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AUTHOR Schaefer, Ronald P.; Egbokhare, Francis O.
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ABSTRACT

A study of Emai, an Edoid language of south-central Nigeria, focuses on the system of constraints governing tonal processes. Specifically, it examines the ways in which general processes of low tone raising and high tone lowering are realized in domains constructed by verbs and by preverbal auxiliary and adverbial constituents. Sequentially ordered in some environments, these processes are constrained on one hand by expression of aspectual and polarity categories, ultimately making tonal pattern dependent on an agreement category preceding the verb, and on the other hand, by an inflectional category incorporating deontic modality particles and the imperative mood. For each of these processes, the operational syntactic domains and positions of application are examined. Domains range from the verb phrase itself to the inflectional preverbal phrase within which syllabically-defined constituents also become relevant. The study concludes by postulating a single category underlying deontic modality and imperative constructions. The underlying notion is that Emai facts can be accounted for by positing rules of maximal generality and then factoring them into domains of varying syntactic complexity. Contains nine references. (MSE)

Emai Verbal and Preverbal Tone: Preliminaries

Ronald P. Schaefer and Francis O. Egbokhare[1]

SIU at Edwardsville and University of Ibadan

For the past decade the intersection of phonology and syntax has been a focal area of linguistic investigation. Attention to interface issues has centered on the relationship between syntactic configurations and either segmental or suprasegmental phenomena (Kaisse 1985, Selkirk 1984, Inkelas and Zec 1990, Cassimjee and Kisseberth 1989, Odden 1990). Relative to the latter, Kisseberth (1992) has explored the nature and scope of syntactic domains controlling tonal processes in the Bantu language Xitsonga. For the most part, this attention has been directed to verb and noun phrases. Little investigation has centered on the tonal behavior of what might traditionally be viewed as auxiliary units or other preverbal elements.

Kisseberth (1992) appeals for greater attention to the role of domains in phonological theorizing. In a shift away from the geometry of phonological representations, he suggests that emphasis be centered on how domains determine the particular way a rule applies to a phonological representation, thus assuming the the latter to be restricted by domains of different types. He furthermore notes that domains are of two essential types, direct and indirect. Some domains are provided directly by phonological, morphological or syntactic constituents. Other domains, constructed on the basis of these constituents, are provided indirectly. Lastly, he cites functions which domains play in restricting the application of phonological rules. On the one hand, they restrict configuration type to which a phonological rule applies, limiting the latter to noun phrases or verb phrases for instance. They also delimit rule application to certain positions within a domain, a constituent's left- or right-most edge for example.

For this paper we undertake a preliminary sketch of a system of constraints governing tonal processes in Emai, a Benue-Congo language (Williamson 1989) of south-central Nigeria belonging to the Edoid family (Elugbe 1989). Syntactically, Emai is a strict SVO verb-serializing language. It manifests two significant level tones, low and high, but permits rising and falling tone to emerge when the former are syntactically juxtaposed. More specifically, we describe how general processes of low tone raising and high tone lowering are realized in domains constructed not only by verbs but also by preverbal auxiliary and adverbial constituents. Sequentially ordered in some environments, these processes are constrained, on the one hand, by the expression of aspectual and polarity categories, ultimately making tonal patterning dependent on an agreement category preceding the verb, and on the other, by an inflectional category incorporating deontic modality particles and the imperative mood.

For each of these processes, we attempt to specify their operational syntactic domains and positions of application. Their domains range from the verb phrase itself to the inflectional preverbal phrase within which syllabically-defined constituents also become relevant. Their position of application within these domains is restricted to a phrase's left or right edge. We conclude by postulating a single category underlying deontic modality and imperative constructions. Our basic notion, following Kisseberth, is that the Emai facts can be accounted for by positing rules of maximal generality and then factoring them into domains of varying syntactic complexity.

Although tonal variation of verb and preverbal elements is keyed to the inflectional categories agreement and deontic modality, verbs as well as auxiliary and adverbial constituents show no tonal contrast at the lexical level. As a consequence, verbs are assigned by rule their surface level tone values. The same applies to members of the auxiliary classes, in particular epistemic modality and time, as well as monosyllabic preverbal adverbials, all of which exhibit differential tonal values correlating with position in the preverbal phrase. A residual class of polysyllabic adverbials manifests only limited sensitivity to inflectional class and to position within the preverbal phrase. By examining constraints on this tonal variation we hope to develop a principled analysis of tonal melody across the preverbal phrase as well as the verb itself.

