}$   $\bar{l}i\bar{h}l\bar{o}n\bar{i}sh\bar{w}\bar{e}$ . (female voice).



- { wazivikela ngomkhonto nesshlangu. (male voice).  
 { wazivikela ngomkhonto nesihlangu. (female voice).  
 { wasikhombisa ngessthupha sakhe. (male voice).  
 { wasikhombisa ngesithupha sakhe. (female voice).  
 { iphoyisa licindezela abantu ngesskhundla salo. (male voice).  
 { iphoyisa licindezela abantu ngesikhundla salo. (female voice).

This behaviour of Class 7 nouns as spoken by men is not the rule, but it occurs commonly in normal quick speech.

(c) Z-prefix nouns.

With low tone nouns, the tone on the first syllable of the noun prefix is low, which coincides with the inherent low tone of the extra prefix.

- e.g. inqola nezimpahla zayo inzima kakhulu. (< impahla).  
izinsizwa nezintombi ziyathandana. (< intombi).  
indoda nezindaaba zayo izokuthethwa kusasa. (< indaaba).  
 abantwana baya esikoleni nezincwadi za60. (< incwadi).  
 bayafunda esikoleni ngezincwadi. (< incwadi).  
 izinduna zibonakele ngezicoco. (< isicoco).

With high tone nouns, the tone on the first syllable of the noun prefix is high, which, because of the coincidence of the inherent low tone of the extra prefix, occurs as a rising-high tone, tonal displacement on to the second syllable of the noun prefix, the z-syllable, being impossible.

- e.g. izinqama nezimpongo ziyalwa. (< impongo).  
umuthi nezimpande zawo uphephukilw. (< impande).  
 amaBunu awela oKhahlamba ngezinqola. (< inqola).  
 ubaba uyayolima insima ngezinka6i. (< inka6i).  
 bacindezela abantu ngezikhundla za60 zobuduna. (< isikhundla).

(ii). "Copulative" prefixes.

The "copulative" prefix consists of an inherent low tone, which may or may not be preceded by y- or ng-. It therefore behaves in exactly the same way as the extra prefix.

## (a) Double prefix nouns.

I and II and IIIA

umhloóo - ng/umhloóo      amaqanda - ng/amaqanda.  
 isibaya - y/isibaya---.      isikhundla - y/isikhundla---.  
 ikhehla - y/ikhehla.      uphaphē - ng/uphaphē.

IV and IIIB.

umthwalo - ng/umthwalo.      umkhonto - ng/umkhonto.  
 amafutha - ng/amafutha.  
 igula - y/igula.      ijoka - y/ijoka.

## (b) Single prefix nouns.

I and II.

impahla - y/impahla.      intombi - y/intombi.  
 indaba - y/indaba.

IIIA. impandé - y/impandé---.

invula - y/invulaa. (male voice).      invula - y/invula (female voice)

IIIB. inkabi - y/inkabi.      invula - y/invula.

IV. impongo - y/impongo.      induna - y/induna.

## (c) Z-prefix nouns.

I and II.

izimpahla - y/izimpahla.      izintombi - y/izintombi.  
 izindaba - y/izindaba.

III and IV.

izimpongo - y/izimpongo.      izinqola - y/izinqola.  
 izimpandé - y/izimpandé.      izimpandé - y/izimpandé---.  
 izinkabi - y/izinkabi.      izinkabi - y/izinkabi---.

(iii) Dependent prefixes or possessive concords.

These prefixes or concords have no inherent tones, the tones being determined in most cases by the final tone of the preceding noun with which they are in concordial agreement, by a process of tonal duplication. This process operates not only when the first syllable of the noun prefix is tonally neutral, e.g. umphini wesivalo--- (< isivalo), but also when it is low in tone, e.g. imphini yezivalo---

(izivalo); but it does not operate when the first syllable of the noun prefix is high in tone, in which case the tone of the concord is high too. This is in accordance with the principle of polarity.

The concords for Noun Classes 8 and 10, the z-concords, behave differently because of the voiced consonants. It is to be expected that they are low in tone wherever possible, which is in all cases except where the first syllable of the noun prefix is high in tone without the possibility of tonal displacement on to the following syllable.

(a) Double prefix nouns.

When the first syllable of the noun prefix is tonally neutral, the tone of the concord is determined by tonal duplication of the final tone of the preceding noun. This is the case with nouns of Tone Classes I and II and IIIA. The tone of z-concords is always low however, because of the voiced consonant.

- e.g. (uóuso óomhloóó buyakhanya esengíona. (slow speech).  
 (uóuso óomhloóó buyakhanya esengíona. (quick speech).  
 íkhaya íomhloóó liseduze nalethu.  
 ísibongo somhloóó singucale.  
 (ísifo sesífuóá sígulala abantu abaningi. (slow speech).  
 (ísifo sesífuóá sígulala abantu abaningi. (quick speech).  
 ízifo zesífuóá sígulala abantu abaningi. (z-concord).  
 ízinkaóá zomlungu zidonsa kahle. (z-concord).  
 (ízitho zomzimba ziningi. (male voice).  
 (ízitho zomzimba ziningi. (female voice). (z-concords).

When the tone of the first syllable of the noun prefix is high, the tone of the concord is high too. This is the case with nouns of Tone Classes IV and IIIB. With z-concords tonal displacement of the high tone on to the second syllable of the noun prefix takes place.

- e.g. amandla emikhonto aziwa ngabantu basendulo.  
 ubunzima bomthwalo buyamsinda.  
 izintambo zomthwalo zikhunyuliwe. (z-concord).

izikhwama zesihambi zigwele imali. (z-concord).

uaba wafa yisifo sesifuba.

(b) Single prefix nouns.

The tone of the noun prefix is always high, and therefore so is the tone of the concord. With z-concords tonal displacement of the high tone onto the following syllable, the first syllable of the root, takes place wherever possible, and where it is not possible, the high tone occurs as a high-rising tone.

e.g. phakathi kwencwadi kukhona izindaaba ezinhle.

ubuqatha benkabi bubonakele isidonsa.

inyama yempongo ayinambitheki.

(ubuhle bentombi buyayikhanga insizwa (slow speech).

(ubuhle bentombi buyayikhanga insizwa. (quick speech).

(izimpondo zenkomo zinqunyiwe. (slow speech).

(izimpondo zenkomo zinqunyiwe. (quick speech). (< inkomo).

(izintambo zempahla zikhunyuliwe. (slow speech).

(izintambo zempakla zikhunyuliwe. (quick speech). (< impahla).

izimpondo zenkabi zinqunyiwe. (< inkabi).

izinwele zengane zigcotshwe amafutha. (tonal displacement impossible)

izikhwama zengubo zinemali. (tonal displacement impossible).

(c) Z-prefix nouns.

When the tone of the first syllable of the noun prefix is high, as it is with the high tone nouns, the tone of the concord is high too. With Z-concords this high tone occurs as a high-rising tone, tonal displacement being impossible here.

e.g. umfazi wahlulwa ngukwesaba kwezinyoka.

ubunzima bezinqola babudina izinkabi zamaBunu.

izinwele zezingane zigcotshwe amafutha.

ubuqili bezinkawu buyaduma.

ubuqatha bezinkabi bubonakele sezidonsa.

izimpondo zezinkabi zinqunyiwe.

When the tone of the first syllable of the noun prefix is low, as it is with the low tone nouns, the tone of the concord is determined by tonal duplication of the final tone of the preceding noun. With z-concords the tone is always low however. Only tonally neutral syllables are subject to tonal duplication, and here the effect of the inflection by the possessive concord of the first syllable of low tone z-prefix nouns, which bears a grammatically significant low tone, is to make that syllable tonally neutral and therefore subject to tonal duplication. There is a peculiarity of tonal duplication on this inflected form of the first syllable of the noun prefix, and it is that where that syllable is followed by a low tone, tonal duplication of a mid tone is a high tone, and of a high tone is a raised-high tone, e.g. ubuhle ḡzintombi ḡyazikhanga ḡinsizwa. (slow speech).  
ubuhle ḡzintombi ḡyazikhanga ḡinsizwa. (quick speech).  
abesifazane ḡyabuka ubuhle ḡzigqoko.  
ubuhle ḡzigqoko ḡyabamanalisa ḡabesifazane.  
ḡphakathi ḡkwezincwadi (ḡkwezincwadi) ḡkukhona ḡindaba ḡezinhle.  
ubunjani ḡzinkomo (ḡzinkomo) ḡyamthinta ḡubaba.  
ubuqatha ḡzindlovu ḡyamanalisa.  
ubumhlophe ḡzimpaphe (ḡzimpaphe) ḡuthe ḡqha.  
ubukhali ḡzinzipho ḡunengozi.  
ubuhluḡ ḡzilonda (ḡzilonda) ḡyamluma.  
ḡizindlebe ḡzezimvubu ḡzibonakele ḡemfuleni (z-concord).  
ḡizikhwama ḡzezingubo ḡzinenamali. (z-concord).

NOTE: With nouns of Classes 1(a) and 2(a) the possessive prefix is invariably ka-. The tone of this prefix is determined by the tone of the noun prefix: with nouns of Class 1(a) the tone is high, the noun prefix being a single prefix, and with nouns of Class 2(a) the tone is either rising or falling depending upon the Tone Class of the noun, the noun prefix being a long vowel double prefix.

(b) Suffixal inflection.

Inflection by the locative, diminutive and augmentative suffixes shows very clearly the principle of the tone pattern: that the tonal behaviour of the noun is determined by the tones of the final two syllables i.e. by the tone pattern. With the uninflected noun these tones are significant not only grammatically in determining the tone class to which the noun belongs which in turn determines the tonal behaviour of the noun, but also lexically; but with the inflected noun these tones no longer coincide with the root syllables and therefore they are no longer lexically significant,\* although they are nevertheless grammatically significant in determining the tonal behaviour of the noun. It follows that root syllables having lexically and grammatically significant tone may become tonally neutral on inflection, and this is similarly so with prefix syllables having grammatically significant tone. That is why it can never be said that tone in Zulu is a fixed feature of the syllable.

- (i) (a) The locative suffix, -ni. )  
 (b) The diminutive suffix, -ana.)

