

On Lexical and Grammatical Meanings of Tone in Mwaghavul

¹Evarista O. Ikoyo-Eweto, ²Tongman Fwangwar Rabo
¹ University of Benin, Benin City, ²University of Jos

DOI: <https://doi.org/10.60787/jolan.vol6no1.468>

Abstract

Most previous studies on the grammatical functions of tone in Mwaghavul dwell on its relatedness with segmental and content word compositions of utterances. This paper provides further evidence on the grammatical functions of tone in Mwaghavul. It examines the observation that adjectival verbs nominalise by means of tonal modification and the linguistic harmony between tone and temporal distinctions in the language. The data used for this study consist of 400 Mwaghavul lexical items, and 100 Mwaghavul sentences related to the subject of this study. The Ibadan word list of 400 basic lexical items was the main instrument for data collection while supplementary data were collected via participant observation. Five L1 speakers of the language, within the age range of 30 to 60 years participated as consultants for data collection. Analysis of available data was conducted mostly within the framework of Autosegmental phonology. The study provides evidence in support of the observation that adjectival verbs, like their non-adjectival counterparts, become nominals by tonal lowering or raising. Data analysis also showed that tone marks temporal distinctions in Mwaghavul. Specifically, tonal differences mark the distinction between the habitual, progressive and the perfective time frames in the language. The work furthers, and improves on previous studies of tone, as well as the interaction of tone and grammar in the language.

Keywords: *tone, Mwaghavul, temporal distinctions, adjectival verbs, autosegmental phonology*

1. Introduction

Existing studies on tonal behaviour in Mwaghavul are not exhaustive. Studies on tonal modifications on adjectival verbs, on the one hand and interaction between tone and time distinctions in the language are sparse. The fact that, besides its lexical role, tone also distinguishes between certain grammatical categories in some tone languages is well known. For instance, tone is shown to mark the difference between affirmative and interrogative utterances in Igbo (Emenanjo, 1978); number in Dinka (Westermann & Ward, 1933/1990); number in Mbembe (Westermann & Bryan, 1970) and nominalisation in Mande (Westermann & Bryan, 1970); negation in Legbo (Udoh, 2015); tense in Akan (Dolphyne, 1986); person in Lugunda (Dolphyne, 1986) and

- i. To demonstrate that adjectival verbs participate in a derivational process that converts them to nominals.
- ii. To determine the relationship between tone and temporal distinctions in Mwaghavul.

Mwaghavul is a Nigerian language spoken in Plateau State, North Central Nigeria. It is known as *Sura* in earlier literature and spoken as first language in Mangu Local Government Area, some parts of Shendam, and Quaana Pan Local Government Areas of Plateau State. L₁ Speakers of the language are also found in other States notably, Kaduna and Nasarawa. It is classified under the West Chadic subfamily of the Afro-Asiatic language family (Crozier & Blench 1992, cited in Barnabas 2011:28) and is said to be one of the major languages spoken in Plateau State. The language is flanked on the classificatory chart by Benue-Congo languages to the North and West, notably Berom and Izere. It is spoken by about 700,000 people (Barnabas, 2011:29). Newman's (2013) classification of the language is adapted and presented in Figure 1.

A detailed phylogenetic tree of West Chadic languages. The root is 'West Chadic', which branches into 'Luri' and a large clade. This clade further divides into 'A' and 'B'. Group 'A' includes 'Hausa Gwandara', 'Bole' (with 'Bole Proper' and 'Bure Karakare'), 'Tangale' (with 'Dera'), 'Dazawa (?)', 'Yiwom Yiwom', 'Angas proper' (with 'Ngas Cakfem-Mushere', 'Jorto', 'Kofyar', 'Miship', 'Mwaghavul', 'Goemai', 'Koemoem', 'Montol', 'Pyapun', 'Tal'), 'Fyer' (with 'Fyer', 'Tambas'), and 'Ron Proper' (with 'Ron', 'Duhwa', 'Kulere', 'Mundat', 'Sha'). Group 'B' includes 'Bade-Ngizim' (with 'Auyokawa', 'Duwai', 'Bade Proper', 'Bade', 'Ngizim', 'Teshenawa'), 'B.1', 'B.2' (with 'Mbarku', 'Diri', 'Zumbun', 'Kariya', 'Miya', 'Pa'a', 'Siri', 'Ciwogai', 'Warji'), and 'B.3' (with 'Dass', 'Boghom', 'Boghom', 'Kir-Balar', 'Mangas', 'Zaar Proper', 'Geji', 'Polci', 'Saya', 'Zari', 'Zeem', 'Eastern Jimi', 'Guruntum', 'Guruntum-Mbaaru', 'Ju', 'Tala', 'Zangwal').

Adapted from Newman (2013: 10)

1.2. Methodology

Data used for this study consist of 400 items and 100 Mwaghavul sentences related to the subject of this study. The Ibadan Word List of 400 Basic Items was the main instrument of data collection. Supplementary data were obtained via participant observation. Five L1 Speakers of the Mwaghavul language participated in the process of data collection as consultants. These participants, who comprised two females and three males, were within the age range of 30 and 60 years. One of the male consultants is a member of the Mwaghavul Bible Translation Committee while one female consultant is a language teacher. The other three informants, comprising one female and two males are farmers with appreciable levels of literacy. The consultants were free from any overt pathological problems at the time of data collection. The same set of data was elicited from the five informants to enable a check on accuracy and reliability. The data were recorded both manually and electronically. Data transcribed at the point of collection were later compared with recorded data to correct possible recording errors and inconsistency.

