

An Analysis of Tones in Oꝛo

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Abstract:

Genetically, Oꝛo which is spoken in Akwa-Ibom State of Nigeria, in the part of the south-south region often referred to as Niger-Delta, belongs to the larger Niger-Congo language phylum, to which Benue-Congo and Delta-Cross are the sub-branches, (Greenberg 1963). Oꝛo, often anglicized Oron, is one of the richest tonal languages in the world with five tones: high, low, mid, falling and rising tones, of which the first three are the basic. There are also cases of ‘automatic’ and ‘nonautomatic’ downsteps in Oꝛo. Like in most tonal languages, tones in Oꝛo can be used to perform both lexical and grammatical functions. The dichotomy between register tone languages and contour tone languages shows that Oꝛo is basically a registered tone language because the tones in Oꝛo are often level in each syllable. Moreover, tone modification in Oꝛo can be phonologically motivated. For example, a low tone which precedes a high tone has the effect of slightly lowering that high tone; and the lowering influence of a low tone on a high tone can extend beyond word boundary. The study of Oꝛo has been overlooked by many researchers due to the dominating influence of Efik on the languages around it. Efik, seen as the Romance language of West Africa has held in slavery, so to speak, several other dialects and languages within and around its domain. Its strategic location near the Atlantic coast had made Efik easily accessible to European explorers, exporters and missionaries which invariably led to its early description and influence down to this day. While Ibibio speakers have made tremendous strides toward their language development, Oꝛo speakers are yet to follow suit. It is with this in mind this paper attempts to x-ray tonal features in Oꝛo and also establish the basic tones inherent in the language.

Preamble:

Language is one of the most powerful and enigmatic human possession. By means of this specie-specific human phenomenon, we could express our feelings, preserve our culture, interact with one another and even teach language itself. Without language, human survival could have been seriously hampered and there will be no civilization and technology as we have it today. Language therefore gives man an edge over other powerful inhabitants of our solar system that even predate man on the surface of the earth. No wonder Henry Sweet in Varshney (1978:2) defines language as “the expression of thought by means of speech sound”. Ronald Langacker also sees language as “a device that establishes sound-meaning correlations, pairing meanings with signals to enable people to exchange ideas through observable sequences of sounds”. These sounds, however, do not possess any meaning when they are in units, until they are systematically combined according to the sound system of a language before its usefulness could be established. Language itself cannot exist in a vacuum. It is operational in a society where it is mostly used for communication and interactional purposes. On the other hand, one cannot imagine a society without a language. Language therefore adds value to our existence. No wonder Essien in Emenanjo (ed. 1990:168) could say that “Language is not only one of man’s greatest, most complex and most enigmatic possession, it is the quintessence of his humanity. For from the dawn of history he has not only been a homo sapiens but also a homo loquens. A community that neglects its language neglects what Chomsky (1968) calls the “human essence” and a nation that does not recognize its linguistic character and seeks to promote it loses her mental and cultural heritage”. While language is primary, literature is secondary. The spoken form of language existed long before man learns to reduce these spoken symbols

intowritten form – hence the emergence of literature. Literature serves as the treasure-base through which language is documented and preserved both for study and for posterity. The emerging Africa needs to take her pride of place in the comity of powerful nations by documenting her rich resources of language through literature. In this regard, we want to have a brief historical background of the Oꝛo people before analysing tones as used among the Oꝛo people of southern Nigeria

A brief history and classification

Oꝛo is spoken in Akwa-Ibom state of the south-south geographical region of Nigeria. The state is situated between latitude 4°32'N and 5°33'N and longitude 7°25'E and 8°25'E east. The state vegetation falls within the good mix of the swamp/mangrove forest and the rain belt. Of the 31 Local Government Areas in the state, only 5 LGAs is for the Oꝛo people, namely: Mbo, Okobo, Oron, Udung Uko and Urue-Offong/Oruko. While Oꝛo had been estimated to be over a million people, the 2006 population census puts Oꝛo at 419,967 in population.