The suffix has two inherent low tones. Seeing that the first syllable of the suffix coincides with the final syllable of the noun root, there is a simultaneous coincidence of the low tone of the suffix with either a final low tone or a final high tone. This results in a low suffix tone in the former case and a high suffix tone in the latter case, an example of the magnetic influence of tones of the high pole on tones of the low pole. The significant distinction to make here is therefore not between "high tone nouns" and "low tone nouns" but between "final high tone nouns" (nouns of Tone Classes II and III) and "final low tone nouns" (nouns of Tone Classes I and IV), the tone pattern of the suffix with the former nouns being HL and with the latter nouns being LL. Seeing that the ~~tone pattern determines the tone class, it may be said that nouns~~

\* This is so generally speaking, but the tone of the penultimate syllable of locatives and diminutives is still lexically as well

change the tone class on inflection, nouns of Tone Classes II and III (final high tone nouns) changing to Tone Class IV, and nouns of Tone Classes I and IV (final low tone nouns) changing to Tone Class I. All disyllabic nouns (except nouns of Noun Classes 8 and 10) now behave as trisyllabic nouns of these two tone classes, even as to the tones of the prefixes.

All Noun Classes other than Classes 8 and 10.

With final high tone nouns the tone pattern becomes HL (Tone Class IV), and the preceding grammatically significant high tone falls on the first syllable of the prefix, the remaining syllables being tonally neutral.

e.g.  $\bar{a}n\bar{a}b\bar{e}l\bar{e}$  (kaffir-corn) -  $\bar{e}m\bar{a}b\bar{e}l\bar{e}n\bar{i}$ .

$\acute{i}thang\acute{a}$  (thigh) -  $\bar{e}thang\bar{e}n\bar{i}$  and  $\bar{i}thang\bar{a}n\bar{a}$ .

$\bar{i}nyang\bar{a}$  (moon) -  $\bar{e}nyang\bar{e}n\bar{i}$  and  $\bar{i}nyang\bar{a}n\bar{a}$ .

$\bar{u}mhla\bar{b}a$  (earth) -  $\bar{e}mhla\bar{b}e\bar{n}i$

$\bar{u}m\bar{b}ala$  (colour) -  $\bar{e}m\bar{b}al\bar{e}n\bar{i}$ .

ngifundile  $\bar{i}nda\bar{b}a$   $\bar{e}nhle$   $\bar{e}ncwadi\bar{n}i$ . (<  $\bar{i}ncwadi$ ).

umbila uyakhula kahle  $\bar{e}masim\bar{i}n\bar{i}$ . (<  $\bar{a}masim\bar{u}$ ).

umfowethu uyasebenza  $\bar{e}nkosi\bar{n}i$ . (<  $\bar{i}nkosi$ ).

With final low tone nouns the tone pattern becomes LL (Tone Class I) and the preceding grammatically significant high tone falls on the first syllable of the root, the remaining syllables comprising the prefix being tonally neutral and therefore subject to tonal duplication.

e.g.  $\bar{a}n\bar{a}b\bar{e}l\bar{e}$  (breasts) -  $\bar{e}m\bar{a}b\bar{e}l\bar{e}n\bar{i}$ .

$\acute{i}thang\acute{a}$  (pumpkin) -  $\bar{e}thang\bar{e}n\bar{i}$  and  $\bar{i}thang\bar{a}n\bar{a}$ .

$\bar{i}nyang\bar{a}$  (doctor) -  $\bar{e}nyang\bar{e}n\bar{i}$  and  $\bar{i}nyang\bar{a}n\bar{a}$ .

$\bar{u}mhla\bar{b}a$  (aloe) -  $\bar{e}mhla\bar{b}e\bar{n}i$ .

$\bar{u}m\bar{b}ala$  (shin) -  $\bar{e}m\bar{b}al\bar{e}n\bar{i}$ .

ufake  $\bar{u}gwayi$   $\bar{e}shungw\bar{i}n\bar{i}$  (<  $\bar{i}shung\bar{u}$ ).

$\bar{a}bantwana$   $\bar{b}akhwele$   $\bar{e}nqolen\bar{i}$ . (<  $\bar{i}nqola$ ).

$\bar{i}nja$   $\bar{a}yivunyelwa$   $\bar{u}kulala$   $\bar{e}sihlalwen\bar{i}$  (<  $\bar{i}sihlalo$ ).

If the first syllable of the root has a voiced consonant, tonal displacement of the high tone on to the following penultimate syllable takes place, wherever possible. The tonal shape of the inflected noun now resembles the tone pattern for Tone Class IV, and in consequence of this superficial resemblance the first syllable of the prefix, normally tonally neutral, may become high in tone, especially in slow speech and at the beginning of the sentence. This is unusual, because the rules and processes of tonal grammar operate according to the essential tones, even where there is some considerable discrepancy between these and the actual speech tones.

e.g.  $\bar{i}nduna - \bar{e}nduneni$  and  $\bar{i}ndunyama$ .

$\bar{i}nda\acute{a}ba - \bar{e}nda\acute{a}bani$  and  $\bar{i}nda\acute{t}shana$ .

$\bar{i}ngu\acute{o}o - \bar{e}ngutsheni$  and  $\bar{i}ngutshana$ .

$\bar{i}gula - \bar{e}guleni$  and  $\bar{i}gulana$ .

$\bar{i}sigubu - \bar{e}sigujini$  and  $\bar{i}sigujana$ . (tonal displacement impossible)

$\bar{i}ndoda - \bar{e}ndodeni$  and  $\bar{i}ndodana$ . (tonal displacement impossible).

$\bar{a}m\acute{a}zeze \rightarrow \bar{a}m\acute{a}zezana$ . (tonal displacement impossible).

NOTE: With nouns of Classes 1 and 2 the locative prefix is  $ku-$ . The tone of this prefix is determined by the tone of the noun prefix, in the same way as the tone of the locative prefixes,  $e-$  or  $o-$ .

#### Noun Classes 8 and 10.

With nouns of all other classes it is true to say that the inflected disyllabic nouns behave as trisyllabic nouns of Tone Classes I and IV, even as to the tones of the prefix, but with nouns of these two classes this is not so. The suffix tones are determined quite regularly according as the noun is a final high tone noun or a final low tone noun, but the prefix tones are not in turn determined by the suffix tones, i.e. by the tone pattern, an exception therefore to this principle, but according as the noun is a high tone noun or a low tone noun; in other words, the prefix retains the tones of the uninflected noun, which were determined by a tone pattern that now no longer exists, due to the change of tone pattern



classification of high tone nouns (Tone Classes III and IV) and low tone nouns (Tone Classes I and II) with regard to the prefix tones, and of final high tone nouns (Tone Classes II and III) and final low tone nouns (Tone Classes I and IV) with regard to the suffix tones.

With final high tone nouns the tone pattern becomes HL, but the tones of the prefix syllables are not determined accordingly; they retain the tones of the uninflected noun, determined according as it is a high tone noun or a low tone noun. This exceptional situation is not noticeable with nouns of Tone Class III, where the tone on the first syllable of the prefix is high however it is determined, the tonal shape of the prefix being HL.

e.g.  $\bar{i}z\bar{i}b\bar{a}y\bar{a}$  -  $\bar{e}z\bar{i}b\bar{a}y\bar{e}n\bar{i}$ .

$\bar{i}z\bar{i}g\bar{q}\bar{i}k\bar{i}$  -  $\bar{e}z\bar{i}g\bar{q}\bar{i}k\bar{i}n\bar{i}$  and  $\bar{i}z\bar{i}g\bar{q}\bar{i}k\bar{a}n\bar{a}$ .

$\bar{i}z\bar{i}k\bar{h}w\bar{a}m\bar{a}$  -  $\bar{e}z\bar{i}k\bar{h}w\bar{a}m\bar{e}n\bar{i}$  and  $\bar{i}z\bar{i}k\bar{h}w\bar{a}n\bar{a}$ .

But with nouns of Tone Class II the tone on the first syllable of the prefix is not high but low, and the second syllable is not tonally neutral but bears a grammatically significant high tone, the tonal shape of the prefix therefore being LH. This high tone is displaced on to the following syllable wherever possible, and the downstep between this high tone and the high tone of the suffix still occurs, although, because of tonal displacement, there is now no intervening low tone to mark it.

e.g.  $\dot{i}z\dot{i}n\dot{k}o\dot{m}o$  -  $\dot{e}z\dot{i}n\dot{k}o\dot{m}e\dot{n}i$  and  $\dot{i}z\dot{i}n\dot{k}o\dot{n}y\dot{a}n\dot{a}$ .

$\dot{i}z\dot{i}m\dot{p}a\dot{p}h\dot{e}$  -  $\dot{e}z\dot{i}m\dot{p}a\dot{p}h\dot{e}n\dot{i}$  and  $\dot{i}z\dot{i}m\dot{p}a\dot{s}h\dot{a}n\dot{a}$ .

$\dot{i}z\dot{i}n\dot{c}w\dot{a}d\dot{i}$  -  $\dot{e}z\dot{i}n\dot{c}w\dot{a}d\dot{i}n\dot{i}$ .

$\dot{i}z\dot{i}n\dot{d}o\dot{n}g\dot{a}$  -  $\dot{e}z\dot{i}n\dot{d}o\dot{n}g\dot{e}n\dot{i}$ . (tonal displacement impossible).

$\dot{i}z\dot{i}n\dot{d}u\dot{m}b\dot{u}$  -  $\dot{e}z\dot{i}n\dot{d}u\dot{m}j\dot{i}n\dot{i}$ . (tonal displacement impossible).

With final low tone nouns the tone pattern becomes LL and the tone of the first syllable of the root becomes high in consequence, but the prefix syllables are not tonally neutral: they retain the tones of the uninflected noun, determined according as it is a high tone noun or a low tone noun. With nouns of Tone Class IV the tone on the

first syllable of the prefix is high, the tonal shape of the prefix being HL.

