Distinctive Nature of Tone in Gĩtigania

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Abstract:
Tone, as a suprasegmental feature, refers to the use of pitch in a language to distinguish lexical or grammatical meaning. Tone plays a pivotal role in differentiating meaning, word classes, tenses, and moods in Gĩtigania language. This paper describes the distinctive nature of tone in Gĩtigania, focusing on the effect of tone on meaning and word classes as well as tenses and mood. Not only does tone distinguish Gĩtigania lexical items with similar segmental composition, but it also brings about a difference in meaning, indicating that tone is minimally contrasting. The Autosegmental Phonological Theory, as propounded by Goldsmith (1990), was employed in analyzing, interpreting, and discussing the data collected. The target population was the nouns and verbs in Gĩtigania.
Furthermore, this paper used the Judgemental sampling procedure as it allows the researcher to choose desirable and reliable sample members based on one's knowledge and judgement. Approximately one hundred Gĩtigania lexical items, a sample that was deemed adequate, generated through non-participant observation and introspection, were selected for inclusion in this paper. The findings of this paper are anticipated to add to the existing literature in the field of Phonology.

Keywords: Autosegmental, suprasegmental features, tone

1. Introduction

This paper explores and analyses Gĩtigania nouns and verbs for tone based on Autosegmental theory. Tone is marked using diacritics, while nouns and verbs are classified based on tone's lexical and grammatical function. Since Bantu verbs are agglutinating in nature and the class prefix in most Bantu nouns, Gĩtigania being no exceptional takes a low tone. Therefore, nominal and verbal tone analysis is based on stem syllables and various affixes. The tone patterns established help determine the form of tones in Gĩtigania.

1.1. Tone

Bantu languages are typically tonal, while tone is considered an integral part of most African languages. Like consonants and vowels, tone may signal minimal distinctions between syllables and words. Tone languages employ pitch to distinguish word meaning or convey grammatical distinction. Tone is a distinctive feature among Bantu languages, Gĩtigania being no exception. To make lexical or syntactic difference, tonal languages employ levels to pitch; thus, tone performs both lexical and grammatical functions. A distinction between tone languages, whether level or contour, can be drawn based on the type of tones exhibited. Languages with contour tones demonstrate pitch movement whose tones include: Rising (LH), Falling (HL), Rising-Falling (LHL), and Falling-Rising (HLH).

On the other hand, those with level tones take steady pitches like high (H) and low (L) (Pike, 1948). Therefore, level and contour tones distinguish between register tone and contour tone, respectively. According to Hyman (2010), there are three stages of studying a tone system: determining the surface tone contrast by considering words in isolation, discovering tone alterations based on paradigmatic and phrasal contexts, and finally interpreting the data to produce analysis. Mutiga (2002) posits that the absence of tone marking in the orthography of a tone language is a challenge to both the reader and the writer. This is because one is forced to rely on the context for meaning or else make guesses. As a result, reading and acquiring literacy skills become difficult, thus diminishing interest in reading and writing in such languages. She further argues that the lack of tone marking in tonal languages is the inevitable failure to understand and be understood, a factor that may result in communication breakdown. Therefore, tone should be incorporated into the orthography of tonal languages to ease the reading and writing in such languages.

1.2. Verbal Tone

All tonal languages use pitch to express emotional and other paralinguistic information such as contrast and emphasis. Dahl (1985) referred to the tense, aspect, mood, and polarity systems of Bantu languages as the most complex, thus stating that marking them plays an integral part in the system of a Bantu language. According to Marlo (2013), several parts of the verb are involved in marking tense, aspect, mood, and polarity (TAMP) differences. He further stated that each

TAMP construction of the language is defined by a group of properties, including a prefix, final vowel suffix, and tonal suffix that is realized on the final vowel. Sometimes the tense, aspect, negation prefixes, and relative clause markers precede the SM in the pre-initial position (Meeussen, 1967). Nurse and Phillipson (2003:8) described Bantu languages as 'verby'. They stated that the verb is pivotal in a sentence since it incorporates much information. This means that having a one-word sentence made up of a verb with different affixes is possible. Maringah (1987:77), for instance, noted that the Kimbeere verb consists of the following components: negative markers, subject pronoun, tense, indirect object pronoun, root, mood, and suffixes that mark: causative, applicative, stative, reversive passive, and reciprocal. Based on this argument, the Gĩtigania word forms were treated as inflected verbs and thus analyzed for tense and mood.