The ancestral origin of the Oꝛo people is carefully traced from the Bantu stock of Ushahadit in the Rio-de Rey area of Cameroon. Oꝛo tradition generally acknowledge Abang as their putative father and Oꝛo as the person who led them to their present abode. While some traditions see Oꝛo as the brother of Abang, others regard him as his son. Another tradition maintains that Abang, the putative father of Oꝛo people came from the Mediterranean world, specifically Egypt, before the advent of the Muslim in that region. (see Uya, 1984:10)

By genetic classification, Oꝛo belongs to the Niger-Congo language phylum which has Benue Congo and Delta Cross as its sub-branches. Though as neighbours for close to a millennium, there is no complete break in intelligibility between Oꝛo/Ibibio and Oꝛo/Efik speakers. Conversely, Oꝛo speakers can communicate in fluent Efik or Ibibio languages. A dialect of Oꝛo, called Mbo is also spoken along the Atlantic coast leading to the Cameroons and the Equatorial Guinea.

What are tones?

Tone is a term used in phonology to refer to the distinctive pitch level of a syllable. It can also be defined as pitch variation that changes the core meaning of a word. In the words of Anyanwu (2007:257) “it constitutes a suprasegmental feature superimposed on a segmental entity such as syllable, morpheme or word, so that such an entity comes out with two, three or four different meanings.” It is like interplay of melody in the human system of communication noticeable at the rise and fall of pitch to convey different meanings or emphasis. According to Crystal (1991:265) “ ‘Pitch’ which can be measured in a unit known as *mel*s is the attribute of auditory sensation in terms of which a sound may be ordered on a scale from ‘low’ to ‘high’ ”.

Katamba (1989:186) notes that “pitch of an utterance depends on the rate of vibration, the higher the resulting pitch becomes. . . . In a tone language, these pitch differences are used phonemically either to differentiate between word meaning or convey grammatical distinction”

Anyanwu R-J (1998:5) compares ‘tone’ to music of which any of the five larger intervals between one note and the next make up an octave. A high tone can be compared with soprano and a low tone with bass. From the foregoing, three terms often used in discussing tones are: fundamental frequency (F_0), pitch and tone. Fundamental frequency is an acoustic term which refers to frequency of signal and it is often measured in a unit called Hertz, named after a German physicist, Heinrich Hertz (1857-1894). One Hertz equals one cycle per second (1 Hz = 1cps). Pitch on the other hand is what can be perceived as either high or low. This means when the fundamental frequency is too small, perception of pitch differences cannot be noticed. Pitch can be employed in non-speech situation, or used as a signal, like in a high-pitch scream or cry of a baby. Tone is a phonological term used to distinguished two utterances or words in which pitch (either high or low) is used to make the differences in meaning. In other words, pitch plays some linguistic role in word formation of tonal languages. (see Yip 2007:230)

Tonal languages therefore refer to those languages which use pitch (precisely tone) contrastively in word or phrase. Tone refers literally to pitch. According to Pike (1948:14), tonal languages can further be divided into tone and pitch accent languages. By tone we refer to languages where lexical or grammatical differences are manifested by contrast in tonal patterns while pitch-accent type refers to language where accent or prominence is manifested by pitch level. Moreover, while pitch accent languages such as Japanese identify each word with a specific tonal melody, tone languages mark each syllable with specific tone (i.e. pitch). Thus, a change in tone can result in change of meaning of a word. For example, in Oꝛo, differences between the examples given below arise purely from the pitch contrast between a high tone and low tone:

	<u>Tone Pattern</u>	<u>Words</u>	<u>Gloss</u>
Ex. 1	H-H	ú-kú	leg
	H-L	ú-kù	in-law
	L-H	ù-kú	setting of tide

In a tone language as could be seen above, words consisting of identical sequences of consonants and vowels can be distinguished in pronunciation and meaning by the different ways in which the pitch of the voice behaves on each syllable; these different pitch patterns are called tones.