- e.g.  $\bar{i}z\bar{i}q\bar{h}i\bar{ng}i$  -  $\bar{e}z\bar{i}q\bar{h}i\bar{ng}i\bar{n}i$ .  
 $\bar{i}z\bar{i}m\bar{p}o\bar{n}g\bar{o}$  -  $\bar{e}z\bar{i}m\bar{p}o\bar{n}g\bar{w}e\bar{n}i$ .  
 $\bar{i}z\bar{i}n\bar{q}\bar{o}l\bar{a}$  -  $\bar{e}z\bar{i}n\bar{q}\bar{o}l\bar{e}n\bar{i}$  and  $\bar{i}z\bar{i}n\bar{q}\bar{o}l\bar{a}n\bar{a}$ .  
 $\bar{i}z\bar{i}n\bar{d}\bar{u}n\bar{a}$  -  $\bar{e}z\bar{i}n\bar{d}\bar{u}n\bar{e}n\bar{i}$  and  $\bar{i}z\bar{i}n\bar{d}\bar{u}n\bar{y}\bar{a}n\bar{a}$ . (tonal displacement).  
 $\bar{i}z\bar{i}g\bar{u}b\bar{u}$  -  $\bar{e}z\bar{i}g\bar{u}j\bar{i}n\bar{i}$  and  $\bar{i}z\bar{i}g\bar{u}j\bar{a}n\bar{a}$ . (tonal displacement impossible).

With nouns of Tone Class I the tonal shape of the prefix is not LH but LL, thus following the pattern of trisyllabic nouns of Tone Class I. These nouns are therefore an exception to the exception of Noun Classes 8 and 10, for they behave tonally as nouns of all other classes. This may be because the nouns of Tone Class I are the only nouns that do not change the tone pattern and the tone class on inflection, inflected disyllabic nouns of Tone Class I behaving as trisyllabic nouns of Tone Class I, even as to the tones of the prefixes.

- e.g.  $\bar{i}z\bar{i}h\bar{l}\bar{a}l\bar{e}$  -  $\bar{e}z\bar{i}h\bar{l}\bar{a}l\bar{w}e\bar{n}i$  and  $\bar{i}z\bar{i}h\bar{l}\bar{a}l\bar{w}\bar{a}n\bar{a}$ .  
 $\bar{i}z\bar{i}m\bar{p}\bar{o}n\bar{d}\bar{o}$  -  $\bar{e}z\bar{i}m\bar{p}\bar{o}n\bar{d}\bar{w}e\bar{n}i$  and  $\bar{i}z\bar{i}m\bar{p}\bar{o}n\bar{j}\bar{w}\bar{a}n\bar{a}$ .  
 $\bar{i}z\bar{i}n\bar{d}\bar{a}b\bar{a}$  -  $\bar{e}z\bar{i}n\bar{d}\bar{a}b\bar{e}n\bar{i}$  and  $\bar{i}z\bar{i}n\bar{d}\bar{a}t\bar{s}\bar{h}\bar{a}n\bar{a}$ . (tonal displacement).  
 $\bar{i}z\bar{i}n\bar{g}\bar{u}t\bar{u}c\bar{o}$  -  $\bar{e}z\bar{i}n\bar{g}\bar{u}t\bar{s}\bar{h}\bar{e}n\bar{i}$  and  $\bar{i}z\bar{i}n\bar{g}\bar{u}t\bar{s}\bar{h}\bar{a}n\bar{a}$ . (tonal displacement).  
 $\bar{i}z\bar{i}g\bar{q}\bar{o}k\bar{o}$  -  $\bar{e}z\bar{i}g\bar{q}\bar{o}k\bar{w}e\bar{n}i$  and  $\bar{i}z\bar{i}g\bar{q}\bar{o}k\bar{w}\bar{a}n\bar{a}$ . (tonal displacement).  
 $\bar{i}z\bar{i}n\bar{d}\bar{l}\bar{o}v\bar{i}$  -  $\bar{e}z\bar{i}n\bar{d}\bar{l}\bar{o}v\bar{i}n\bar{i}$  and  $\bar{i}z\bar{i}n\bar{d}\bar{l}\bar{o}v\bar{a}n\bar{a}$ . (tonal displacement impossible).  
 $\bar{i}z\bar{i}m\bar{b}\bar{a}m\bar{b}\bar{o}$  -  $\bar{e}z\bar{i}m\bar{b}\bar{a}n\bar{j}\bar{e}n\bar{i}$  and  $\bar{i}z\bar{i}m\bar{b}\bar{a}n\bar{j}\bar{a}n\bar{a}$ . (tonal displacement impossible).

To sum up, the prefixes of inflected disyllabic nouns of all noun classes other than Classes 8 and 10, behave tonally as the prefixes of trisyllabic nouns. The prefixes of inflected disyllabic nouns of Noun Classes 8 and 10 however, behave tonally as the prefixes of the uninflected nouns. That being so, the first syllable of the prefix is never tonally neutral but bears either a high or a low grammatically significant tone.

The situation is summarised in the following table:-

The Tones of Locatives and Diminutives.

## The Tones of Locatives and Diminutives.

All Noun Classes other than Classes 8 and 10.

II and III: as trisyllabic nouns of Tone Class IV: H. . HL.

I and IV : as trisyllabic nouns of Tone Class I : . . H LL.

(The dots represent tonally neutral syllables).

Noun Classes 8 and 10.

IV : prefix as for high tone nouns and suffix as for final low  
tone nouns : H.L.H.L.L.

III : prefix as for high tone nouns and suffix as for final high  
tone nouns : H.L.L.H.L.

II : prefix as for low tone nouns and suffix as for final high  
tone nouns : L.H.L.H.L.

I : as trisyllabic nouns of Tone Class I : . . H LL.

(ii) Double suffixal inflection.

On single inflection, disyllabic nouns of Tone Classes II and III (final high tone nouns) behave tonally as trisyllabic nouns of Tone Class IV, and on double inflection as polysyllabic nouns of Tone Class I. Similarly, disyllabic nouns of Tone Classes I and IV (final low tone nouns) behave tonally as trisyllabic of Tone Class I on single inflection, and as polysyllabic nouns of Tone Class I on double inflection. Nouns of Tone Class I never change the tone pattern therefore, nor the tone class. Thus, on double inflection, all disyllabic nouns (except nouns of Noun Classes 8 and 10) behave as polysyllabic nouns of Tone Class I, even as to the tones of the prefixes.

All Noun Classes other than Classes 8 and 10.

With all nouns the tone pattern becomes LL, the preceding syllable being high in tone and the remaining syllables being tonally neutral, according to the process of tonal adaptation for polysyllabic nouns of Tone Class I. If the grammatically significant high tone coincides with a syllable having a voiced consonant, tonal displacement of that high tone on to the following syllable takes place. The tonal shape of the inflected noun now resembles the tone pattern for Tone Class IV, and in consequence of this superficial resemblance, the

first syllable of the prefix, normally tonally neutral, may become high in tone, especially in slow speech and at the beginning of the sentence. This point was noted in the previous section, (b) (i).

e.g. Final high tone nouns.

ama<sup>ˈ</sup>bele (kaffir-corn) - ama<sup>ˈ</sup>bedlana - e<sup>ˈ</sup>ma<sup>ˈ</sup>bedlaneni.

ithanga (thigh) - ithangana - e<sup>ˈ</sup>thanganeni.

inyanga (moon) - inyangana - e<sup>ˈ</sup>nyanganeni.

inkomo - inkonyana - e<sup>ˈ</sup>nkonyaneni.

intombi - intonjana - e<sup>ˈ</sup>ntonjaneni.

(intombazana - e<sup>ˈ</sup>ntombazaneni).

amasimu - amasinyana - e<sup>ˈ</sup>masinyaneni.

inkosi - inkosana - e<sup>ˈ</sup>nkosaneni.

(inkosanyana - e<sup>ˈ</sup>nkosanyaneni.

(inkosazana - e<sup>ˈ</sup>nkosazaneni).

e.g. Final low tone nouns.

ama<sup>ˈ</sup>bele (breasts) - ama<sup>ˈ</sup>bedlana - e<sup>ˈ</sup>ma<sup>ˈ</sup>bedlaneni.

ithanga (pumpkin) - ithangana - e<sup>ˈ</sup>thanganeni.

inyanga (doctor) - inyangana - e<sup>ˈ</sup>nyanganeni.

inda<sup>ˈ</sup>ba - indatshana - e<sup>ˈ</sup>ndatshaneni.

indoda - indodana - e<sup>ˈ</sup>ndodaneni.

(indodanyana - e<sup>ˈ</sup>ndodanyaneni).

inqola - inqolana - e<sup>ˈ</sup>nqolaneni.

induna - indunyana - e<sup>ˈ</sup>ndunyaneni.

isigubu - isigujana - e<sup>ˈ</sup>sigujaneni.

#### Noun Classes 8 and 10.

Nouns of these two classes behave quite regularly as regards the suffix tones, but as regards the prefix tones they retain the tones of the uninflected nouns, even on double inflection. Nouns of Tone Class I are an exception to this exception, and behave quite regularly both as to suffix tones and as to prefix tones.

e.g. Final high tone nouns

III. izigqiki - izigqikana - ezigqikaneni.

izikhwama - izikhwanyana - ezikhwanyaneni.

- II. izinkomo - izinkonyana - ezinkonyaneni.\*  
 izimpaphe - izimphashana - ezimpashaneni.\*  
 izincwadi - izincwajana - ezincwajaneni.\*  
 izindonga - izindongana - ezindonganeni.

e.g. Final low tone nouns.

- IV. izinqola - izinqolana - ezinqolaneni.  
 izinduna - izindunyana - ezindunyaneni.  
 izigubu - izigujana - ezigujaneni.  
 I. izihlalo - izihlalwana - ezihlalwaneni.  
 izindaaba - izindatshana - ezindatshaneni.  
 izindlovu - izindlovana - ezindlovaneni.

(iii) The augmentative suffix, -kazi.

This suffix has two inherent low tones, so that the tone pattern is always LL. Inflected nouns therefore behave as polysyllabic nouns of Tone Class I, even as to the tones of the prefixes; except nouns of Noun Classes 8 and 10 which are exceptional. Nouns inflected by the augmentative suffix therefore behave tonally just as nouns doubly inflected by the locative and diminutive suffixes. (See above).

- e.g. unyawo - unyawokazi.  
 intombi - intombikazi.  
 inqola - inqolakazi.  
 udonga - udongakazi.  
 izinyawo - izinyawokazi.  
 izintombi - izintombikazi.  
 izinqola - izinqolakazi.  
 izindonga - izindongakazi.

2. SYNTAX. (~~\*See \*1 and \*2~~). P.T.O.

\* Note: the displaced high tone disappears on double inflection when a high tone follows, but not when a low tone follows. This is not so on single inflection.