1.3. Theoretical Framework

This paper adopted the Autosegmental Phonological Theory (APT) as propounded by Goldsmith (1976) in the phonological representation of tone in Gĩtigania. The APT presents tone as a distinctive feature independent from any segmental representation. Goldsmith (1976) observes that APT is an improvement of the theory of generative phonology developed by Chomsky and Halle (1968) in their book *The Sound Patterns of English* (SPE). The SPE model, however, represents sounds in slices or segments consisting of unordered bundles of linearly ordered features. Chomsky and Halle (1968) assumed that features such as tone, stress, and possibly vowel harmony are super-imposed on the segment and both segmental and suprasegmentals were arranged in a row one after another. This assumption that phonological representations consisted of linear segmental and suprasegmental levels was taken for granted, and the question of how these two levels related to each other was not fully addressed. However, around the mid-1970s, several language researchers started to focus on the relationship between segmental and suprasegmentals. APT was initially formalized to address tonal phenomena. It is a multi-linear approach to phonological representations as opposed to the linear one of the SPE model. In APT, distinctive features are viewed as independent from any segmental representations. Goldsmith (1990) observes that there is not always one-to-one mapping of tones to syllables. For example, two tones could occupy one syllable, and two syllables could be occupied by one tone. The ATP describes features as autosegments. The suprasegmental features which are the focus of this study are autosegments and, thus, can be analyzed using ATP terms.

2. Methodology

The target population comprised verbs in Gĩtigania language. Smith (1984) explained that the judgment sampling approach was used in this study since it allows the researcher to choose desirable and reliable sample members based on knowledge and judgment. Three respondents, native speakers with reliable competence in Gĩtigania, were selected based on their accessibility during the research period in order to ascertain the correctness of tone from the recorded list of word forms. The sample size, which was deemed adequate data for analysis, consisted of nouns and verbs from Gĩtigania. The research adopted the use of oral interview, non-participant observation, and introspection to collect data from all the respondents. The generated data was captured through tape recording and note-making. Tone was further detected through humming and whistling of the words and then transcribed, classified, and analyzed based on tonal functions.

2.1. Gĩtigania Verb

Typically, Gĩtigania language has both derivational and inflectional affixes. Morphologically, Gĩtigania is an agglutinating language. According to Trask (1999), a word in an agglutinating language consists of a neat linear sequence of morphemes that are all clearly recognizable. In Gĩtigania, these morphemes are meaningful affixes attached to the verb to give it various meanings. These affixes are realized through the inflection and derivation processes of the verb.

3. Functions of Tone

Tone serves a lexical and grammatical function in Gĩtigania. This is demonstrated using minimal pairs obtained from the word classes under study. Other than tone being minimally distinctive in each grammatical category, it can also be used to distinguish grammatical categories or word classes and mark a difference in tenses and mood.

Welmer (1973) stated that one of the functions of tone is to set apart different lexical items and grammatical features in a language. He posits that just like words that differ in any other way, lexical items that differ only in tone are different words. This, therefore, means that tones are phonemes serving a distinctive role, just like consonants and vowels. Aderibigbe (2012), on the other hand, states that tone performs part of the lexical information of a word which implies that a difference in pitch is used contrastively to signal a lexical difference such that phonemes or words with similar forms can be differentiated based on tone. Tone is, therefore, critical as variation could bring about a difference in meaning, word class, tense, and mood.