However, in a true tone language, every syllable has its own tone, which is independent of the tones on other syllables. Rather different is a language with a **pitch accent**, in which a single pitch contour is superimposed upon an entire word, and the pitch of one syllable is not independent of the pitch of other syllables. In Japanese, for example, which has two possible pitches, high (H) and low (L), all that can ever happen in a word is that the pitch may go up once and then (later) go down once. Example: *hana* (LL) 'nose', *hana* (LH) 'flower'; *shiro* (HL) 'castle', *shiro* (HL) 'white'; *sakura* (LHH) 'cherry', *zakuro* (HLL) 'pomegranate', *kokoro* (LHL) 'heart'. Patterns like HLH, HLLH and LHLH are prohibited, and so also are HH and HHH. (Trask 2009:299)

Tonal or diacritic marks

In a register (or level) tone system, diacritics such as ´ (acute), ` (grave accent), ˘ (breve), ˆ (circumflex), ˇ (hacek) etc are used in tone marking. Through the marking, words take their meaning following the tone of the syllable. Without tone, a word or construction may be meaningless. In Oꝛo, these diacritic marks are placed on the syllables of words with an assigned description to indicate their tone or pronunciation. Examples as in Table 1:

Table 1

Diacritics	Description	Word	Meaning in Oꝛo
´	H-High tone	Lá	Stand
`	L- Low tone	k-ìn	Reject
˘	M- Mid tone	ō-bōd	hill (first/second syllable)
ˆ	Falling tone	ò-kpô	rubber (second syllable)
ˇ	Rising tone	Kă	Go
I, ↓	Downstep	Mbók	Please

The examples above also indicate the basic tones in Oꝛo. Many languages make use of tones to build their morphemes. Oꝛo is especially rich in this aspect as a single word given a little tonal

variation is capable of generating up to four or five different meanings or more. For example, the words *eberebere*, *edehedehe*, in Qrɔ, could generate quite a lot of meaning as could be seen from the examples in Table 2 and 3.

Table 2

Tonal Pattern	Word	Gloss
H-L-H-H-H	é-bèrébééré	It is dark
L-L-L-L-LH	è-bèrèbèrè	Yam-like
L-H-H-H-HL	è-bérébéré	Like the Black snake
H-L-H-L-L	é-bèrèbèrè	He/she is joking or can play
M-L-H-L-L	ē-bèrèbèrè	They are joking or (they can play)
L-H-H-H-H	è-bérébééré	Until it is dark

Table 3

Tonal Pattern	Word	Gloss
H-L-H-H-H	é-dèhédehé	He, She or it, is frightened
H-L-H-L-L	é-dèhédehè	He or she is hot (temperamental); it is hot (e.g. pepper) or sharp (knife)
L-H-H-H-H	è-dèhédehé	Soundly, well behaved, of good reputation or quality
L-L-L-L-LH	è-dèhèdehè	Not hot or sharp
M-L-H-L-L	ē-dèhédehè	They are hot
M-H-H-H-HL	ē-dèhédehé	They are frightened

From the above examples, in each case, the basic tones: H, L, M, HL, LH could be deduced from Qrɔ's lexicon. This is in line with Pike's steps in tonal analysis and classification of words with contrastive pitch.

Function of tone

A tonal language can be lexically and grammatically distinctive. Lexically, tone functions to create variations in meaning especially in relation to single word or sentence depending on the tone: High, Low or Mid. It is a kind of stress or intensity placed, reduced or removed from words or sentences which caused their meaning to change in a particular language. The variations in meaning must also be clear to all native speakers who alone can tell the differences in meaning.

Beside lexical tones, grammatical tones or distinctiveness are also marked in Qrɔ. Grammatical tones are marked by a word or group of similar words whose meaning are contrasted as a result of tonal inflection. They are grammatical because they specify a sentence to be either a declarative statement or interrogatives; either the subject pronouns acting on something or an agentive. A change in tone could likewise indicate if a sentence is perfective or imperfective.

Lexical function of tone in Qrɔ

The following are examples of lexical tones in Qrɔ and their varying meanings:

Tone pattern	Word	Gloss
Ex. 2 H-H	á-kám	plantain
L-L	à-kàm	prayer
L-H	àkpá	first, onset, beginning
H-H	ákpá	river, sea.