Constraints affecting Emai verb tone are grounded, on the one hand, to the realization of an agreement or concord particle in certain aspectual and polarity conditions. Prime illustration of these tonal constraints is found in clauses lacking preverbal adverbials or auxiliary particles, in particular an agreement particle. Under conditions of perfective aspect and affirmative polarity, where Emai distinguishes Completive Past from Completive Present by tonal marking on the grammatical subject, verbs like e 'to eat' receive high tone.[2]

1.a. ólí ómóhé é ólí émae
the man eat the food
'the man ate the food'

b. ólí ómọhe é ólí émae
the man eat the food
'the man has eaten the food'

A distinct tonal pattern arises under conditions of imperfective aspect and negative polarity. Imperfective aspect, which distinguishes Continuous from Habitual through contrastive tones on an imperfective particle and a subject concord particle, requires a verb with low tone.[3] As an aside, note that the lexical (high low low) vs. nonlexical (high high high) tone of the subject head noun mirrors, respectively, the low vs. high tone value of the subject concord particle.

2.a. ólí ómọhe ọ ó e ọlí émae[4]
the man SC C eat the food
'the man is eating the food'

b. ólí ómọ́hé ó ọ e iyési
the man SC H eat rice
'the man eats rice'

With like effect, negative polarity clauses designated by a concord and negative-particle complex demand a verb with low tone.

3. ólí ómọhe í i e ọlí émae
the man SC NEG eat the food
'the man did not eat the food'

Verb tone, at least for these two broad classes, is conditioned by different realizations of the inflectional category agreement, which we assume is specified as either -AGR and +AGR. The former incorporates affirmative perfectives, expressed without an agreement or concord particle, and the latter imperfectives and the negative, both of which require an agreement or concord particle.

These two inflectional classes constrain verb tone absolutely. The presence of auxiliary or adverbial particles in preverbal position commanded by -AGR or +AGR does not affect verb tone. When an auxiliary particle such as Certaintive *ma* precedes the verb, high tone is retained on the verb in -AGR constructions, i.e. perfectives.

4. ólí ómọ́hé má é ólí émae
the man CER eat the food
'the man certainly ate the food'

Similarly, +AGR constructions, imperfectives and negatives, with Certaintive *ma* demand a verb with low tone.

5.a. ólí ómọ́hé ó ọ má to vbí éma
the man SC H CER fond-of L yam
'the man is surely fond of yam'

b. ólí ómọhe í i má e ọlí émae
the man SC NEG CER eat the food
'the man did not surely eat the food'

Adding still another auxiliary particle in preverbal position has no affect on verb tone either, as when the Subsequent particle *kpọ* follows Certaintive *ma* in Completive Past constructions (6a), where verb tone is high, or in negative constructions (6b), where verb tone is low.

6.a. ólí ómóhé má kpe é ólí émae
the man CER SUB eat the food
'the man surely ate the food beforehand'

b. ólí ómohe í i má kpe e olí émae
the man SC NEG CER SUB eat the food
'the man did not surely eat the food beforehand'

In like fashion, adding an adverbial to a preverbal phrase containing an auxiliary particle has no impact on verb tone. In perfective constructions, none of the adverbials *che*, *gbudu*, *kákégbe* or *zémi* following Certaintive *ma* alters the verb's high tone.

7. a. ólí ómóhé má che é ólí émae
the man CER REP eat the food
'the man surely ate the food again'

b. ólí ómóhé má gbudu kó éma
the man CER courageously plant yam
'the man surely planted yam courageously'

c. ólí ómóhé má kákégbe é ólí émae
the man CER perseveringly eat the food
'the man surely ate the food with perseverance'

d. ólí ómóhé má zémi é ólí émae
the man CER ABSI eat the food
'the man surely ate a lot of the food'

Negative constructions formed with the adverbials *gbudu* or *míti* following the auxiliary particle *ke* maintain the verb's low tone.