The variation in the age of the informants was purposely designed to ensure that the data collected were representative of the Mwaghavul speech community. Available data are presented in phonetic, phonemic or conventional orthography as required by the nature of data analysis. Tones were consistently marked on all data. The high tone is indicated with an acute mark [á], low tone by a grave [à] while the mid tone is left unmarked. The rising contour tone was indicated by a rising glide [ǎ] and a falling contour by a falling glide [â].

1.3 Theoretical Framework

This study is conducted within tenets of Autosegmental Phonology. The framework, originally credited to Goldsmith (1976), has since been further developed by contributions from other linguists such as Clements & Keyser (1983), Oyebade (1988), Leben (2006). The choice of this framework is due to its efficacy for accounting for segmental as well as prosodic features of language, the latter of which includes the behaviour of tone in tone languages. Autosegmental Phonology presents the description of an utterance on parallel tiers of segments and prosodic features, which are linked by association lines. This structure is built to demonstrate the independence and harmony which exists between these two features of a given language at any point of language use.

The occurrence of contour tones, especially on short vowels, is one of the motivations for the theory. On the assumption that tones are features of the vowels that bear them, and that contour tones are a combination of two-level tones, it is difficult to represent contour tones satisfactorily within Generative Phonology. A second justification for the preference of this theory is the phenomenon of stability of prosodic features, especially that of tone. This refers to a situation where an autosegment persists in an utterance despite the deletion (or assimilation) of the vowel that supposedly bore it (Leben, 2006:3). The autosegmental explanation for tonal stability is that tonal segments survive the effect of vowel deletion or assimilation rules because they are quite separate segments which are ordered on a different level from the vowels. A third argument is the existence of melody levels in the grammar of a language. Goldsmith (1976:35) describes melody levels as “linguistically significant levels in the grammar which refer to [...] one or two features in the utterance.”

One of the compelling arguments for the autosegmental theory is the phenomenon of floating tones. Hyman (1975:225) describes a floating tone as “a case where an underlying tone, which has no underlying segment, is posited.” This simply means that when a tone floats, it has no tone bearing unit (TBU) associated with it in the underlying representation. The process of associating a floating tone with a TBU is termed “docking” (Goldsmith 1976). The final argument for this theory is the phenomenon of ‘spreading’. This is a situation where the value of an autosegment such as tone, extends over other units within a given domain. The cardinal principle of autosegmental phonology is the Well-formedness Condition (WFC) which states that:

- i. All P-segments which are tone-bearing must be associated with at least one tone.
- ii. All tones must be associated with at least one P-segment.
- iii. Association lines do not cross.

The advantage and justification of the adoption of the autosegmental theory as framework for this study lies in the clarity it provides for the various processes which the suprasegments of tone undergo, from their earliest stages of appearance to their final realisations. These processes would be demonstrated in the relevant subsections of this study. It is on this basis and other already stated advantages that this model is stated in this work.

2. The Mwaghavul Tonal System

Most studies carried out on the Mwaghavul tonal system are unpublished. Some of these works include Barnabas (2011), which dwells on the origin, migration, settlement and early history of the Mwaghavul; Daapiya, Blench, & Bess (2014) a Mwaghavul-English dictionary; Fwangwar, (2018) on aspects of the phonology of Mwaghavul; Gopye (1981), an outline of Mwaghavul syntax. This work describes its characteristic linguistic features of tone, implosive consonants, phonemic vowel length, central vowels, phonemic palatalisation and labialisation. One of the first major attempts at describing the grammatical functions of tone in Mwaghavul is Ikoyo-Eweto and Fwangwar (2018a). Amongst other processes, the paper discusses a derivational process by which gerundive nominals are formed from verbs by means of tonal modifications.

2.1. Tone

A tone language is one in which a change in the pitch of the voice in speech causes lexical and/or grammatical distinctions. Egbokhare (2010) describes pitch as the perception of frequency vibration of the vocal cords per second. A high frequency of vocal cords vibration is perceived as high pitch while a low frequency of vibration is perceived as low pitch. Research also shows that pitch is present in voiced segments only and is continually changing in speech depending on speech production. On the importance of tone, Westermann and Ward (1990) note that a wrong use of tone may cause: wrong d tonal grammar and foreign accent. Welmers(1973) notes that the lexical function of tone is inherent in any definition of a tone language. Udoh (2003) states that tone plays several functions in different languages. The work states further that in most African languages, it plays lexical and grammatical functions. The lexical function of tone involves a change in word meaning while the grammatical function signals changes in word classes and other grammatical features. Mwaghavul features pitch contrasts on lexical items. This means that a change in pitch height is responsible results in the difference in meaning between certain utterances in the language. Notable studies on its tonal system all agree that Mwaghavul has three distinctive level tones, namely high, mid and low. Gliding or contour tones also occur in Mwaghavul. Specifically, Ikoyo-Eweto & Fwangwar (2018b) identify the rising contour tone as phonemic in the language. The work defines a contour tone as one in which there is movement from one pitch level to another within a given syllable For the rising contour tone, movement would be from a low pitch to a high one. Researchers however differ

on the phonemic status of gliding tones in Mwaghavul. Nyang, Bess & Dawum, R. (2013) and Daapiya et al. (2014) maintain a neutral position in that they do not make a definite statement on the phonemic status of the contour tones in Mwaghavul. Blench (2015:3), on the other hand, claims that gliding tones in Mwaghavul are not phonemic. He states that:

falling and rising tones are heard phonetically on sequences of similar vowels, but it is doubtful whether there are underlying glide tones.