H-HL	á-kpâ	He/she/it, is dead
M-M-M	âkpārā	Harlot, prostitute
H-H-H	á-kpárá	to role gently on the ground
H-H	í-bá	pant
L-L	ì-bà	two
H-H	í-té	spit
L-LH	ì-tě	three
H-L	í-tè	woodlouse
L-HL	ò-kpô	rubber
M-L	ō-kpò	widow
H-H	ó-kpó	bone
H-H	ú-kór	farm (or bush)
H-HL	ú-kôr	raffia palm tree
H-H	í-kpé	cane
M-HL	ī-kpê	boundary
L-H	ì-bá	pant
L-L	ì-bà	two
L-H	ì-sóng	debt
H-L	í-sòng	ground (or earth)
L-LH	ì-wě	cassava
H-H	í-wé	grayhair
H-H	wáná	fight
L-H	wǎñá	empty out something

Grammatical function of tone in Qrɔ

Generally speaking, grammatical tones are marked by a word or group of similar words whose meaning are contrasted as a result of tonal inflection and specification of function due to such derivation. The following are examples in Qrɔ:

Tone pattern	Sentence/word	Gloss
Ex.3H-L	á-wàk	He or she torn to pieces (Statement)
H-H	á-wák?	Is it sufficient? (interrogative)
L-H	à-wák	seed(s) of fluted pumpkin
M-H-M-LH	ōnyí-ā-kǎ	S/he has gone (statement)
M-H-H-LH	ōnyí-á-kǎ?	Did s/he go? (Interrogative)
M-H-H-H	ōnyí-á-ká	S/he holds it (statement)
M-H-M-H-M-LH	ōnyí-mmō-ká- ā-kǎ	S/he is going (statement)
M-H-M-H-H-LH	ōnyí-mmō-ká- á-kǎ?	Is s/he going? (interrogative)
L-L-H-LH	ò-kpì – í-fiě	S/he cut the wood (statement)
H-H-H-HL	ó-kpí – í-fiê	wood-cutter (agentive)
M-H-M-HL	ōnj ^h í ōkûk	S/he has money (statement)
H-H-H-HL	ónj ^h í ókûk	S/he is rich (Agentive)
LH	kǎ	go (imperative)
H	ká	hold (imperative)
H-M-H	álāhá?	Good morning. (Lit.: have you awakened?)
H-L-H	á-l àhá	He, she or it has moved or get away (Statement)
H-H	é-tú	stick or plank
M-L	ē-tù	news (or happening)

L-LH	è-tũ	they should shoot, (imperative) they should throw (imperative)
H-HL	é-tũ	it has been shot or they shot it (perf) It has been thrown or they threw it (perf)

The last example here shows the unique nature of tone in Qr̥ whereby one word is capable of representing many things depending on the tone and the context of usage. One can have a stick (*é-tũ*), a walking stick thus become *é-tũ-isàng*, one can equally hear news (*é-tũ ñkpó ñtēbē*), and group of loyal soldiers can also be commanded to shoot (*è-tũ*), with gun (*kúkáng*), and report can be sent back to the commander (*é-tũ*) it has been shot or they shot it. A straying goat can be captured by a group of boys and they have it tightened (*é-tũ*) with rope (*kóbiò*). Similarly too, two boys fighting may be boxing each other (*é-tũ ètà*), or they may unite to ‘throw’ an orange fruit (*é-tũ òsókōrō*). This is just an example of the rich nature of tone in Qr̥. Grammatical function makes this contrast possible through tonal inflection and specification of function. Moreover, the allophones [n], [m], and [ŋ] can also be used to indicate the first person singular if it carries a high tone. For example:

- Ex. 4 (a) *ńmo ñdi* : I am coming
(b) *ñkèrè Okon* : My name is Okon
(c) *ńsi Oro* : I am from Qr̥

Theory of phoneme differentiation

Phonology which is a subfield of linguistic began to be studied as an independent field (i.e. separate from phonetics) in the second half of the 20th century. During this period, several theories of sound systems were developed by scholars around the globe. Some of the most prominent of these scholars include: Trubetzkoy, Bloomfield, Chomsky, Halle, Clements, Ladefoged etc.