2. Syntax. Here the subject of study is the grammatical behaviour between words, or rather the grammatical relationship between words. From the point of view of tonal analysis, the object is to discover how the flow of tone proceeds from one word to another, and on investigation it is seen that this flow proceeds in accordance with the basic principle of polarity, as is to be expected. Thus where one word ends with a high tone and the next word begins with a low tone, there is nothing to note except that the following high tone will be lower in pitch than that high tone, owing to the factor of downdrift intonation. And where one word ends with a low tone and the next word begins with a high tone, there is nothing to note, except that the preceding high tone will be higher in pitch than that high tone, for the same reason. A low tone always marks a downstep of tonal level. Also where two low tones come into contact at the syntactical level, there is nothing to note, as they are tones of the non-magnetic pole, but where two high tones come into contact at the syntactical level, the second one becomes raised in pitch, as they are tones of the magnetic pole and therefore cannot follow one another on the same level.

The tones of initial tonally neutral syllables are determined at the syntactical level. Such syllables are the first syllables of the prefixes of double prefix (but not z-prefix) disyllabic nouns

of Tone Classes I and II and IIIA, of double prefix and z-prefix monosyllabic nouns of Tone Class IV, and of trisyllabic nouns of Tone Class I; also the locative prefixes e-<sup>o-</sup> and ku- used with all these nouns, as they have no tonal distinctiveness of their own; also the dependent prefixes (possessive concords) used with all these nouns, for the same reason, and with z-prefix disyllabic nouns of Tone Classes I and II, upon which they have the peculiar effect of neutralising the low tone of the prefix. The tones of these initial tonally neutral syllables are determined by a process of tonal duplication of the tone of the final syllable of the foregoing word: a low or raised-low tone determines a low or raised-low tone, a mid tone determines a mid tone, a high tone determines a high tone, the second one being on the same level as the first, being a duplicated high tone. (Normally two high tones cannot follow one another on the same level). Examples of this process of tonal duplication have been given under "Morphology" in Chapters I and II and III.

This accounts for the flow of tone from one word to another in simple straight-forward sentences, but in complex sentences this aspect of the tonal system may be far more complicated. The grammatical relationship between a noun and its relative clause may be shown tonally; the grammatical relationships between subject and predicate and object may be shown tonally, especially when the normal word order is changed; adverbial clauses may have tonal characteristics significant at the syntactical level. This most important investigation is beyond the scope of this thesis however, which limits itself to tonology and the tonal grammar of nouns.

## CHAPTER II.

MONOSYLLABIC NOUNS.A. LEXICAL LEVEL.

1. Noun Roots. The final two syllables of the uninflected monosyllabic noun include the second syllable of the prefix, and the tone class is determined by the tone pattern on these two syllables. There are only two possibilities of tone pattern here, the tone of the root being either high or low and the tone of the second syllable of the prefix being either low or high, according to the principle of polarity.

Here are some examples:-

II	IV
um̄-tshā	um̄-ntu
um̄-thī	um̄-zi
uóu-so	isi-tsha
ama-nzí	isi-lo
isi-fo	ili-fu



## 2. Noun Prefixes

(a) Double Prefixes. (Classes 1, 2, 2(a), 3, 4, 5, 6, 7, 11, 14, 15, 18.).

The general rule as for the double prefixes of disyllabic nouns applies. The process of tonal adaptation to the tone of the root operating according to the principle of polarity, determines that the prefix tones are HL with high tone nouns and LH with low tone nouns.

e.g.  $\bar{u}m\bar{u}thi$ ,  $\bar{u}m\bar{a}ntu$ ,  $\bar{i}s\bar{i}f\bar{o}$ ,  $\bar{i}s\bar{i}l\bar{o}$ ,  $\bar{a}m\bar{a}nz\bar{i}$ .

With nouns of Tone Class IV the first syllable of the prefix is tonally neutral and therefore subject to tonal duplication, but with nouns of Tone Class II the second syllables of the prefix is not tonally neutral as it bears a grammatically significant low tone, the tone class being determined by the tone pattern on the final two syllables. Nevertheless when the noun occurs in quick speech, especially at the beginning of the sentence, the influence of tonal context, by a process of tonal assimilation, may cause a change of toneme from low to high, in which event there is a corresponding change of toneme from high to low on the final syllable according to the principle of polarity. With nouns of Noun Classes 8 and 10, these changes cannot occur because of the voiced consonant.

e.g.  $\left\{ \begin{array}{l} \bar{i}s\bar{i}f\bar{o} \text{ sesingulisa kakhulu.} \\ \bar{i}s\bar{i}f\bar{o} \text{ sesingulisa kakhulu. (quick speech - changes of toneme).} \\ \bar{i}z\bar{i}f\bar{o} \text{ sezingulisa kakhulu.} \\ \bar{u}m\bar{u}th\bar{i} \text{ omuhle uzomsindisa.} \\ \bar{u}m\bar{u}th\bar{i} \text{ omuhle uzomsindisa. (quick speech- changes of toneme).} \end{array} \right.$

These changes of toneme are more common here than with disyllabic nouns, probably because the syllable in question is a root syllable with lexical tone in the latter case, and only a prefix syllable with grammatical tone in the former case, more susceptible therefore to outside influence.

The long vowel prefixes of Classes 5 and 11 and 2(a) follow the same pattern of behaviour.

e.g. full form: ilizwe.	short form: iizwe or izwe.
full form: ilizwi.	short form: iizwi or izwi.
full form: uluthi.	short form: uuthi or uthi.

In quick speech the prefix is often contracted to a single syllable, in which case the tone is no longer rising or falling but simply high. With nouns of Tone Class II this causes the disappearance of the final high tone, according to the principle of polarity.

e.g. izwe, izwi, uthi.

Here it should be noted that double prefix disyllabic nouns whose roots begin with a vowel instead of with a consonant do not follow this pattern of behaviour but that of single prefix disyllabic nouns, and the prefixes behave as single prefixes before disyllabic roots and not as double prefixes before monosyllabic roots.

This type of noun has already been noted under Chapter IA 2(b)

(b) Single Prefixes. (Classes 1(a), 9, 16).

Seeing that the prefix consists of one syllable only, the tone of the prefix is always high, according to the general rule. Unlike the single prefixes of disyllabic nouns, here there seems to be an attempt to make the single prefixes fit the pattern of the double prefixes, for the tones are high-rising with low tone nouns and high-falling with high tone nouns. This is because the penultimate lengthening coincides with the prefix. In quick speech however, these rising and falling tones become high-level tones, often with nouns of Tone Class IV and not so often with nouns of Tone Class II, when the toneme of the root changes from high to low according to the principle of polarity.

e.g. ingwe (slow speech).	ingwe (quick speech).
inja (slow speech).	inja (quick speech).
invu (slow speech).	invu (quick speech).

(c) Z-Prefixes. (Classes 8 and 10).

The general rule applies quite regularly here, the principle of polarity determining that the prefix tones are HL with high tone nouns and LH with low tone nouns. The process of tonal displacement does not operate here because tonal displacement on to a final

syllable can never take place, so that when the high tone falls on the second syllable of the prefix, that syllable is forced to bear it.

e.g.  $\bar{i}zinj\acute{a}$ ,  $\bar{i}zimv\acute{u}$ ,  $\bar{i}zifo\bar{.}$  (Tone Class II).

$i\acute{z}ingwe$ ,  $i\acute{z}itsha$ ,  $i\acute{z}il\acute{o}$ . (Tone Class IV).

## B. GRAMMATICAL LEVEL.

### 1. Morphology.

#### (a) Prefixal inflection.

##### (i) Independent prefixes or extra prefixes.

#### (a) Double prefix nouns.

With nouns of Tone Class IV, where the first syllable of the noun prefix is tonally neutral, the tone of that syllable becomes low on inflection.

e.g.  $\bar{i}ndlu\ \bar{n}om\bar{u}zi\ \bar{w}onke\ kushanelwe\ kahle.$

wangena endlini  $\bar{n}gesu\ (\bar{n}gel\bar{i}su)\ lobuqili.$

wasiyenga  $\bar{n}goju\ (\bar{n}gol\bar{u}ju)\ isilwane.$

With nouns of Tone Class II, where the first syllable of the noun prefix is high in tone, tonal displacement takes place, resulting in a high-level tone on the penultimate syllable in quick speech or a high-falling tone in slow speech.

e.g.  $\{ \text{ungaqabuka umuzi } \bar{n}gom\bar{u}thi\ \bar{o}m\acute{u}de. \text{ (quick speech).}$

$\{ \text{ungaqab uka umuzi } \bar{n}gom\bar{u}thi\ \bar{o}m\acute{u}de. \text{ (slow speech).}$

$kukhulile\ kahle\ izihlahla\ \bar{n}em\bar{i}thi.$

#### (b) Single prefix nouns.

With nouns of Tone Class IV the coincidence of the low tone of the extra prefix with the high-rising tone of the noun prefix in slow speech or the high-level tone of the noun prefix in quick speech, results in a high-rising tone.

e.g.  $i\bar{s}ilo\ \bar{n}engwe\ zazilwa.$

With nouns of Tone Class II the coincidence of the low tone of the extra prefix with the high-falling tone of the noun prefix in slow speech results in a high-rising-falling tone, and

with the high-level tone of the noun prefix in quick speech results in a high-rising tone.

- e.g. {  $\bar{u}m\bar{f}ana \hat{n}enja \bar{y}akhe$  usekhaya. (slow speech).  
 $\bar{u}m\bar{f}ana \bar{n}enja \bar{y}akhe$  usekhaya. (quick speech).  
 {  $umfana$  wasixosha isebi  $\hat{n}enja \bar{y}akhe$ . (slow speech).  
 $umfana$  wasixosha isebi  $\bar{n}enja \bar{y}akhe$ . (quick speech).  
 $\bar{u}baba \bar{w}abonga \bar{a}mathongo \hat{n}gemvu$ .

(c) Z-prefix nouns.

With nouns of Toen Class IV, where the first syllable of the noun prefix is tonally neutral, the result of inflection is a low tone.

- e.g.  $\bar{u}m\bar{z}i \bar{n}ezindlu \bar{z}awo$  ushanelwe kahle.

With nouns of Tone Class II, where the first syllable of the noun prefix is high in tone, the result of inflection is a high-rising tone, tonal displacement being impossible here.

- e.g.  $\bar{u}m\bar{f}ana \hat{n}ezinja \bar{z}akhe$  usekhaya.  
 $a\bar{b}afana \bar{b}azixosha$  isebi  $\hat{n}ezinja \bar{z}abo$ .  
 $\bar{l}ababantu \bar{b}abonga \bar{a}mathongo \hat{n}gezimvu$ .