3.1. Lexical Function of Tone: Meaning

Tone in Gĩtigania distinguishes the meaning of identical segments or words within a word class. The following minimal pairs are tonally distinctive.

Word	Tone	Gloss
Ĩrá	HH	'bleed'
Ĩrà	HL	'go for'
Ĩrà	LL	'tell'
Réà	HL	'pay'
Rèá	LH	'decline'

Rèà	LL	'eat'	
Réá	HH	'elongate'	
Ữrà	HL	'kill'	
Ữrá	LH	'beat'	
Ữrá	HH	'buy'	
Ữrà	LL	'get lost'	

3.2. Lexical Function of Tone: Word Class

Other than differentiating word meaning in a grammatical category, tone also distinguishes the grammatical categories of words sharing identical segmental composition. Distinctive tones and tone patterns in Gĩtigania nouns and verbs are analysed and given an APT representation to foreground the distinctive role of tone as shown below:

Word	Tone	Gloss	Class
Àkà	HL	'women'	noun
Áká	HH	'build'	verb
Ìnyá	LH	'energy'	noun
Ínyà	HL	'soften'	verb
Ìnyà	LL	'Four'	noun
Ínyá	HH	'squeeze'	verb
Rìngá	LH	'slasher'	noun
Ríngà	HL	'hit'	verb'
Thà	L	'watch'	noun
Thá	H	'disguise'	verb

Regarding the last lexical item in 2 above, tone labels and APT representations are used to highlight the lexical function of tone as illustrated. The tone patterns displayed are further mapped on tonal charts regarding Autosegmental Phonological Theory.

```
Thà /ða /        'Watch –Noun'
    / ða /       'Phonemic tier'
    CV           'CV tier'
     L           'Tonal tier'
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Thà/ða /         'watch –Noun'
     σ           'syllabic tier'
    / \
   C   V         'CV tier'
  /\   |
 T  h  a          'graphemic tier'
        |
        L        'tonal tier'
```

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Thá /ða /        'Disguise –verb'
    / ða /       'Phonemic tier'
    CV           'CV tier'
     H           'Tonal tier'
```

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Thá/ða /         'disguise –verb'
     σ           'syllabic tier'
    / \
   C   V         'CV tier'
  /\   |
 T  h  a          'graphemic tier'

     H           'tonal tier'
```

Worth noting from the above data is that tone distinguishes meaning and word classes in similar segments in Gĩtigania. Monosyllabic verbs manifest L and H tonal patterns, respectively, while bi-syllabic verbs demonstrate LL, LH, HH, and HL tonal patterns.

3.3. Grammatical Functions of Tone

Grammatical tone refers to the distinctive pitch level that marks contrast in grammatical features like aspect, tense, case, and mood. In most tone languages, tone functions in the verb system to mark specific moods, verb tenses, or
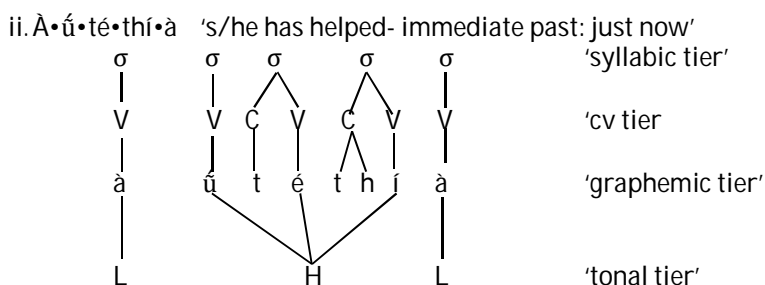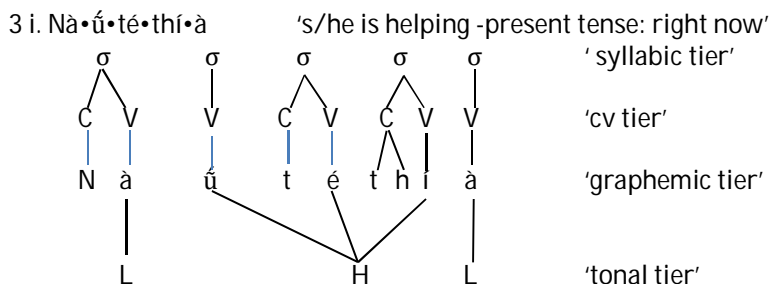
aspects by use of tone only in similar segments. As demonstrated by the use of minimal pairs obtained from the study language, Gĩtigania serves a grammatical function.