The central concept in the phonological approach was the phoneme principle, an understanding of which permitted great advances in the analysis of the sound systems of languages. This principle enabled linguists to understand the sounds of a language as constituting an orderly system instead of being a mere collection of individual sounds; this insight was one of the early successes of the general approach to language study called structuralism.

Important contributions to phonology were made by the European linguists of the Prague school in the 1930s and by the American structuralists in the 1940s and 1950s. In the late 1950s, phonology was transformed by the introduction of distinctive features (phonological units smaller than phonemes); these features were combined with certain ideas taken from Noam Chomsky’s new theory of transformational grammar to produce a dramatically new approach named generative phonology, which focused on the phonological process occurring in languages. Since the late 1980s, generative phonology has broken up into a variety of more elaborate and competing approaches, the majority of which are collectively known as non-linear phonology; the two most prominent of these are metrical phonology and autosegmental phonology.

The theory of classical American phonemics has phonemes as the minimal phonological elements of language systems. However, Trubetzkoy, one of the founder-members of the Prague School of linguistics developed a different approach. To him and members of the Prague linguistic circle, *phonemes represent bundles or sets of simultaneous distinctive features*. To them, the phonetic feature is the smallest unit of phonology. In the words of Anyanwu RJ (2007:160), the term “**distinctive features** refer to the minimal contrastive unit of the phonological system of languages. Distinctive feature may be seen either as part of the definition of phonemes, or as an alternative to the notion of phoneme.” According to Vashney (1978:88):

Segment theory is linguistically inconvenient. There are a fixed number of features or components which form a basic stockpile from which every language selects phonetic features which keep a segment distinct or separate from others. That is why they are called distinct features.

In other words, a set of distinctive features that defines and characterizes a phoneme e.g. /p/ will be much smaller than the set of phonetic features that characterize any of its allophones. The phoneme /p/ for example in English has features such as bilabial, voiceless, aspirated, oral stop. The aspirated [p^h] would therefore have a fuller articulatory description including the degree of force which air is released after the labial obstruction. But the allophones /p/, /t/, /k/ which are all voiceless stops can be substituted and yet remain meaningful, for example in words like *pin*, *tin* and *kin*. As seen here, part of knowing a language is being able to immediately and correctly place allophones into their phonemic category. In other words, we need to be able to identify a sound and know what category of other similar sounds it gets grouped with. To Lyons (1981:91): The crucial point about the distinctive feature analysis of phonemes is that every phoneme should differ from every other phoneme in the language system with respect to the presence or absence in the set of features that define it of at least one feature; and its set of defining features remain constant throughout the whole range of its occurrences.

Corroborating this, Anyanwu R-J (2007:164) further added:

He (Trubetzkoy) was interested not only in how a phoneme differs from one another, for instance /p/ and /b/ by voicing, but also in what nature the contrast was within a given phonological system. Hence, he classified the distinctive opposition in terms of their relationship is the entire system of opposition. The first dichotomy that Trubetzkoy (1939) establishes is between ‘bilateral’ and ‘multilateral’ opposition...Bilateral opposition entails that the sum of the distinctive features common to both members of the opposition is common to these two members only”.

If, however, there is a third segment, for example /p^h/ as in Thai language, we can say that /p^h/ and /b/ are in a ‘multilateral’ opposition, since there is a third segment /p/ sharing some common properties with them. However, Chomsky and Halle take each of the distinctive features as having only two values which they termed BINARY features. This means that the absence of one value of a distinctive feature in a sound system means the presence of the other e.g VOICE AND VOICELESS. Both features in binary opposition cannot be present in a phoneme at the same time.