Ikoyo-Eweto and Fwangwar (2018b) however, show that there is a distinctive contrast between the rising tone and the other three level tones, thus increasing the number of basic tones in Mwaghavul from three to four. They demonstrate this with the following data in which the rising tone contrasts with the level tones:

- (1) a. ká: ‘head’
b. ka: ‘like’
c. kà: ‘germinate’
d. kǎ: ‘grandmother’ (p. 86)

Thus, by that study, Mwaghavul has four contrastive tones: high, mid, low and rising. With this finding, Ikoyo-Eweto & Fwangwar (2018b) situate Mwaghavul within Pike's bipartite classification of tone languages into register tone languages and contour tone languages. They postulate that Mwaghavul is a register tone language, arguing that level tones are the norm in Mwaghavul. On the distinction between terraced-level and discrete-level tone languages, the study submits that Mwaghavul is a discrete level tone language. They illustrate this occurrence with the following sentence:

- (2) Lúkà a ʔàr sò kí rànɔŋ ni n̄tùlú
 - - -
 - - -
 - - - - -
 'Luka is taking the cow home'

Ikoyo-Eweto (2018: 47)

The sketch indicates three discrete level tones throughout the sentence: high ´, mid ¨, low ` . In most African languages, there is a subset of words, whose word-class status is fluid. These words are verbs with respect to their distribution but are adjectival in

meaning. Frajzyngier (1993) cited in Nyang et al (2013:84) refers to this set of words as ‘adjectival verbs’. Similarly, Awobuluyi (1979:57) cited in Arokoyo (2010:74) uses the term ‘adjectivisable verbs’ to refer to this class of words. He describes adjectival verbs as ‘VPs from which adjectives can be formed’. This sub-set of words are also attested in Mwaghavul as illustrated in section 3.

2.2. Previous studies on the grammatical roles of tone in Mwaghavul

Some previous studies show that tone performs three main functions in Mwaghavul. These include the lexical, grammatical and pragmatic (Nyang et al. 2013, Daapiya et al. 2014, Ikoyo-Eweto & Fwangwar, 2018a and 2018b). Illustrations of these occurrences are provided as follows:

- (3) a. /wá:r/ ‘gruel’ b. /wa:r/ ‘fart’

In (3a), a change from a high to a mid tone results in a change in the meaning of a word comprising apparently identical segments. This is the lexical function of tone. Grammatically, tone performs a derivational function in Mwaghavul, as illustrated in (4).

- (4) /wùs/ ‘to roast’ b. /wus/ ‘fire’

In (4a), a change from low to mid tone results in a change in grammatical class from verb to noun. Also, a change in tone pattern which results in a change from a place adverb to a demonstrative is considered pragmatic, as shown in (5).

- (5) a. /sì/ ‘here’ /sí/ ‘there’
 b. /dí:ˈsì/ ‘this’ /dí:ˈsí/ ‘that’

The illustrations (5) show a change from mid tone to a high in 5a & 5b respectively resulting in a simultaneous change from a place adverb to a demonstrative, which is pragmatic in function.

2.2.1. Tone as Derivational Morpheme in Mwaghavul

Ikoyo-Eweto & Fwangwar (2018a) established the verbal status of these lexical items presented in 3.1, and explained their behaviour within the tonal derivational process discussed. The work pointed out that in Mwaghavul, there is a derivational process that creates nouns from verbs by means of tonal changes. Ikoyo-Eweto & Fwangwar

(2018a:87-88) summarise this process as follows.

- i. Low tone on some verbs is raised to Mid or High to derive nouns
- ii. Mid tone on some verbs is lowered or raised to High to derive nouns.

They provided the following examples to illustrate this phenomenon:

(6) A Low-Toned Verbs			Nominal
a.	v ^w àm 'to scramble'	:	v ^w am 'scramble'
b.	m ^w à:n 'to walk'	:	m ^w a:n 'walking/journey'
c.	bál 'to join'	:	bál 'strength'
d.	wàt 'to steal'	:	wát 'thief'

B Mid-Toned Verbs			Nominal
a.	yàyal 'to stand up	:	yàyal 'standing up/farm going'
b.	suyun 'to dream'	:	sùyùn 'dream'
c.	fu:t 'to vomit'	:	fú:t 'vomit'
d.	k ^w at 'to pay'	:	k ^w át 'reward'

Ikoyo-Eweto & Fwangwar proposed two diagnoses for verbs/ nouns associated with this derivational process. They postulate that the verbs and nouns that are subject to this process must be related in form-meaning. They further argued that the derived nouns from this process may undergo metaphoric extension. The study revealed that high-toned verbs are exempt from this derivational process. Ikoyo-Eweto & Fwangwar, however, failed to give any explanations on the behaviour of adjectival verbs under this process hence the need for this paper. The following data revealed that adjectival verbs also undergo this derivational process.