3.4. Grammatical Functions of Tone: Tense

Gĩtigania has one grade of present tense, four grades of past tense, and two grades of future tense. These grades of different tenses are marked using tense prefixes labelled TP in the example below. To represent subject morpheme, verb root, and final vowel, respectively, the abbreviations 'S', 'vrt', and 'fv' were used. The set of identical segments given below was used to explore the interaction of tone and tense in Gĩtigania by relating the action denoted by the verb forms to specific times. Tone diacritics were used in tonal patterning as shown below:

3.	**Verb**				**Gloss**
i.	Nàű́téthía				's/he is helping -present tense: right now'
	N	-à	-ű́	-téth	-í	-à
	Tp	-s	-tp	-vrt	-Asp	-fv
ii.	Àű́téthía				's/he has helped- immediate past: just now'
	À	-ű́	-téth	-í	-à
	S	-tp	-vrt	-Asp	-fv
iii.	Nàtèthèríè				's/he helped- past: earlier today'
	N	-à	-tèth	-èrí	-è
	Tp	-s	-vrt	-Asp	-fv
iv.	Nàtèthèrìé				's/he helped- past: yesterday'
	N	-à	-tèth	-èrì	-é
	Tp	-s	-vrt	-Asp	-fv
v.	Nàtèthèríé				's/he helped: earlier than yesterday'
	N	-à	-tèth	-èrí	-é
	Tp	-s	-vrt	-Asp	-fv
vi.	Àtéthía				'she will help –future tense today'
	À	-téth	-í	-à
	S	-vrt	-Asp	-fv
vii.	Àtéthía				'she will help –future tense after today'
	À	-téth	-í	-à
	S	-vrt	-Asp	-fv

Similarly, an AP representation of 3 (i) & (ii) above is hereby used to demonstrate how various tiers are related, and it applies to all other examples in (i-vii).

3 i. Nà•ű́•té•thí•à   's/he is helping -present tense: right now'

ii. À•ű́•té•thí•à   's/he has helped- immediate past: just now'

From the data in 3 above, Gĩtigania demonstrates various tenses; among them are present, past, and future tense. It has one grade of present tense, four grades of past tense, and two grades of future tense. The word forms in all the sets (iii-v) are segmentally identical, indicating that they cannot be morphologically distinguished. Instead, they are tonally distinctive. Segments (i) & (ii), on the other hand, can be differentiated morphologically, unlike (vi) & (vii), which are neither tonally nor morphologically distinguishable.

The various tone patterns displayed by the use of diacritics indicate that tone can be used to distinguish the past, earlier today, the past yesterday, and the remote past despite them being similar segmentally. We can further deduce that

in marking the past tense in Gĩtigania, the tense prefix, the subject, and the verb root morphemes- all maintain a low tone. Furthermore, the tonal alterations bring about the difference in the aspect and final vowel morpheme, indicating that the inflectional tones are all realized at the right edge of the verb stem.

To mark the past; earlier today, the past; yesterday, and the remote past; earlier than yesterday, the aspect morpheme adopts an H, L, and H tones, respectively, while the final vowel conforms to L, H, H tonal alterations. This difference in tone patterns brings about the difference in tenses. Each lexical item's tone-bearing units (TBUS) represent past: earlier today, yesterday, and earlier than yesterday. Moreover, the units are associated with high and low-level tones, a characteristic of register tone languages. Similar tones are collapsed regarding OCP requirements. Worth noting is that the tense suffixes marking the past earlier today are associated with HL tones, and those marking the past yesterday are associated with LH tones. In contrast, those marking the remote past are associated with HH tones.