Another important aspect of distinctive feature as against the classical American phoneme theory is its ability to determine wellformedness of sequences of phonemes. In a similar vein, allophones /n/, /m/, and /ŋ/ can get assimilated to a following /p/, /b/, or /m/ due to the presence of /+labial/ and /+velar/ as components of phoneme that conditions the assimilation. Thus *un* in *unproductive* becomes [mp], *unbeatable* [mb], *unmistakable* [mm]; *uncouth* [ŋk]; *unguarded* [ŋg]. The rule here is /n/ → /m/ and the spelling does not bear witness to the assimilation process. The features such as /+labial/, /+nasal/, /+ voice/ are to a large extent **suprasegmental**, that is, running over a sequence of two or more segments. Tone is also studied as an aspect of suprasegmental in phonology. Pitch is therefore seen as a phonemic feature of Oro because application of different pitch variations to certain lexical word conveys different meaning. (Lyons 1981:93)

Tonal modification

Generally speaking tone can change in relation to other tones depending on the environment and its function with regard to whether it is a noun or a verb. Sometimes tones gets lost, assimilated, float, re-associated and even deleted. For example a tone is said to be **floating** when its tone bearing unit (TBU) gets lost but its original tone is retained and is re-associated to the next available tone bearing unit in its nearest neighbourhood by means of a process call **docking**. The *Docking Rule* states that a floating H **docks to the right, if and only if** the tone immediately following it is H-[initial] (i.e. if the initial tone of N2 is H) **and a floating L docks to the right always**.

Floating tone is important in non-automatic DOWNSTEP because it is assumed the presence of a floating L-tone can trigger the lowering of a following H-tone. This will obviously lead to a non-

automatic downstep. Thus, tones can be affected by surrounding consonants, type of syllable, vowel quality, stress and length as well as its position in sentence or word.

Moreover, a low tone which precedes a high tone has the effect of slightly lowering that high tone and a low tone can be raised before and between high tones. Essien, (1990:12). The phonologization of declination which leads to phonological process called downdrift is very common in Qr̥. By this process, high tones are drastically lowered after low tones. This can be seen from the following Underlying Representation and Phonetic Representation:

Ex. 5	UR	PR	GLOSS
(a)	H-L-H-H-H /úf̥ok Ábási/ Noun + noun	H-L-L-L-HL -- → [úf̥okÀbàsî]	‘house of God’
(b)	H-L-H-H /úf̥ok íbók/ Noun + noun	H-L-L-HL --- → [úf̥okìbôk] compounding	‘hospital’ (house of medicine)

We can see that in example 5 (a) the once high tones [Ábási] was lowered to [Àbàsî] due to the low tone which precede the high tone even across word boundary. The same in example 5 (b) the once high tone in [íbók] as a single word taking up a low tone and falling tone in [ibôk] respectively as a result of their coming together to form [úf̥okìbôk] due to the effect of the preceding low tone and its function. And this is also a typical example of a lowering influence of a low tone on a high tone extending beyond word boundary.

Moreover, as emphasized above, tones are most likely to influence other tones in their immediate neighbourhood or environment. Tone rules therefore enable linguists to account for the obvious changes noticeable when tones interact with each other. It is under tonology that rules are developed to care for such changes. Some of the basic universally accepted tonal rules which can be adapted to suit the data of any tonal language in question are mostly assimilation, tone spreading and simplification.

Tone Spreading:

Tone spreading is a rule which permits tones to spread beyond its original domain with the view to replace or displace the tones of the following syllable. Most often, spreading can occur from right to left depending on the specific language parameters. It must be noted however that, spreading enables tones to share and donate some of its features to the tone bearing units (TBUs) in its environment.

Partial tone spreading

In partial tone spreading, the tones are either falling or rising from its original state of HL or LH pattern to be either H-HL or L-LH thus giving rise to a compound tone or ‘contour’ tone (cluster). It is shown thus:

	INPUT		OUTPUT
Rule 1	LH	±	LLH
	HL	±	HHL

(Here LH stands for a rising tone from low to high, and HL represents a falling tone from high to low).

Partial tone spreading in Qr̥

	INPUT		OUTPUT	GLOSS
Ex.6 (a)	/ù-kú:/	±	[ù-kú:]	‘setting tide’
(b)	/ù-dú:/	±	[ù-dú:]	‘profit’

In the above first example, the tone of the first syllable spreads into the second thereby creating a kind of contour or cluster tone. This spreading is partial because a trace of the H tone of the second syllable remains in the LH rise and that of the L tone in example 2 remains in the HL falling.