(7) A Low Tone on Verbs raised to Mid or High			
	Adjectival Verb		Nominal
a.	lòŋ 'be rich'	:	lòŋ 'wealth'
b.	zùyùm 'be cold	:	zuyum 'generosity'
c.	làyàm 'be lost'	:	láyám 'eternal death'

B Mid Tone on Verbs lowered to Low or raised to High			
a.	ka:m 'be wide'	:	kà:m 'breadth'
b.	mìlɛp 'be green	:	m`il`ɛp 'greenness'
c.	gam 'be full'	:	gàm 'fullness'

d.	6 ^w a:r	'be lazy'	:	6 ^w à:r	'laziness'
e.	kun	'be old'	:	kùn	'old age'
f.	6 ^y a:l	'be severe'	:	6 ^y à:l	'severity'
g.	6irɔŋ	'be partially dry'	:	6`ir`ɔŋ	'partial dryness'
h.	rɔɣɔp	'be arrogant'	:	r`ɔɣ`ɔp	'arrogance'
i.	ʃ ^w al	'be painful'	:	ʃ ^w àl	'pain/sickness'
j.	m ^w ayal	'be fat'	:	m ^w àɣàl	'fatness'
k.	tal	'be warm/hot'	:	tàl	'warmth/hotness'
l.	kat	'be small'	:	kát	'smallness'
m.	bif	'be bad/ugly'	:	bíf	'badness/ugliness/stinginess/meanness'

From the foregoing, Ikoyo-Eweto & Fwangwar (2018a) propose two diagnoses for verbs/nouns associated with this derivational process as: the relatedness in form-meaning condition; and the metaphoric extension criterion. The adjectival verbs that participate in this process also meet these criteria. All the verbs cited in the examples above are related in form and meaning. For instance, it can be seen in (2A) that the verb /lòŋ/ 'be rich' is related in form and in meaning to the corresponding noun /lɔŋ/ 'wealth'. Furthermore, in (24B), /ka:m/ 'be wide' is related in form-meaning to /kà:m/ 'breadth'. Similar summation holds for the other pairs in (23) and (24).

The second test for the verbs that undergo this process is that the derived noun may undergo metaphoric extension. For instance, the verb /kat/ (see 24l) means 'be small' but the corresponding derived noun /kát/ means 'smallness' as well as 'shortcoming or imperfection.' Here, the latter meaning is derived by metaphoric extension. Similarly, the verb /bif/ (see 24m) means 'be bad/ugly' but the derived noun /bíf/ has acquired the meaning 'stinginess/meanness' via metaphoric extension. A similar analysis holds for the following pairs:

(8)	Adjectival Verb		Nominal
a.	zùɣùm	'be cold'	: zuɣum 'generosity'
b.	làɣàm	'be lost'	: láɣám 'eternal death'
c.	ʃ ^w al	'be painful'	: ʃ ^w àl 'sickness'

The meaning of the nominal in each case is gotten via metaphoric extension. Data at our disposal show that majority of adjectival verbs that undergo this process are mid-

toned verbs, most of which have corresponding low-toned nouns (compare 22 and 23 above). The foregoing further supports the status of these words as verbs in that this tonal derivation process is also a test for verb-hood in Mwaghavul. In other words, only verbs lend themselves to this tonal derivational process.

Furthermore, Ikoyo-Eweto & Fwangwar (2018a) in their discussion of regular verbs observe that high-toned verbs are not affected by this derivational process. A similar pattern is observed with adjectival verbs. Thus, the B-forms in the data below are not corresponding nominals in Mwaghavul:

(9)	A Adjectival Verb	B Non-Existent/Non-Corresponding Nominal
a.	kí'lák 'be fast'	: *k`ilák /*kílak,
b.	m ^w én 'be foolish'	: *m ^w én /*mwén
c.	dó'ŋ 'be pure/clean (= liquid)'	: *dōŋ/ *dōŋ
d.	d ^w án 'be ssour'	: *d ^w án/*dwan
e.	rɛ't 'be good'	: *rèt/ *rɛt

The ill-formedness of the B-forms confirm that high-toned verbs are not affected by this process. However, it is necessary to provide a caveat here. It is possible to find in this language nominal forms that relate to certain adjectival verbs in form only but not in meaning. Thus, the low-toned noun /fàŋ/ 'basket' cannot be shown to be derived from the high-toned verb /fǎŋ/ 'be sweet'. Similarly, /pò/: 'mouth' is not derived from /pɔ/: 'be new'.

2.2.2. Verbs having Adjectival/Non-Adjectival Status

Finally, there are certain special verbs in Mwaghavul that are both adjectival and non-adjectival in status. These include the following:

(10)	(Adjectival) Verb	Nominal
a.	lòŋ 'be rich/to enrich	: lòŋ 'wealth'
b.	gam 'be full/to fill'	: gàm 'fullness'
c.	sɛ:n 'be wise/be cunning/to trick/to deceive'	: s`ɛ:n 'wisdom/cunning/trick/deceit'
d.	tal 'be warm/hot/to ask	: tàl 'warmth/hotness/question
e.	làyàm 'be lost/to hide'	: láyám 'eternal death'

Each of these verbs can be used as a regular verb or as an adjectival verb. These forms are homonyms because they have more than one meaning. Ikoyo-Eweto & Fwangwar

(2018a) argue, when a homonymous verb undergoes this process in Mwaghavul, all its possible meanings may not necessarily be retained. This is also the case with adjectival verbs as the derived nominals in (8) above reveal. In (10a-d) all the meanings of the verbs survive in the derived nominals. However, in (10e), only the first meaning of the verb /làyám/ 'be lost' survives in the corresponding noun /láyám/ 'eternal death'. Here, the 'eternal death' meaning is gotten via metaphoric extension.