(ii) "Copulative" prefixes.

(a) Double prefix nouns.

- IV.  $\bar{u}m\bar{z}i - ng/\bar{u}m\bar{z}i$ .  $\bar{i}silo - y/\bar{i}silo$ .  $\bar{i}su - y/\bar{i}su$ .  
 II.  $\bar{u}m\bar{u}thi - ng/\bar{u}m\bar{u}thi$ .  $\bar{i}sifo - y/\bar{i}sifo$ .

(b) Single prefix nouns.

- IV.  $\bar{i}ngwe - y/\bar{i}ngwe$ .  
 II.  $\bar{i}nja - y/\hat{i}nja$ .

(c) Z-prefix nouns.

- IV.  $\bar{i}zindlu - y/\bar{i}zindlu$ .  $\bar{i}zilo - y/\bar{i}zilo$ .  
 II.  $\bar{i}zinja - y/\hat{i}zinja$ .  $\bar{i}zifo - y/\bar{i}zifo$ .

(iii) Dependent prefixes or possessive concords.

Monosyllabic nouns follow the pattern of disyllabic nouns on inflection by the dependent prefix, bearing in mind the tonal behaviour of the uninflected nouns.

With nouns of Tone Class IV, where the tone of the root is low and the first syllable of the noun prefix is consequently tonally neutral, the tone of the concord is determined by tonal duplication of the final tone of the preceding noun, except that the tone of z-concords is always low.

- e.g.  $\bar{u}z\bar{i}ph\bar{o} \bar{l}w\bar{e}s\bar{i}l\bar{o} \bar{l}u\bar{b}u\bar{k}h\bar{a}l\bar{o}.$  }  
 $\bar{i}z\bar{i}n\bar{z}i\bar{p}h\bar{o} \bar{z}\bar{e}s\bar{i}l\bar{o} \bar{z}i\bar{b}u\bar{k}h\bar{a}l\bar{i}.$  }  
 $\bar{i}z\bar{i}n\bar{z}i\bar{p}h\bar{o} \bar{z}\bar{e}z\bar{i}l\bar{o} \bar{z}i\bar{b}u\bar{k}h\bar{a}l\bar{i}.$  } Double prefix nouns.  
 $\bar{i}s\bar{i}b\bar{a}y\bar{a} \bar{s}o\bar{m}u\bar{z}i \bar{s}i\bar{k}h\bar{u}l\bar{u}.$  }  
 $\bar{i}z\bar{i}b\bar{a}y\bar{a} \bar{z}\bar{e}m\bar{i}z\bar{i} \bar{z}i\bar{k}h\bar{u}l\bar{u}.$  }  
 {  $\bar{u}z\bar{i}ph\bar{o} \bar{l}w\bar{e}n\bar{g}w\bar{e} \bar{l}u\bar{b}u\bar{k}h\bar{a}l\bar{i}.$  (slow speech). }  
 {  $\bar{u}z\bar{i}ph\bar{o} \bar{l}w\bar{e}n\bar{g}w\bar{e} \bar{l}u\bar{b}u\bar{k}h\bar{a}l\bar{i}.$  (quick speech). } Single prefix nouns.  
 $\bar{i}z\bar{i}n\bar{z}i\bar{p}h\bar{o} \bar{z}\bar{e}z\bar{i}n\bar{g}w\bar{e} \bar{z}i\bar{b}u\bar{k}h\bar{a}l\bar{i}.$  }

With nouns of Tone Class II, where the tone of the root is high and the first syllable of the noun prefix is consequently high in tone, the tone of the concord is high, except that with z-concords tonal displacement of the high tone on to the following syllable takes place wherever possible.

- e.g.  $\bar{i}z\bar{i}z\bar{a}th\bar{u} \bar{z}\bar{e}s\bar{i}f\bar{o} \bar{a}s\bar{a}z\bar{e}k\bar{i}.$   
 {  $\bar{i}z\bar{i}z\bar{a}th\bar{u} \bar{z}\bar{e}s\bar{i}f\bar{o} \bar{a}s\bar{a}z\bar{e}k\bar{i}.$  (slow speech). }  
 {  $\bar{i}z\bar{i}z\bar{a}th\bar{u} \bar{z}\bar{e}s\bar{i}f\bar{o} \bar{a}s\bar{a}z\bar{e}k\bar{i}.$  (quick speech). }  
 {  $\bar{i}z\bar{i}z\bar{a}th\bar{u} \bar{z}\bar{e}z\bar{i}f\bar{o} \bar{a}s\bar{a}z\bar{e}k\bar{i}.$  (tonal displacement impossible) } Double prefix nouns.  
 {  $\bar{u}z\bar{i}ph\bar{o} \bar{l}w\bar{e}n\bar{j}\bar{a} \bar{l}u\bar{b}u\bar{k}h\bar{a}l\bar{i}.$  (slow speech). }  
 {  $\bar{u}z\bar{i}ph\bar{o} \bar{l}w\bar{e}n\bar{j}\bar{a} \bar{l}u\bar{b}u\bar{k}h\bar{a}l\bar{i}.$  (quick speech). } Single prefix nouns.  
 {  $\bar{i}z\bar{i}n\bar{z}i\bar{p}h\bar{o} \bar{z}\bar{e}n\bar{j}\bar{a} \bar{z}i\bar{b}u\bar{k}h\bar{a}l\bar{i}.$  (slow speech). }  
 {  $\bar{i}z\bar{i}n\bar{z}i\bar{p}h\bar{o} \bar{z}\bar{e}n\bar{j}\bar{a} \bar{z}i\bar{b}u\bar{k}h\bar{a}l\bar{i}.$  (quick speech). }  
 {  $\bar{i}z\bar{i}n\bar{z}i\bar{p}h\bar{o} \bar{z}\bar{e}z\bar{i}n\bar{j}\bar{a} \bar{z}i\bar{b}u\bar{k}h\bar{a}l\bar{i}.$  (tonal displacement impossible). }

(b) Suffixal inflection.

(1) (a) The locative suffix,  $-.ni.$

(b) The diminutive suffix,  $-ana.$

The general rule as for disyllabic nouns applies quite regularly, so that on inflection nouns of Tone Class II change to Tone Class IV, with tone pattern HL, and nouns of Tone Class IV

change to Tone Class I, with tone pattern LL. All monosyllabic nouns therefore behave as disyllabic nouns of these two tone classes on inflection.

All Noun Classes other than Classes 8 and 10.

e.g. Final high tone nouns.

isifo - esifeni.

umuthi - emthini.

ubuso - ebusweni.

into - entweni.

inja - enjeni.

e.g. Final low tone nouns.

isilo - esilweni.

umuzi - emzini.

ifu - efini.

izwe - ezweni.

indlu - endlini.

Noun Classes 8 and 10.

e.g. Final high tone nouns.

izinto - ezintweni.

izinja - ezinjeni.

e.g. Final low tone nouns.

izilo - ezilweni. (tonal displacement).

izitsha - ezitsheni. (tonal displacement).

izindlu - ezindlini. (tonal displacement impossible).

Note that with the uninflected noun tonal displacement cannot take place because the following syllable is the final syllable, but with the inflected noun this is not so.

(ii) Double suffixal inflection.

On single inflection monosyllabic nouns of Tone Classes II and IV behave tonally as disyllabic nouns of Tone Classes IV and I respectively; and on double inflection all monosyllabic nouns behave as trisyllabic nouns of Tone Class I. Monosyllabic nouns therefore

follow the pattern of disyllabic nouns exactly, even as to the exception of nouns of Noun Classes 8 and 10.

All Noun Classes other than Classes 8 and 10.

e.g. Final high tone nouns.

úúsó - úúswana - ééúswaneni.

íntó - íntwana - éntwaneni.

ínjá - ínjana - énjāneni.

e.g. Final low tone nouns.

isilo - isilwana - isilwaneni.

indlu - indlwana - endlwaneni.

Noun Classes 8 and 10.

e.g. Final high tone nouns.

ízinto - ízintwana - ezintwaneni.

ízinjá - ízinjana - ezinjāneni.

e.g. Final low tone nouns.

izilo - izilwana - ezilwaneni.

izindlu - izindlwana - ezindlwaneni.

(iii) The augmentative suffix, -kazi.

Nouns inflected by this suffix behave tonally just as nouns doubly inflected by the locative and diminutive suffixes (see above), thus following exactly the pattern of disyllabic nouns.

e.g. itshe - itshekazi.

into - intokazi.

indlu - indlukazi.

2. SYNTAX. (See the relevant section in Chapter I).

## CHAPTER III.

TRISYLLABIC NOUNS.A. LEXICAL LEVEL.

1. Noun Roots. The final two syllables of the uninflected trisyllabic noun exclude the first syllable of the root, and the tone class is determined by the tone pattern on these two syllables only. The tone of the first syllable of the root is not significant lexically, being either high or low according to principles of polarity.

Here are some examples:-

I.	III.	IV.
um-khuhlane	i-ziúko. (mirror).	i-ziúko. (ford).
i-gagasi.	um-hlabathi	um-khiwane
i-zambane	um-sebenzi	in-nhliziyo
in-nyathelo	um-thungulu	u-hlangothi
u-nyembezi	u-dondolo	i-bubesi, in-ngonyama
	u-shikishi	in-mpukane, in-ntuthwane
		u-dengezi and u-venvane*

NOTE: Examples of trisyllabic nouns of Tone Class II are wanting.

2. Noun Prefixes.

(a) (b) (c) Double prefixes, single prefixes, and z-prefixes may be dealt with all together. Only the tones of the final two syllables of the noun are lexically significant, and grammatically significant in constituting the tonal shape (tonetics) of the tone pattern (tonology) of the tone class (tonal grammar), the tones of the remaining syllables being grammatically determined by a process of tonal adaptation to the tone of the second or penultimate syllable of the root, according to the principle of polarity. Here however there are usually three syllables to be adapted, whereas with disyllabic and monosyllabic nouns there are usually only two syllables, the

\* These two outstanding exceptions have a high tone instead of a low tone on the first syllable of the root. This high tone persists even on inflection, where the syllable is normally tonally neutral and therefore low in tone, even if it was high in tone beforehand, e.g. ezindengezini & ezimvenvaneni. The syllables "de" "ve" seem to have fixed high tones regardless of the



syllables of the prefix.