Complete tone spreading

Tone in COMPLETE SPREADING is spread as the name suggest *completely* without any further phonetic trace of the original tone of the first syllable in which the spreading first occurred or started. The rule of complete tone spreading could be formulated thus:

	INPUT		OUTPUT
Rule2(a)	LHH	±	LLH
(b)	HLL	±	HHL

Tone-mapping:

Tone-mapping refers to the ways of matching or aligning Ttone Bearing Units (TBUs) with tones. The TBU could be segments, vowels or syllabic sonorant such as m, r, etc. Tone-mapping could be of one-to-one correspondence, or of one-to-many correspondence.

One-to-one tone-mapping in Qr̥

This type of tone-mapping involves matching in an exact form one-to-one correspondence of tones with their TBUs. This is the simplest form of tone-mapping and many tone languages prefer it. The following is an example of one-to-one tone-mapping in Qr̥:

Ex. 7	H	L	- Tonal tier
			- Association lines
	O	d i	- Segmental tier
	[ó-dĩ]		‘pig’

Tonal polarisation

Tonal polarisation involves a process whereby a morpheme or syllable which was originally toneless phonologically acquire tone by virtue of it standing in contrast to the tone of its preceding adjacent neighbour in the tone bearing units. This could be formalized thus:

	Input		Output
Rule 3	/syll/Ø-TONE	±	[-αH] / [αH]

(Where [syll] Ø-TONE represents a toneless syllable, while [αH] represents either High or Low tone)

In Qr̥, we have the following example:

	Input		Output	
	Verb prefix		Verb root	Phrase Glos
Ex. 8 (a)	/e-/	+	H-toned: /-té/	± [è-té] they should cut (e.g. grass)
(b)	/e-/	+	L-toned: /-mè/	± [é-mè] has put to birth
(c)	/a-/	+	L-toned: /-tàk/	± [á-tàk] to waste or it wasted

From the foregoing, we can reasonably conclude that tones can be affected by such factors as surrounding consonants, vowel quality, stress and length, position in the sentence or word and type of syllable.

Conclusion

An analysis of tones in Qr̥ was an exciting research work which aimed to bring out Qr̥ language from its rudimentary stage as far as language study is concerned, and an overtly mass-classification and generalization with Ibibio/Efik to that of a renowned language with a very rich inventory of tones and tonal systems worthy of classical studies on its own merit. Knowing that Qr̥ is a minority language should move its speakers to strive to preserve it, as the only means through which their

culture is expressed. It is the only means that all sons and daughters are culturally bound together. Without language we are merely existing and not living due to the fact that language gives us our identity and humanity.

Recommendations

We all should do what is necessary to preserve our language and culture for posterity sake. This is because we cannot do without language. In particular, our language is our identity, our voice and a means through which we express our worldview. We should take the advantage offered by ICT to promote and preserve our languages as language students and scholars. Every language should likewise develop website for their language studies – a website to which all experts and language learners could easily gained access, either for contribution or for learning. This will no doubt contribute in no small measure to the preservation and growth of Language generally and our languages in particular.

Those whose languages could be classified as minority languages, more especially, should develop their orthographies and primers for more effective language studies.

The challenge before Oꝛo speakers and most especially their linguists and scholars is particularly great. To this end, the following recommendations were advanced by the researchers:

- A website for Oꝛo language studies should be created where all Oꝛo sons, linguists and scholars could be contributing their research findings and historical facts.
- Oꝛo's orthography which is already in place should be revisited and improved. Primers should be produced to kick-start an effective Oꝛo teaching and learning.
- It is sad that having stayed in their present abode for close to a millennium, Oꝛo's people cannot have God's word the bible translated into their own language. To this end, a bible committee is recommended to be set up. A sub-committee should be set up in every district, to compliment the effort of the central committee under the watchful eyes of Oꝛo union and these committees need to be adequately financed..
- Additionally, the tone systems and pattern should be made clearer to second language learners L2 so as to encourage them in the study of the language. Since charity is said to begin at home, the Oꝛo speakers should take the initiative.

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