3.5. Grammatical Functions of Tone: Mood

Nurse and Phillipson (2003:8) described Bantu languages as 'verby'. They stated that the verb is pivotal in a sentence since it incorporates much information. This means that having a one-word sentence made up of a verb with different affixes is possible. Maringah (1987:77), for instance, noted that the Kimbeere verb consists of the following components: negative markers, subject pronoun, tense, indirect object pronoun, root, mood, and suffixes that mark: causative, applicative, stative, reversive passive, and reciprocal. Based on this argument, the word forms below were treated as inflected verbs and thus analyzed for mood.

According to Bussman (1996), verbal mood refers to a grammatical category of verbs that expresses the speaker's attitude regarding the state of affairs described by the utterance. Nakau (1976) classifies mood as abrupt, imperative, interrogative, assertive, and exclamatory. On the other hand, Crystal (1985) in the Traditional Grammar broadly classifies mood as indicative, subjunctive, and imperative. Onyango (2006) distinguishes five major verbal moods in Olunyala, which are morphologically and tonologically marked. They include indicative, possibility, desirability, conditionality, and imperative mood. He further observes that these modalities are closely related to tense.

In Gĩtigania, mood can be expressed morphologically and tonologically by mapping high and low tones on specific syllables in the verb to express declarative, interrogative, prohibation, and doubt. The declarative may also be referred to as indicative, common, or neutral mood. It expresses the factual content of an utterance without the evaluations of the speaker. While prohibitives seek to forbid or disallow something from happening, the interrogatives ask questions (Onyango, 2006:100).

Four sets of word forms with different tonal alterations were used in the study to show the relationship between tone and mood, as illustrated below.

4.		Verb	Gloss
a)	i.	Àchéthá	's/he will play-statement'
	ii.	Àchéthà	'will she play-question'
	iii.	Àchèthà	's/he should not play-prohibation'
	iv.	Àchéthá	'should s/he not play-doubt'
b)	i.	Àkàíná	's/he will sing-statement'
	ii.	Àkàínà	'will s/he sing-question'
	iii.	Àkàìnà	's/he should not sing –prohibation'
	iv.	Àkáíná	'should s/he not sing-doubt'
c)	i.	Bàkàréá	'they will eat-statement'
	ii.	Bàkàréà	'will they eat-question'
	iii.	Bàkàrèà	'they should not eat –prohibation'
	iv.	Bàkáréá	'should they not eat-doubt'
d)	i.	Àkàthómá	's/he will study-statement'
	ii.	Àkàthómà	'will s/he study-question'
	iii.	Àkàthòmà	's/he should not study-prohibation'
	iv.	Àkáthómá	'should she not study-doubt'