With low tone nouns the principle of polarity determines that the tone on the first syllable of the root is high, the remaining syllables (the syllables of the prefix) being tonally neutral and therefore low in tone, actually raised-low tones if the consonants are not voiced, owing to the factor of downdrift intonation. In any position other than initial however, these syllables being tonally neutral, are subject to tonal duplication.

e.g.  $\overset{1}{\text{umkhuhlane}} \text{ wacishe wamsusa.}$  )  
 $\text{amagagasi abonga njengezilo.}$  ) (initial position).  
 $\text{lowomuthi awuzukwahlula } \overset{1}{\text{umkhuhlane}}.$  )  
 $\text{lowomuthi wahlula } \overset{1}{\text{umkhuhlane}}.$  ) (final position).  
 $\text{abantwana besaba } \overset{1}{\text{amagagasi}}.$  )

With nouns of Tone Class IV the principle of polarity determines that the tone on the first syllable of the prefix is high, the remaining syllables intervening between this syllable and the penultimate syllable being tonally neutral and therefore low in tone, actually raised-low tones if the consonants are not voiced, owing to the factor of tonal context.

e.g.  $\overset{1}{\text{umkhuwane}} \text{ ukhula ezweni lakithi.}$   
 $\overset{1}{\text{uhlangothi}} \text{ lwethole luhlatshiwe.}$   
 $\overset{1}{\text{izinhlangothi}} \text{ zethole zihlatshiwe.}$

In quick speech with single prefix nouns, where there is only one tonally neutral syllable, the tone on that syllable may be raised from low to high, due to the influence of tonal context, especially if that syllable has an ejective consonant. If so, the high tone on the following syllable becomes raised in pitch, according to the principle of polarity.

e.g.  $\overset{1}{\text{impukane}}$  (slow speech).  $\overset{1}{\text{Impukane}}$  (quick speech).  
 $\overset{1}{\text{izimpukane}} \text{ ziyayihlupha inkomo.}$  (voiced consonant).  
 $\overset{1}{\text{intuthwane}}$  (slow speech).  $\overset{1}{\text{intuthwane}}$  (quick speech).  
 $\overset{1}{\text{izintuthwane}} \text{ ziyalidla iphela.}$  (voiced consonant).

Trisyllabic nouns of Tone Class IIIB are quite regular.

e.g. intombi iyashanela ūmhlābāthi.  
 ikhehla lilulahlile udondolo.

Trisyllabic nouns of Tone Class IIIA are exceptional in the same way as the disyllabic nouns, following either the pattern for double prefix#disyllabic nouns or the pattern for z-prefix#disyllabic nouns. In the former case the prefix tones are LH, and the trisyllabic noun# is adapted to fit this pattern, e.g. ūmhlābāthi and umsebenzi. In the latter case the prefix tones are HL, and the trisyllabic noun# is adapted to fit this pattern, including the consequent changes in root tones, e.g. ūmhlābāthi and umsebenzi. The latter is by far the most common pattern, and where there is a voiced consonant either in the second syllable of the prefix or the first syllable of the root, there is no alternative, the latter pattern being the only one, e.g. udondolo and izindondolo.

e.g. ūmhlābāthi uxubene nomanyolo. (alternative form: ūmhlābāthi —).  
 umsebenzi uyamsinda umfana. (alternative form: umsebenzi —).  
 udondolo lwexhegu lude.  
 ushikishi luphume ibandla.  
 izinshikishi ziphume ibandla.  
 umthungulu ukhula ezweni lakithi. (alternative form: umthungulu  
 (female voice) —, or umthungulu (male voice) —).

The distinction between high tone nouns and low tone nouns was seen to be significant to the determination of the prefix tones of disyllabic and monosyllabic nouns, as, with the exception of double prefix disyllabic nouns of Tone Class IIIA, the grammatically significant high tone falls on the first syllable of the prefix of high tone nouns and on the second syllable of the prefix of low tone nouns. This distinction is similarly significant with trisyllabic nouns, as the grammatically significant high tone falls on the first syllable of the prefix of high tone nouns and on the first syllable of the root of low tone nouns, the remaining syllables being tonally neutral.

The situation for trisyllabic and polysyllabic nouns is summarised in the following table:-

Low tone nouns: the high tone falls on the first syllable of the root, the preceding syllables being tonally neutral and therefore low in tone, but subject to outside influences, particularly tonal duplication.

I. L.L. . . H.LL.

(II. L.L. . . H. LH.) (Examples of trisyllabic nouns of this Tone Class are wanting).

High tone nouns: the high tone falls on the first syllable of the prefix, the succeeding syllables being tonally neutral and therefore low in tone, but subject to outside influences.

IIIA. H.L.L. . . LH. (< HH).

IIIB. H.L.L. . . H-L L.

IV H.L.L. . . HL.

## B. GRAMMATICAL LEVEL.

### 1. Morphology.

#### (a) Prefixal inflection.

##### (i) Independent prefixes or extra prefixes.

With low tone nouns, where the first syllable of the noun prefix is tonally neutral, the result of inflection is a low tone, e.g. nomiduhlane and ngonyembézi.

With nouns of Tone Class IV, where the first syllable of the noun prefix is high in tone, the result of inflection is the tonal displacement of that high tone on to the second syllable of the prefix, e.g. nomkhiwane, nebuóesi, ngodéngézi. With single prefix nouns tonal displacement takes place on to the first syllable of the root: in slow speech the downstep on the penultimate syllable still occurs although there is now no low tone to mark it, and in quick speech the situation does not arise, e.g.

e.g. nempukane (< impukane) and sentuthwane (< intuthwane) in slow speech:  
nempukane (< impukane) and sentuthwane (< intuthwane) in quick speech.

With *z*-prefix nouns tonal displacement is not possible, so that high-

Nouns of Tone Class IIIB follow the example of nouns of Tone Class IV, e.g. nomhlabathi, ngomsebenzi, ngezindandolo.

With trisyllabic nouns of Tone Class IIIA, the tonal change accompanying inflection by the extra prefix varies according as to whether the pattern for double prefix disyllabic nouns or for z-prefix disyllabic nouns is followed. Where there is a voiced consonant either in the second syllable of the prefix or the first syllable of the root, there is no alternative, e.g. nodandolo and ngezindandolo. Otherwise there are two alternatives, e.g. nomhlabathi or nomhlabathi, ngomsebenzi or ngomsebenzi. With the uninflected noun, the latter pattern is by far the most common, but with the inflected noun the former pattern is the most common. This is probably due to the fact that with the latter pattern, tonal displacement reduces the number of tonally neutral syllables to the first syllable of the foot and a single tonally neutral syllable tends to be high rather than low owing to tonal assimilation. The pattern to be followed is therefore the former rather than the latter, for it is only after a low tone that a mid tone becomes low itself.

(ii) "Copulative" prefixes.

The "copulative" prefix behaves in exactly the same way as the extra prefix.

(iii) Dependent prefixes or possessive concords.

Trisyllabic nouns follow the pattern of disyllabic nouns on inflection by the dependent prefix, bearing in mind the tonal behaviour of the uninflected noun.

With low tone nouns where the first syllable of the noun prefix is tonally neutral, the tone of the concord is determined by tonal duplication of the final tone of the preceding noun, except that the tone of z-concords is always low.

e.g. isizathu somkhuhlane ---.

izizathu zomkhuhlane ---.

With high tone nouns where the first syllable of the noun prefix is high in tone, the tone of the concord is high, except that

with z-concords tonal displacement of the high tone on to the following syllable takes place wherever possible.

e.g.  $\bar{u}b\acute{u}d\acute{e} \bar{b}omkhiwane \text{ ---}$ .  
 $\bar{u}b\acute{u}d\acute{e} \bar{b}omthungulu \text{ ---}$ .  
 $\left\{ \begin{array}{l} \bar{u}b\acute{u}d\acute{e} \bar{b}omthungulu \text{ (female voice) ---, (less common form -} \\ \text{see "noun prefixes")}. \\ \bar{u}b\acute{u}d\acute{e} \bar{b}omthungulu \text{ (male voice) ---.} \end{array} \right.$   
 $\bar{i}zithelo \bar{z}omkhiwane \text{ ---}$ .  
 $\left\{ \begin{array}{l} \bar{i}zithelo \bar{z}omthungulu \text{ (male voice) ---.} \\ \bar{i}zithelo \bar{z}omthungulu \text{ (female voice) ---.} \end{array} \right.$   
 $\bar{i}zithelo \bar{z}omthungulu \text{ ---}$ . (less common form--see "extra prefixes").

(b) Suffixal inflection.

(i) (a) The locative suffix,  $-ni$ .

(b) The diminutive suffix,  $-ana$ .

The general rule as for disyllabic nouns applies quite regularly, so that on inflection, nouns of Tone Classes II and III (final high tone nouns) change to Tone Class IV with tone pattern HL, and nouns of Tone Classes I and IV (final low tone nouns) change to Tone Class I with tone pattern LL. All trisyllabic nouns therefore behave as polysyllabic nouns of these two tone classes on inflection.

e.g. Final high tone nouns.

$\bar{u}mhlabathi - \bar{e}mhlabathini$ .  
 $\bar{u}msebenzi - \bar{e}msebenzini$ .  
 $\bar{u}mthungulu - \bar{e}mthungulwini$ .  
 $\bar{u}dondolo - \bar{e}dondolweni$ .  
 $\bar{i}zindondolo - \bar{e}zindondolweni$ .  
 $\bar{i}zi\acute{u}ko \text{ (mirror) - } \bar{e}zi\acute{u}kweni$ .

e.g. Final low tone nouns.

$\acute{u}mkhuhlane - \acute{e}mkhuhlaneni$ .  
 $\acute{i}gagasi - \acute{e}gagasini$ . (tonal displacement).  
 $\acute{u}nyembezi - \acute{e}nyembézini$ . (tonal displacement impossible).  
 $\acute{u}mkhiwane - \acute{e}mkhiwaneni$ .  
 $\acute{i}ngonyama - \acute{e}ngonyameni$ .  
 $\acute{i}mpukane - \acute{e}mpukaneni$ .

uhlangothi - ohlangothini.

izinhlangothi - ezinhlangothini.

izi**ú**ko (ford) - ezi**ú**kweni.

(ii) Double suffixal inflection.