8.a. ólí ómohe í i ké gbudú e olí émae
the man SC NEG ANT courageously eat the food
'the man did not subsequently eat the food with courage'

b. ólí ómohe í i ké mití e olí émae
the man SC NEG ANT be able eat the food
'the man was not subsequently able to eat the food'

When only adverbial particles occur in a preverbal phrase commanded by -AGR or +AGR, there is no change in verb tone. In the perfectives Completive Past or Completive Present, verbs preceded by the Repetitive aspectualizer *che* exhibit high tone.

9. a. ólí ómóhé ché é ólí émae
the man REP eat the food
'the man again ate the food'

b. ólí ómohe chée é ólí émae
the man REP eat the food
'the man again has eaten the food'

Verbs preceded by an adverbial in imperfective or negative constructions show low tone.

10.a. ólí ómohe o ó ché e olí émae
the man SC C REP eat the food
'the man is eating the food again'

b. ólí ómohe í i ché e olí émae
the man SC NEG REP eat the food
'the man did not eat the food again'

These constraints argue that the syntactic category verb phrase serves as the domain of application for a rule assigning verb tone. Preceding particles such as auxiliaries or adverbials do not impinge on its implementation. Within the verb phrase, this rule's position of application is restricted to the leftmost edge, i.e. the verb phrase head.

To account for these facts we assume that verbs manifest a lexical low tone. Given this and the previously distinguished specifications -AGR and +AGR, we posit a rule claiming that any low tone or low tone series in a verb head is raised to high tone or a high series when that verb and its verb phrase are preceded, though not necessarily immediately so, by -AGR. Thus a condition of immediate precedence between categories is not required for raising low tones commanded by -AGR.

I. $L^n \rightarrow H^n$ / [-AGR [XP^n [VP [V' [V

$n \geq 0$

Constraints reflecting the domain and position of application of a second rule are reflected in tonal variation characterizing auxiliary and adverbial elements. In preceding examples, a single preverbal constituent manifested high tone, e.g. Certaintive *ma* showed a consistent high tone, regardless of the agreement category's value, +AGR or -AGR. In multi-particle constructions where *ma* is non-initial in the preverbal phrase, following for instance the Deductive particle *záa*, it manifests low tone.

11. ólí ómohe záa ma é olí émae lé
the man DED CER eat the food TER
'the man must have surely eaten all the food'

More generally, time and epistemic modality particles which appear in non-initial position in the preverbal phrase show low tone. The contrasting tonal values of the time particle *kpe* in initial and non-initial position, high in the former but low in the latter, support this generalization.

12.a. ólí ómóhé kpé che é olí émae
the man SUB REP eat the food
'the man beforehand ate the food again'

b. ólí ómóhé má kpe é olí émae
the man CER SUB eat the food
'the man surely ate the food beforehand'

Only deontic modality particles never occur in non-initial position, and they, as a special case, will be dealt with later. Table I thus presents the lexical tone values for time and modality particles.

Table I. Tone values for modality and time particles.

DEONTIC MODALITY		EPISTEMIC MODALITY	
lọ	Predictive	kha	Hypothetical
lọ	Anticipative	za	Deductive
i	Hortative	za	Resultative
		ma	Certaintive
TIME		bia	Dubitative
ke	Anterior	vba	Dubitative
kpẹ	Subsequent	rerẹ	Concessive
rẹ	Sequential		

It is not only the tone value of epistemic modality and time particles which changes according to position in the preverbal phrase. A number of monosyllabic adverbials such as *che*, shown previously in (9) and (10), manifest this pattern. In single particle constructions, regardless of agreement specification, *che* exhibited high tone. In multi-particle constructions, *che*'s tone value correlates with position in the preverbal phrase. In multi-particle constructions defined by two adverbials, *che* occurs in initial or non-initial preverbal position, but only in initial position, (13a), does it evince high tone. Non-initial *che*, (13b), exhibits low tone.

13.a. ólí ómóhé ché ghe sá ójé ávboha
the man REP PCT slap Oje's shoulder
'the man again just slapped Oje on the shoulder'

b. ólí ómóhé ghé che sá ójé ávboha
the man PCT REP slap Oje's shoulder
'the man just slapped Oje on the shoulder again'

Not all adverbials exhibit contrasting tonal values of the type shown by *che*. Most polysyllabic adverbials in non-initial position in perfective constructions exhibit a combination of high and low tones, while others manifest only lows. For instance, the adverbial particles *zézẹ* (14a) and *kákégbe* (14b) in non-initial position evince a high tone or high tone series followed by a low tone, while the adverbial *gbudu* (14c) shows a low tone series.