2.3. Tone and Temporal distinctions

Temporal distinction in language is a semantic field which concerns the relationship between the time of an action, event or state of affairs referred to in an utterance and the time of speaking. Ikoyo-Eweto (2016) stated that over time, this phenomenon has come to be identified as a combinatory grammatical category of tense/aspect in so far as it can be matched with some inflectional change or mark. In traditional treatments of the phenomenon of time relations in languages such as Greek, Latin and Russia, from whose translations the terms tense/aspect are derived, the latter were perceived as features of the verb which is almost always marked or inflected for temporal relations. A language that had no overt tense/aspectual markers was described as lacking the grammatical fields of tense/aspect. This erroneous view may not be unconnected with the statement that "...tense itself is not found in all languages..." (Lyons, 1979:304). However, the same author rightly states that "The essential characteristics of the category of tense is that it relates the time of the action, event or state of affairs referred to in the sentence, to the time of utterance. The view that time relations may be unmarked in some languages would be more acceptable, bearing in mind that the phenomenon of time is more or less a natural one.

Most previous studies on tense and aspect, particularly of African languages, take the definitions of these phenomena for granted on the one hand, and the relationship between the two on the other. Hartman and Stork (1972), Lyons (1979) and Matthews (2007) agree that tense expresses time relations by indicating the time of an event (usually expressed by the verbal element) in relation to the time of speaking or of an utterance. These qualities make tense a property of the sentence or utterance. Traditional treatments of tense divide it notionally into the three-time contrasts of present (the moment of speaking), past (earlier than the moment of speaking) and future (later than the moment of speaking). Various categorisations of tense are possible as these would be determined by the differences in the notion of proximity from language to language.

Matthews defines aspect as verbal categories that distinguish the status of events in relation to periods of time as opposed to their simple location in the present, past or future while Hartman and Stork explain it as the duration of the action expressed. Lyons states that aspect is the temporal distribution or contour of an action event or state of affairs rather than its location in time. The literature shows that the idea of aspect was first used in relation to the distinction of ‘perfective’-completed action/event- and ‘imperfective’-uncompleted action/event. A third aspect of duration of the action or process described was later introduced as durative/non durative. The category of aspect includes a wide variety of possible distinctions which complement and overlap with the tense system in most languages. Matthews described the division between tense and aspect as fluid and identified the dichotomy between time of action and the phase of action. The latter may include durative, habitual, imperfective, inchoative, iterative, punctual and remote. What is clear from the foregoing is that these two categories concern the timing of an action or an event. This factor easily explains the joint treatment of these categories in treatments of time relations in the description of most languages. The adoption of the descriptions ‘temporal distinctions’ and ‘time relations’ in this paper is a conscious effort to depart from the uncertain dichotomy between the terms ‘tense/aspect’, since the latter are adequately captured within the adopted descriptions.

3. Data presentation and analysis

3.1. The lexical and grammatical meanings of tone in Mwaghavul

The findings from analysis of available data for this study concerning the lexical and grammatical meanings of tone in Mwaghavul are presented and discussed in the following sub sections.

3.1.1. The interaction of Tone and Adjectivals in Mwaghavul

Adjectival Verbs

- (11)
- | | | |
|----|-------|------------|
| a. | kat | ‘be small’ |
| b. | ka:m | ‘be wide’ |
| c. | mīlēp | ‘be green |
| d. | gam | ‘be full’ |
| e. | ḡa:r | ‘be lazy’ |
| f. | zùyùm | ‘be cold’ |
| g. | kun | ‘be old’ |

h.	ḡa:l	'be severe'
i.	ḡirɔŋ	'be partially dry'
j.	làɣàm	'be lost'
k.	lòŋ	'be rich'
l.	rɔɣɔp	'be arrogant'
m.	ʃ ^w al	'be painful'
n.	dɣurɔŋ	'be deep'
o.	tal	'be warm/hot'

Syntactically speaking, these words are verbs but semantically they are adjectives. We need to provide evidence to prove that these words are, indeed, verbs in Mwaghavul. To determine their status as verbs, we shall use two basic tests for verb-hood in Mwaghavul as identified by Fwangwar (2018:146-147). First, verbs in Mwaghavul take the future marker /N/. Consider the following data in which the future marker is rendered in bold:

- (12) na:nlè **`m**man ʔár ni
 name FUT:know road the
 'Naanle will know the way'
- (13) na:lè **`m**pal
 name FUT:fall
 'Naanle will fall down'
- (14) dā: ni **`m**pi:n
 dish the FUT:break
 'The dish will break'
- (15) dǎ: **n**nas là: ni
 father FUT:beat child the
 'Father will beat the child'

These examples show, the future marker is prefixed to the verb in each case. Furthermore, the future marker agrees with the initial consonant of the host verb in place of articulation. Thus, it is realised as /m/ in (12)-(14) while it is realised as /n/ in (15) above. This set of words also takes the future marker as the following examples show:

- (16) lú ni `ŋka:m
house the FUT:be wide
‘The house will be wide.’
- (17) dā: ni `ŋgam
dish the FUT:be full
‘The dish will be full.’
- (18) ʃ^wa: ni `mmiləp
maize the FUT:be green
‘The maize will be green.’
- (19) māt ni `ŋkun
woman the FUT:be old
‘The woman will be old’

As with the regular verbs, the future marker is also attached to the adjectival verb as a prefix (regular is used here as a cover term, meaning 'not adjectival'). Thus, these words take future marker as their non-adjectival counterparts. A second test for verb-hood in Mwaghavul is that verbs in Mwaghavul take the low-toned perfective marker /kì/. This is illustrated below:

- (20) Na:nlè **kì** pal
name PERF fall
‘Naanle has fallen down’
- (21) dā: ni **kì** pi:n
dish the PERF break
‘The dish has broken’
- (22) dǎ: **kì** nas là: ni
father PERF beat child the
‘Father has beaten the child’
- (23) mú **kì** wum là: ni
They PERF bury child the
‘they have buried the child’

The perfective marker / **ki**/ typically precedes the main verb in Mwaghavul. Similarly, these so-called adjectival verbs are preceded by the perfective marker /*ki*/ as the following data illustrate:

(24) ni **ki** kun
 It PERF be old
 ‘It has become old.’