On single inflection trisyllabic nouns behave as above, and on double inflection all trisyllabic nouns behave as polysyllabic nouns of Tone Class I, thus following exactly the pattern of disyllabic nouns.

e.g. umthungulu - umthungulwana - emthungulwaneni.

umkhiwane - umkhiwanyana - emkhiwanyaneni.

(iii) The augmentative suffix, -kazi.

Nouns inflected by this suffix behave tonally just as nouns doubly inflected by the locative and diminutive suffixes (see above), thus following exactly the pattern of disyllabic nouns.

2. SYNTAX. (See the relevant Section in Chapter I).

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## PART FOUR.

TONOLOGICAL PRINCIPLES.

This is a summary of the rules of tonology (Part II) and the rules and processes of tonal grammar (Part III), all of which operate according to the tonological principles obtaining in the language. The basic principle underlying the tonal system of Zulu is the principle of polarity fully explained in "The Metaphysics of Zulu Tonology". An understanding of this principle is essential to an understanding of the operation of the rules and processes of tonal grammar, and the imagery of the tonal compass with its two poles, the magnetic high pole and the non-magnetic low pole, and the consequent tonal attraction towards the magnetic pole and tonal repulsion between tones of that pole, considerably clarifies the principle.

## CHAPTER I.

AT THE LEXICAL LEVEL.

The principle of polarity determines the rule that two high tones cannot follow one another on the same level, because of the tonal repulsion between tones of the magnetic high pole. Thus the high tones of nouns of Tone Class IIIA with tone pattern HH, are realised in speech as mid-tones (A3);\* and if the low tones of nouns of Tone Class I with tone pattern LL become raised to high or if the low tone of nouns of Tone Class IV with tone pattern HL becomes raised to high, due to the influence of tonal context, these high tones are also realised in speech as mid-tones for the same reason (B2). If however the low tone of nouns of Tone Class II with tone pattern LH becomes raised to high due to tonal displacement or to the influence of tonal context, the result is that the high tone becomes low, but the reason is the same (B2 and B6). This situation is common with monosyllabic nouns, and perhaps shows the existence of tonal repulsion between tones of the magnetic pole more clearly than the other examples.

## CHAPTER II.

AT THE GRAMMATICAL LEVEL.A. At the level of Morphology.

As at the lexical level, the principle of polarity determines the rule that two high tones cannot follow one another on the same level. The rule operates differently at this level however, and where two high tones comes into contact with one another, the second one becomes raised in pitch by a process of tonal dissimilation of high tones, because of the tonal repulsion between tones of the magnetic pole (A5). The process of tonal assimilation of low tones on tonally neutral syllables which gives rise to raised-low tones, is due to the influence of tonal context, and this process, like the process of tonal dissimilation, operates in accordance with the principle of polarity, because of the tonal attraction towards the magnetic pole (A6).

The process of tonal adaptation, by means of which the tones of noun prefixes are determined, also operates in accordance with the principle of polarity. The rule for the determination of the tones of noun prefixes is that the prefix must have a high tone on one of its syllables, the other syllable being tonally neutral and therefore low in tone. This rule operates by a process of tonal adaptation to the tone of the first syllable of the root, according to the principle of polarity, so that a high root tone is preceded by a low prefix tone and a low root tone is preceded by a high prefix tone.

The process of tonal displacement, although the cause is external to the tonal system, being due to the fact that a syllable having a voiced consonant cannot bear a high tone, nevertheless operates in accordance with the principle of polarity. Wherever a high tone coincides with a syllable having a voiced consonant, that high tone does not disappear but becomes displaced on to the following syllable, whether it be high-toned or low-toned, provided that the syllable has



Tonal displacement of the high tone on to a low-toned syllable results in the disappearance of the low tone, and here the significance of the principle of polarity becomes apparent: high tones may be displaced but they can never disappear (with very few exceptions), as they belong to the dynamic magnetic pole, but low tones do disappear without the need for any compensation, as they belong to the non-magnetic pole.

The principle of the tone pattern is of fundamental importance to tonal grammar: the tone class and therefore the tonal behaviour of the noun is determined by the tone pattern of the final two syllables, therefore the basic unit. This is certainly true of nouns and nominals (adjectives, relatives, etc.), and perhaps of verbs too, but this has not yet been investigated. This principle applies regardless of the number of syllables of the noun, and that is why all nouns, whether they be disyllabic, monosyllabic, trisyllabic, or polysyllabic, fall into four tone classes, and also why nouns change the tone class on suffixal inflection.

The principle of the tonal neutrality of syllables not having lexically or grammatically significant tone, is closely connected with the principle of the tone pattern. Such syllables are those succeeding the grammatically significant high tone on the first syllable of the prefix of high tone nouns having tone patterns HH and HL, and those preceding the grammatically significant high tone on the third-to-last syllable of low tone nouns having the tone pattern LL and LH. (Disyllabic nouns of Noun Classes 8 and 10 (Z-prefix nouns) are an exception to this rule as both prefix syllables bear grammatically significant tones). It follows that on suffixal inflection, when nouns change the tone class, root syllables previously having lexically and grammatically significant tones and prefix syllables previously having grammatically significant tones, may become tonally neutral, which is why tone in Zulu can never be regarded as a fixed feature of the syllable.

### B. At the Level of Syntax.

The processes of tonal assimilation of low tones owing to the influence of tonal context (A2 and B2), and of tonal dissimilation of high tones (A4), both operate at this level according to the principle of polarity, the former because of the tonal attraction towards the magnetic pole giving rise to raised-low tones, and the latter because of the tonal repulsion between tones of the magnetic pole, giving rise to raised-high tones.

The process of tonal duplication operates at this level to determine the tones of initial tonally neutral syllables. Tonal duplication of a high tone gives rise to an exception to the rule that two high tones cannot follow one another on the same level, but seeing that the second high tone is not a lexically or grammatically significant high tone but simply a high tone by tonal duplication of the first high tone, this is quite in keeping with the principle of polarity.

## CHAPTER III.

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### INTONATION.

The characteristic intonation of the Zulu sentence is the gradual downdrift of tone. This downdrift does not proceed simply with loss of breath, but by means of a series of definite downsteps, each one marking a new level of tone. Although intonation is always a feature of the sentence, in tone languages it operates syllabically, being determined by the tones of the constituent words of the sentence. This is not to say that intonation is the sum total of these tones, but that the downsteps by means of which the downdrift intonation proceeds, are determined by these tones. Intonation is therefore to be analysed at the syllable level and not at the sentence level, because tone is always a feature of the syllable in tone languages.

The characteristic downdrift intonation of Zulu proceeds by means of a series of downsteps which take place both within words and between words. In some Bantu languages each word marks a new level of tone, so that in writing the downsteps are marked by word-division, but in Zulu each low tone marks a new level of tone, so that in writing the downsteps are marked by tone-marking. Thus it is true to say that intonation, an extrinsic part of the sentence, is determined by the intrinsic syllabic tones of the constituent words of the sentence.

The flow of tone from the beginning to the end of the sentence may be stated by these two rules:-

(i) The Downstep Rule: Every low tone marks a tonal downstep and a new level of tone. There is usually only one high tone on each tonal level, and this high tone is lower in pitch than the preceding high tone and higher in pitch than the succeeding high tone. And so proceeds the intonational downdrift.

Actually it is not only every low tone that marks a tonal downstep, but every drop in tone, and this includes raised-low tones, high-falling tones (which are in fact a compromise between high and low), and even mid tones.

(ii) The Upstep Rule: Where there are two high tones on the same tonal level (except duplicated high tones), the second one becomes slightly raised in pitch, thus marking a tonal upstep. This is due to the tonal repulsion between tones of the magnetic pole.

These two rules account for the intonation of simple sentences, but not for compound and complex sentences where one breath is not usually sufficient for the whole sentence. The ultimate cause of downdrift intonation is the outgoing flow of breath, so that the process begins again with each intake of breath. The compound sentence may therefore be regarded, from the point of view of intonation, as two or more simple sentences, the beginning of each coinciding with an intake of breath and a fresh flow of intonation. But the complex

## PART FIVE.

CONCLUSION.

In Part I it was pointed out that the definition of a tone language as "a language having lexically significant tone on each syllable" was not true of Zulu, because Zulu has grammatically as well as lexically significant tone. Here in Part V it can be pointed out that this definition is not true of Zulu, because Zulu has tonally neutral syllables having neither lexically nor grammatically significant tone, as appeared in Part III, the Tonal Grammar of Nouns. The definition given in this thesis of a tone language as "a language having lexically and grammatically significant syllabic tone" is quite true of Zulu however, but this significant tone does not fall on each and every syllable.

Lexical tone is the tone on root syllables, which is significant in indicating the meaning of words just as consonants and vowels do. It is not however a fixed feature of the syllable, as it is subject to the influence of certain consonants, and of grammatical tone. Grammatical tone is the tone on prefix and suffix syllables, which is significant in indicating the grammatical function of words just as the inflections do. As regards the tonal grammar of nouns, the noun prefixes and the dependent prefixes (possessive concord) have no inherent tones, the tones being determined grammatically, but the independent prefixes (extra prefixes) and the "copulative" prefixes, and the suffixes, have inherent low tones. It might be thought that these tones are therefore lexical, but it would be illogical to regard the inherent tones of grammatical formatives ("morphemes") as lexical. Lexical tone is significant at the lexical level and grammatical tone at the grammatical level.

Tone is not a fixed feature of the syllable. It is subject to the influence of certain consonants, the lowering effect of voiced consonants and the raising effect of voiceless ejective consonants (see point A9); but what is far more disturbing to the inherent lexical tones on root syllables is the influence of grammatical tone. In Part III, the Tonal Grammar of Nouns, it was seen how prefixal inflection may cause low lexical tones to become high, because of tonal displacement from prefix syllables on to root syllables; and how suffixal inflection quite cancels the lexical tones on root syllables, because of the principle of the tone pattern. These syllables now become tonally neutral, having before inflection been lexically significant as to meaning and grammatically significant as to function.

The tone pattern determines the tone class, and the tone class determines tonal behaviour. On prefixal inflection the tone pattern may be greatly disguised and on suffixal inflection it disappears altogether, so that on inflection there is very often nothing left of the tone pattern to show the tone class. But there is never any doubt as to tone class, as the tone class of the noun is manifest in its tonal behaviour. This situation with the tone classes is paralleled by the situation with the noun classes. Here the noun prefix determines the noun class, and the noun class determines grammatical behaviour. Where the noun prefix is doubtful, e.g. *isango* and *isondo* (Class 5, not Class 7); *isandla* and *isando* (Class 7, not Class 5); *izinyane* and *izibuko* (Class 5, not Class 8); *inxeba* and *inxiwa* (Class 5, not Class 9); *u6oya* and *u6ovu* (Class 14, not Class 11); the noun class of the noun is manifest in its grammatical behaviour, i.e. in its agreements or concords. There is therefore never any doubt as to noun class, and there is similarly never any doubt as to tone class.