Using tone labels based on association convention, example 4 (b) can be illustrated as follows:
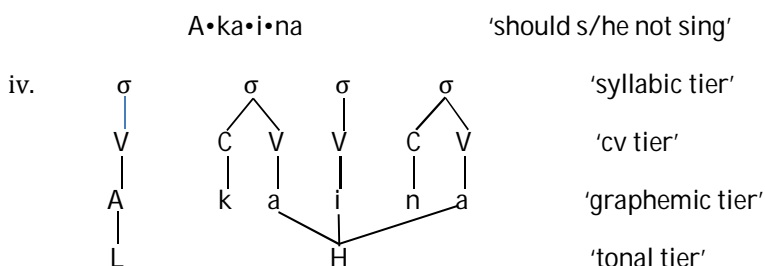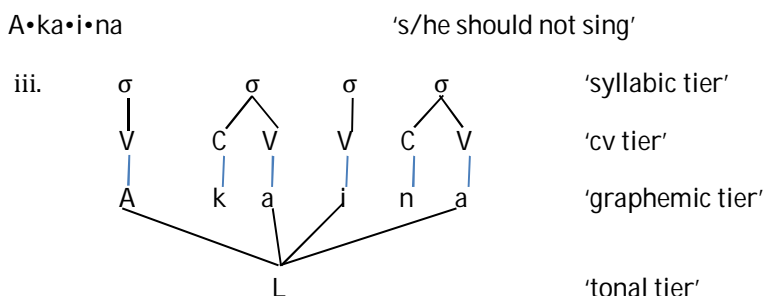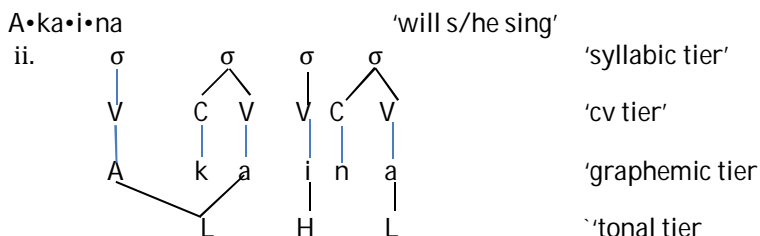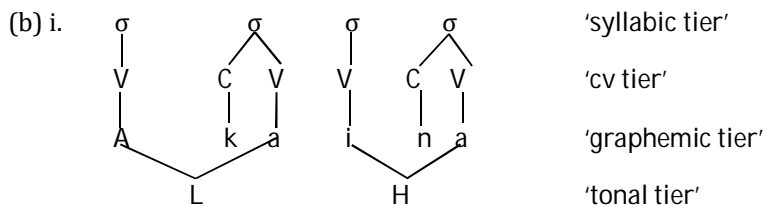
(b) i. Akaina   's/he will sing-statement'

ii. Akaina   'will s/he sing-question'

iii. Akaina   's/he should not sing-prohibation'

iv. Akaina   'should s/he not sing-doubt'

An AP representation of (b) above is hereby shown to demonstrate how various tiers relate.

A•ka•i•na   's/he will sing'

(b) i.
```
      σ           σ        σ           σ        'syllabic tier'

      V       C   V        V       C   V        'cv tier'

      A       k   a        i       n   a        'graphemic tier'

              L                    H            'tonal tier'
```

A•ka•i•na   'will s/he sing'

ii.
```
      σ           σ    σ           σ            'syllabic tier'

      V       C   V    V       C   V            'cv tier'

      A       k   a    i       n   a            'graphemic tier

              L        H        L               'tonal tier
```

A•ka•i•na   's/he should not sing'

iii.
```
      σ           σ        σ           σ        'syllabic tier'

      V       C   V        V       C   V        'cv tier'

      A       k   a        i       n   a        'graphemic tier'


                  L                             'tonal tier'
```

        A•ka•i•na   'should s/he not sing'

iv.
```
      σ           σ        σ           σ        'syllabic tier'

      V       C   V        V       C   V        'cv tier'

      A       k   a        i       n   a        'graphemic tier'

      L                    H                    'tonal tier'
```

From the data provided, tone plays a crucial role in differentiating moods in Gĩtigania. This is because we can express doubts, prohibations, questions, and statements in similar segments by adopting different tones. However, it is worth noting that mood affects the tone patterns of Gĩtigania verb stem and can only be distinguished through tonal contrast.

4. Conclusion

This paper described the functions of tone and its distinctive role in Gĩtigania. Being a level tone language, Gĩtigania demonstrates Low (L) and High (H) steady pitches. Therefore, gĩtigania tone serves a distinctive function where it distinguishes meaning in similar segments and word classes. In addition, tone marks a difference in mood and tense. This paper also emphasizes the importance of tone marking in Gĩtigania as there seems to be a wide range of minimal pairs whose difference is brought about by tone marking; thus, failure to mark tone may bring about communication breakdown.

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