(25) ni **ki** gam
 it PERF be full
 ‘It has become full.’

(26) ni **ki** milep
 it PERF be green
 ‘It has become green.’

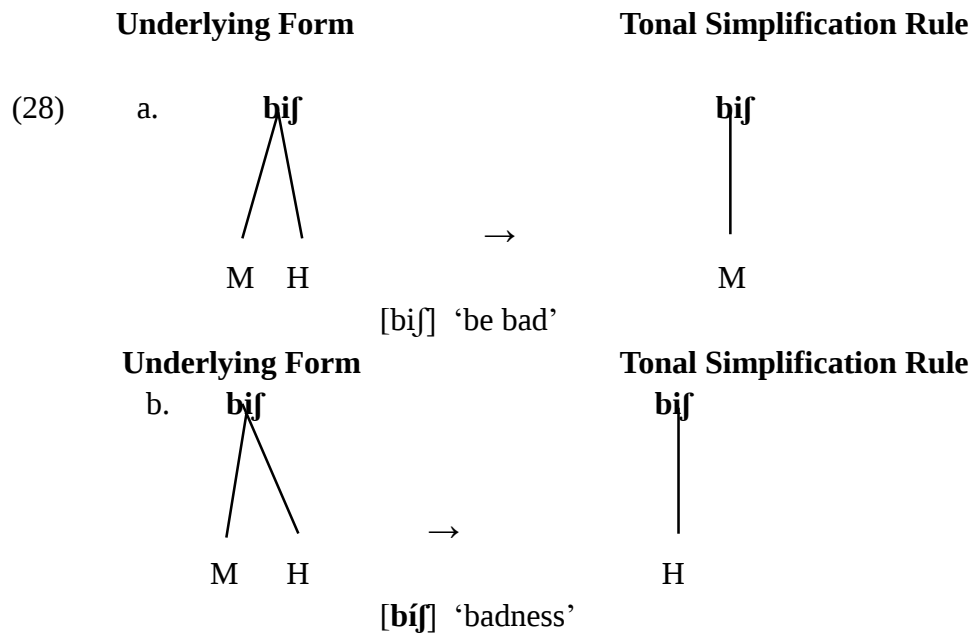
Thus, there is clear evidence that these words are verbs as they take both the future marker and the perfective marker, which are typically associated with verbs.

The adjectival verbs discussed above will be accounted for in terms of melody levels that exist in the grammar. As stated in section 2, Goldsmith (1976:35) describes melody levels as 'linguistically significant levels in the grammar which refer to [...] one or two features in the utterance. In autosegmental terminology, we say that the forms that participate in this derivational process are stored as single entries in the lexicon of the language. However, they will be assigned two tonal patterns. The choice of one tone pattern rather than the other would be determined by the grammatical class function of the word in the utterance, either as a verb or a noun. For instance, the lexical entry for the form /**bi**/ would look like the following:

(27) Segmental Entries: **bi**f
 Tonal Entries: M H

The mid tone would be selected for the form /*bi*/ if it surfaces as a verb, whereas it would be a high if it surfaces as a noun. This supports the autosegmental view that segments and tones are selected from different entries in the lexicon. This is similar to the analysis of Arnott (1964) cited in Goldsmith (1976) in which he notes that the length of the verb stem in Tiv ranges from one to three syllables and that for each length

in a given tense, there are two possible tone patterns. Leben (1973) cited in Goldsmith, (1976) makes a similar claim in which he observes that there are only five available underlying tone melodies in Mende and that the melody is mapped from left to right onto the word. Since tonal simplification rules are pervasive in Mwaghavul (Fwangwar, 2018:149), we will argue that the derivation of these forms will involve linking the relevant form with the two underlying tones and then simplifying the resultant contour tone to yield the desired output tone. Thus, the derivation of the form /bɪf/ will be as shown in (28).



Thus, the tonal simplification rule is set up to ensure that the verb or noun surfaces with the acceptable tone height. For instance, in (29a), the high tone is delinked to yield the Mid tone verb /bɪf/ 'be bad' while in (29b) it is the mid tone that undergoes delinking to derive the corresponding noun /bɪf/ 'badness.'

3.2. The Interface of tone and temporal distinctions in Mwaghavul

The study data show that tonal behaviour plays a key role in the distinction of time relations in Mwaghavul. Specifically, certain time distinctions in the language are indicated by changes in tone patterning. These occurrences confirm the finding in this study that tone and time distinctions interact to enhance harmonious communication in

Mwaghavul. Three-time distinctions were identified in this study. These are the habitual, the perfective and the progressive time frames.

3.2.1. The habitual time frame

The habitual time frame expresses an action which occurs repeatedly and is therefore described as a habit or habitual. It extends across time and thus affects all temporal specifications. Data in (30) show that the habitual marker /*kí*/ has a high tone as illustrated below.