Examples:-

1. Nouns of Tone Classes III and IV in final position are sometimes difficult to distinguish, as the tone on the penultimate syllable

high-falling in both cases, in the former case the High-to-Low Falling Toneme and in the latter case the slightly high-falling allotone of the High Toneme due to final cadence, and the prefix tones are HL in both cases. Tonal behaviour clearly distinguishes the nouns of these two tone classes however, e.g. suffixal inflection: with nouns of Tone Class III, the tone pattern on the final two syllables is HL, and the first syllables of the prefix is high in tone; and with nouns of Tone Class IV, the tone pattern on the final two syllables is LL, and the first syllable of the prefix is tonally neutral. In any position other than final, the difference between the two tone patterns is quite clear of course: HH (ˈˈ) for Tone Class III and HL (ˈˌ) for Tone Class IV.

2. Nouns of Tone Classes I and II with z-prefixes are sometimes difficult to distinguish, as in quick speech the tonal shape of the final two syllables becomes HL in both cases due to tonal displacement, and the prefix tones are LL. Tonal behaviour clearly distinguishes the nouns of these two tone classes however, e.g. suffixal inflection: with nouns of Tone Class I, the tone pattern is LL, and with nouns of Tone Class II, the tone pattern is HL. In slow speech however, the difference between the two tone patterns becomes clearer: (ˈˌ) for Tone Class I and (ˈˈ) for Tone Class II; and in the singular where there is no need for tonal displacement, the difference becomes quite clear: LL (ˌˌ) for Tone Class I and LH (ˌˈ) for Tone Class II.

3. Z-prefix nouns of Tone Classes I and II cannot be distinguished in quick speech from nouns of Tone Class IV as to the tonal shape of the final two syllables, which is HL in all cases. The distinction is shown however, not only by the tones of the noun prefixes which are LL for the former nouns and HL for the latter nouns, but by the tonal behaviour on prefixal inflection. On inflection by the extra prefixes and the "copulative" prefixes, the prefix tones are LL with the former nouns and LH (due to tonal displacement) with the latter

are XL (X represents a duplicated tone) or LL (z-concords) with the former nouns, and HL or LH (z-concords) with the latter nouns. In slow speech however, the difference between the former low tone nouns and the latter high tone nouns becomes clearer by the high-falling tones of the former nouns; and in the singular where there is no need for tonal displacement, the difference becomes quite clear by the low tones of the former nouns.

4. Z-prefix nouns of Tone Class III cannot be distinguished from nouns of Tone Class II as to the tonal shape on the final two syllables, which is LH in both cases. The distinction is shown however, not only by the tones of the noun prefixes, which are HL for the former nouns and LH for the latter nouns, but by the tonal behaviour on prefixal inflection. On inflection by the extra prefixes and the "copulative prefixes, the prefix tones are ( / . ) with the former nouns and ( . - ) with the latter nouns. On inflection by the possessive concords, the prefix <sup>tones</sup> are ( - . ) or ( / . ) (z-concords) with the former nouns, and ( x - ) (x represents a duplicated tone) or ( . - ) (z-concords) with the latter nouns. In the singular the difference between the two tone patterns becomes clear: HH ( - - ) for Tone Class III and LH ( . - ) for Tone Class II; and of course in final position: H-LL ( \ . ) for Tone Class III and LH ( . - ) for Tone Class II:

5. Nouns of Tone Classes I and III in quick speech are sometimes difficult to distinguish, as the tonal shape of the final two syllables is HH ( - - ) in both cases, and the prefix tones are LH. Tonal behaviour clearly distinguishes the nouns of these two tone classes however, e.g. suffixal inflection: with nouns of Tone Class I, the tone pattern on the final two syllables is LL and the first syllables of the prefix is tonally neutral, and with nouns of Tone Class III, the tone pattern on the final two syllables is HL and the first syllable of the prefix is high in tone. In slow speech however, the difference between the two tone patterns becomes clear: LL ( . . )

for Tone Class I, and HH (ˈˈ) for Tone Class III; and of course in final position: LL (ˋˋ) for Tone Class I, and H-LL (ˈˋ) for Tone Class III.

Examples of individual words, taken from the Zulu-English Dictionary.

1. isikhwama (2.4.3.9.), therefore according to the dictionary a noun of Tone Class IV. The tonal behaviour of this noun however, shows it to belong to Tone Class III.

e.g. isikhwama somlungu sigcwele imali.  
 izikhwama zomlungu zigcwele imali.  
 ibulukwe lami alinaso isikhwama.  
 esikhwameni sami kukhona imali encane  
 ezikhwameni zami kukhona imali encane.

2. inyanga (2.3.8.9.), therefore according to the dictionary a noun of Tone Class III. The tonal behaviour of this noun however, shows it to belong to Tone Class I.

e.g. inyanga iyelapha isifo sesalukazi.  
 izinyanga zelapha izifo zonke zaqantu.  
 sengizokuhambela inyanga.  
 enyangeni kukhona imithi eminingi.  
 ezinyangeni kukhona imithi eminingi.

3. inqama (2.9.9.), therefore according to the dictionary a noun of Tone Class I. The tonal behaviour of this noun however, shows it to belong to Tone Class III.

e.g. inqama nempongo ziyalwa.  
 izinqama nezimpongo ziyalwa.  
 uaba uthenga inqama.  
 izimpondo zenqama zisontive.  
 izimpondo zezinqama zisontive.

4. amanzi (2.4.9.). This noun must belong either to Tone Class II (2.4.4.3.) or to Tone Class IV (2.3.9.), and tonal behaviour shows it to belong to the former class, for the locative is emanzini and



disappearance of the final high tone when it coincides with a syllable having a voiced consonant, which often occurs in final position, especially where there is final devocalization, e.g.  $\bar{a}m\bar{a}nz\bar{i}$ , and more especially where there is final elision as well, e.g.  $\bar{a}m\bar{a}nz\bar{i}$ .

5. *ingane* (2.6.9.) and *imfene* (a.6.9.) both belong to the same tone class according to the dictionary, either to Tone Class IV or to Tone Class I. Tonal behaviour however, shows that the former noun belongs to Tone Class IV and the latter noun to Tone Class I. The similarity in tonal shape is due to the lowering effect of the voiced consonant in the former case and to the raising effect of the voiceless ejective consonant in the latter case, but the essential tone patterns are HL and LL respectively.

e.g. $\bar{i}ng\bar{a}n\bar{e}$ isacathula.	$\bar{i}zing\bar{a}n\bar{e}$ zisacathula.
$\bar{i}mf\bar{e}n\bar{e}$ iyakhonkotha.	$\bar{i}zimf\bar{e}n\bar{e}$ ziyakhonkotha.
uyayibeletha $\bar{i}ng\bar{a}n\bar{e}$ .	bayazibeletha $\bar{i}zing\bar{a}n\bar{e}$ .
ngiyayesaba $\bar{i}mf\bar{e}n\bar{e}$ .	ngiyazesaba $\bar{i}zimf\bar{e}n\bar{e}$ .
$\bar{i}zinwele$ $\bar{z}eng\bar{a}n\bar{e}$ zinde.	$\bar{i}zinwele$ $\bar{z}ezing\bar{a}n\bar{e}$ zinde.
$\bar{u}ns\bar{i}l\bar{a}$ $\bar{w}emf\bar{e}n\bar{e}$ mide.	$\bar{i}ms\bar{i}l\bar{a}$ $\bar{y}ezimf\bar{e}n\bar{e}$ mide.
isalukazi $\bar{n}eng\bar{a}n\bar{e}$ bahlezi endlini.	
isalukazi $\bar{n}ezing\bar{a}n\bar{e}$ bahlezi endlini.	
isilo $\bar{n}emf\bar{e}n\bar{e}$ ziyalwa. (quick speech: $\bar{n}emf\bar{e}n\bar{e}$ ).	
isilo $\bar{n}ezimf\bar{e}n\bar{e}$ ziyalwa. (quick speech: $\bar{n}ezimf\bar{e}n\bar{e}$ ).	
$\bar{i}ng\bar{a}n\bar{e}$ : $\bar{e}ng\bar{a}n\bar{e}n\bar{i}$ and $\bar{i}ng\bar{a}n\bar{y}an\bar{a}$ : $\bar{e}ng\bar{a}n\bar{y}an\bar{e}n\bar{i}$ .	
$\bar{i}mf\bar{e}n\bar{e}$ : $\bar{e}mf\bar{e}n\bar{e}n\bar{i}$ and $\bar{i}mf\bar{e}n\bar{y}an\bar{a}$ : $\bar{e}mf\bar{e}n\bar{y}an\bar{e}n\bar{i}$ .	
$\bar{i}zing\bar{a}n\bar{e}$ : $\bar{i}zing\bar{a}n\bar{y}an\bar{a}$ : $\bar{e}zing\bar{a}n\bar{y}an\bar{e}n\bar{i}$ .	
$\bar{i}zimf\bar{e}n\bar{e}$ : $\bar{i}zimf\bar{e}n\bar{y}an\bar{a}$ : $\bar{e}zimf\bar{e}n\bar{y}an\bar{e}n\bar{i}$ .	

These examples clearly show that there is never any doubt as to the tone class of a noun. It is true that there are a few nouns which belong either to one class or to another, depending upon dialectal differences, e.g. *inkuku* (fowl): some speakers treat this noun as a

noun of Tone Class IV, and others as a noun of Tone Class III, but in the speech of each speaker there is never any doubt. Thus where the tone pattern of a noun cannot be known by its tonal shape, due to outside influences, the tone class of the noun may be determined from the tonal behaviour which reflects it, and also the essential tone pattern, although it may never occur in actual speech as the tonal shape symbolising it.

With verbs this point may be even more important, as, due to the wide variety of tonal inflections, it may be very difficult to determine the essential tone pattern of the verb, in which case the tone class must be determined from the tonal behaviour which reflects it. However, this is a matter for further investigation.

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FINIS.