- (29) a. *mú* *kí* *sɛ* *kóm*
 they HAB eat groundnut
 They eat groundnut.
- b. *rĩ* *kí* *ʃ^wa:* *àm*
 he HAB drink water
 He drinks water.
- c. *wǎn* *kí* *tàn* *ràn*
 I HAB count writing
 I read.

3.2.2. The Perfective time frame

The perfective time frame may be defined as that which expresses a completed action in a language. This completion may be in the present or in the past time. Data in (30) show that the perfective marker /*kì*/ has a low tone as illustrated below.

- (30) a. *là:* *kì* *d̥ɔ̀*
 child PERF come
 The child has come.
- c. *táptù* *kì* *d̥ɔ̀*
 name PERF come
 Taptu has come.
- d. *mànɟɛ* *kì* *d̥ɔ̀*
 name PERF come
 Mangse has come.

- e. wùwǔn kǐ dǐ
 you:PL PERF come
 You have come.

The data above show that the distinction between the habitual tense and the perfective tense is marked by tone. A similar process occurs in Esan in which aspectual auxiliary markers combine with tonal changes to reflect distinctions in temporal relations (Ikoyo-Eweto, 2016). In Mwaghavul, however, these temporal distinctions are marked exclusively by tone. Thus, in certain restricted cases, the distinction between the progressive aspect and the perfective aspect is made tonally in Mwaghavul (see 30 a-e).

3.2.3. The progressive time frame

The progressive time frame may be defined as the expression of an action which is ongoing and thus yet to be completed at the time of speaking. In Mwaghavul, the progressive aspect is generally marked by the particle /`ŋka:/, literally, *on head* (Gopye, 1981). Consider the following illustrations.

- (31) a. mún `ŋka: tàn ràn
 we PROG count writing
 'We are reading'
- b. mú `ŋka: sɛ sɛ'
 they PROG eat eating
 They are eating

Thus, the progressive marker /`ŋka:/, precedes the main verb as a free form. However, when the high-toned particle /kí/ occurs with the verb /dǐ/ *come*, it also marks progressive action. This implies that the distinction between the progressive aspect and the perfective aspect is marked by a change from low to high tone in Mwaghavul. Consider the following:

- (32) a. là: kǐ dǐ
 child PROG come
 The child is coming.
- b. táptù kǐ dǐ
 name PROG come
 Taptu is coming.

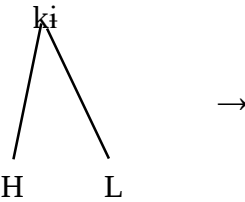
- c. mǎŋse kǐ ɗɔ̀
 name PROG come
 Mangse is coming.^{9*}
- d. wùwǔn kǐ ɗɔ̀
 you:PL PROG come
 You are coming.

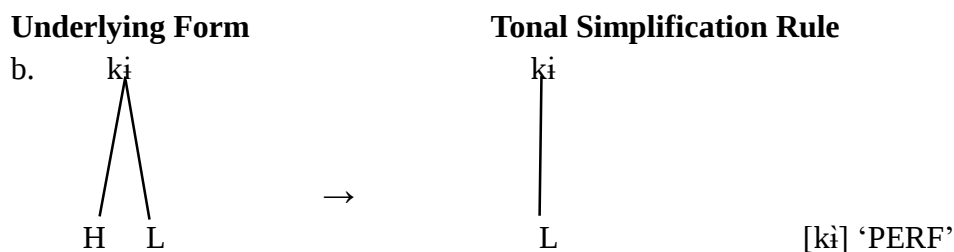
In summary, the submission in this study about the interaction of tone and temporal distinctions in Mwaghavul is that tone marks the difference between the habitual, perfective and progressive time frames in the language. Specifically, the difference between these time distinctions is a change from a low to a high tone, barring other grammatical markers.

As with the adjectival verbs, similar autosegmental explanations hold for this particle. The particle /*ki*/ ‘PROG/HAB’ would be a single entry in the lexicon assigned the high or low tone respectively. The choice of pitch height would be determined by whether the particle surfaces as a habitual/progressive marker or as a perfective marker. The autosegmental lexical entry for /*ki*/ is given in (33):

- (33) Segmental Entries: **ki**
 Tonal Entries: H L

Thus, the particle **ki**, will be assigned a high tone if it surfaces as a habitual or progressive marker while it will be assigned a low tone if it marks the perfective aspect. The autosegmental derivation of / *ki*/ is given (33).

- (33) a. **Underlying Form** **Tonal Simplification Rule**
-  
- [ki] ‘PROG/HAB’



The simplification rule operates in the same manner as in the case of adjectival verbs we saw in 2.2 above. Thus, the low tone is delinked in (33a) since the particle surfaces as a progressive/habitual marker while in (33b) it is the high tone that is delinked because the particle surfaces as a perfective marker which normally bears a low tone.

4. Conclusion

This paper examined some grammatical functions of tone in Mwaghavul. The motivation for the study was the observation of existing gaps in research into tonal modification and its grammatical functions in the language. Mwaghavul is a Chadic language spoken in parts of Plateau, Kaduna and Nasarawa states of Nigeria. It is classified under the West Chadic subfamily of the Afro-Asiatic language family. Data for this study comprised both lexical items and sentences.

The data for this study were analysed within the tenets of autosegmental phonology, phonological framework originally credited to Goldsmith (1976), but which has since been further developed by contributions from other notable linguists. The choice of this framework is due to its efficiency in accounting for segmental as well as prosodic features of language, the latter of which includes the behavior of tone in tone languages such as Mwaghavul. Two major functions of tone in Mwaghavul were identified and substantiated in this study as follows:

- a. Adjectival verbs occur in Mwaghavu. These lexical items undergo a tonal derivational process in which, like their non-adjectival counterparts, they become nominals. In both situations, there is a change from high to mid tone on the one hand, and from low to mid tone on the other. Thus, the nominals bear the midlevel tone.
- b. Tonal modifications mark the difference between the habitual and the perfect tense as well as the difference between perfective and the progressive aspect in Mwaghavul. In both cases, the difference between these time distinctions is a change from a low to a high tone, barring other grammatical markers.

This study is a contribution to further research on the phonology of Mwaghavul. It provided an avenue for the documentation of the language and a panacea to its endangerment.

References

- Arokoyo, B. E. (2010). Acquisition of Yoruba argument structure by pre-school children in Nigeria (Unpublished Ph.D. thesis). Ilorin: University of Ilorin.
- Barnabas, M.B. (2011). Origin, migration and settlement: Early history of the Mwaghavul up to 907. In S.A. Lohor, B.A. Katu, & H.D. Danfulani (Eds.), *Towards a Mwaghavul history: An exploration* (p. 26-51). USA: Xlibris Corporation.
- Blench, R. (2015). Mwaghavul plural verbs. Retrieved from <https://www.researchgate.net>> publication.
- Clark, J., Yallop, C. & Fletcher, J. (2007). *An introduction to phonetics and phonology* (3rd ed.). Malden: Backwell.
- Clements, G. N. (1979). The description of Terraced level Tone Languages. *Language*. Vol. 55,3. University of California: Cambridge.
- Daapiya, N., Blench, R., & Bess, J. (2014). *Mwaghavul-English dictionary*. Unpublished manuscript.
- Dolphyne, F. (1986). Tone and grammar in Akan: The tone of possessive constructions in the Asante dialect In Bogers, K., Van der Hulst, H., And Mouse, M. (Eds.). *The phonological representation of suprasegmentals*(p. 253-268). Dordrecht: Foris.
- Egbokhare, O. F. (2010). *Introduction to Phonetics*. Ibadan: Sam Bookman Educational and Communication Services.
- Emenanjo, O. (1978). *Elements of modern Igbo grammar*. Ibadan: Oxford University Press.
- Fwangwar, T.R. (2018). *Aspects of the phonology of Mwaghavul* (Unpublished M.A. Dissertation). University of Ilorin.

- Goldsmith, J. (1976). Autosegmental phonology. Indiana: Indiana University Linguistics Club.
- Gopye, E. (1981). An outline of Mwaghavul syntax (Unpublished B.A. Project). University of Jos.
- Halle, M. & Vergnaud, J.R. (1982). On the framework of autosegmental phonology. In H. Van der Hulst & N. Smith (Eds.), *The structure of phonological representations I*. Dordrecht, Holland: Foris Publications.
- Hartmann, R. R. K and F. C Stork *(1972). *Dictionary of Language and Linguistics*. York: University of York.
- Hyman, L.M. (1975). *Phonology: Theory and analysis*. Fort Worth: Harcourt Brace Jovanovich College.
- Ikoyo-Eweto, E.O. (2016). Interface of tone and tense/aspect in Esan. *JOLAN*, 19 (p. 167-183).
- Ikoyo-Eweto, E.O. & Fwangwar T.R. (2018a). Some grammatical and pragmatic functions of tone in Mwaghavul language. *Ihafa: A journal of African Studies*, 9 (I), p. 16-31.
- Ikoyo-Eweto, E.O. & Fwangwar, T.R. (2018b). The Mwaghavul basic tone system. *Coaxial Journal of linguistics studies*, 13 (I), p. 43-55.
- Leben, W. (2006). Rethinking Autosegmental Phonology. In *Selected Proceedings of the 35th Annual Conference on African Linguistics*, ed. John Mugane et al., 1-9. Somerville, MA: Cascadilla Proceedings Project.
- Lyons, J. (1979). *Semantics: Volumes 1 and 2*. Cambridge: Cambridge University Press.
- Mathews, P. H. (2007). *The Concise Oxford Dictionary of Linguistics and Syntactic Relations: A Critical Survey*. Oxford: Oxford University Press.
- Newman, P. (2013). *Chadic and Hausa Linguistics: Selected Papers of Paul Newman*. *Afrikanistische Forschungen: the University of Michigan*. 12. 10.

- Nyang, S., Bess, J. & Dawum, R. (2013). Mwaghavul orthography. Panyam: Mwaghavul Bible Translation Committee.
- Oyebade, F (1988). Issues in the phonology of kakanda language: An autosegmental perspective (Unpublished Ph. D thesis). University of Ilorin.
- Udoh, I. (2015). An introduction to phonemic analysis. Uyo: Fruities' Publications.
- Welmers, W. (1973). African language structures. Berkeley: University of California.
- Westermann, D. & Bryan M. (1970). The languages of West Africa. Dowsons of Pall Mall: Africa Institute.
- Westermann, D., & Ward, I. (1933/1990). Practical phonetics for students of African languages. London: Kegan Paul.
- Williams, E.S. (1971). Underlying tones in Margi and Igbo. *Linguistics Inquiry*. 463-484.

¹Evarista O. Ikoyo-Eweto, ²Tongman Fwangwar Rabo

¹*Department of Linguistics Studies, University of Benin*

²*Department of Linguistics and Nigerian Languages, University of Jos*

Ofure.ikoyo-eweto@uniben.edu; tongpanrabo@gmail.com