14.a. ólí ómóhé ché zézẹ é vbí ólí émae
the man REP NABI eat L the food
'the man again ate a little from the food'

b. ólí ómóhé ché kákégbe é ólí émae
the man REP perseveringly eat the food
'the man again ate the food with perseverance'

c. ólí ómóhé ché gbudu váre?
the man REP really come
'did the man really come again?'

Of a similar nature is the adverbial *míti*, which in perfective constructions shows a high low pattern in both non-initial (15a) and initial (15b) position.

15.a. ólí ómóhé gbó míti é ólí émae lé
the man EMR be able eat the food TER
'the man was able to finish eating the food too'

b. ólí ómóhé míti dóbó ói é ólí émae
the man be able REFL his eat the food
'the man was able by himself to eat the food'

The behavior of adverbial units in non-initial preverbal position in perfective constructions, as suggested above, is indicative of lexical tone values. Relying on this diagnostic, we assume the lexical tone values for adverbial elements shown in Table II.

Table II. Lexical tone values for adverbial particles.

NONPHASAL ASPECTUALIZERS		PHASAL ASPECTUALIZERS	
che	Repetitive	ya	Jussive
gbo	Emphatic Repetitive	ya	Prospective
se	Durative	ya	Past Absolute
ghe	Punctual	mo	Conative
		mo	Past Absolute
		ó	Inceptive

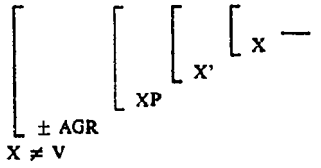
INTENSIFIERS		EVALUATIVE	
zémi	ABSI	duu	'without reason'
zéze	NABI	woo	'would be better'
		kuku	'fortuitous'

SUBJECT QUANTIFICATION		MANNER-DEICTIC	
dóbó pro	Reflexive	íná	'this way'
gba	Collective	íyó	'that way'

SUBJECT	ATTRIBUTIVE MANNER	TEMPORAL
dábo	dégbe	bóbo
'intentionally'	'steadily'	'promptly'
dóbo	gbudu	tua
'accidentally'	'unbeliveably'	'hurriedly'
míti	kákégbe	kpao
'be able'	'perseveringly'	'earlier on'
dúda	tótóbo	gue
'defiantly'	'intensely'	'unexpectedly'

Given these assumptions pertaining to the lexical tone values of auxiliary and adverbial categories, it appears that phrase level configurations preceding the verb phrase serve as the domain of application for a second tone rule. This rule is conditioned by the inflectional category agreement realized as either +AGR or -AGR. Within the preverbal phrase, this tone rule's position of application is restricted to the left edge. Only the initial element of the auxiliary or adverbial phrase, not any succeeding element, is affected.

Accordingly, we posit the following rule stating that a low tone at the left edge of a preverbal phrase, i.e. an auxiliary or adverbial, immediately preceded by the agreement category AGR is raised to high. In contrast to rule one, a condition of immediate precedence between the agreement category, however it might be specified, and its following non-verb category governs the raising of low tones in auxiliary and adverbial elements.

II. L --> H / 

A third tone rule complex, actually two ordered rules, is revealed by tonal constraints in the preverbal phrase of imperfective and negative constructions. Some polysyllabic adverbials exhibit contrasting tone values that correlate with differences in realization of the agreement category. Although tonally distinct at the lexical level, particles like *míti* and *gbudu* exhibit a similar high low pattern in initial preverbal position in -AGR constructions, i.e. affirmative perfectives.

16.a. ólí ómohe míti gbé ólí éwe
the man able kill the goat
'the man has been able to kill the goat'

b. ólí ómohe gbúdu é ólí émae
the man courageously eat the food
'the man ate the food with courage'

In negative and imperfective constructions, specified as +AGR, these same particles manifest low high tone. How do we account for this tonal variation?

17.a. ólí ómohe í i mití gbe olí éwe
the man SC NEG able kill the goat
'the man was not able to kill the goat'

b. ólí ómohe í i gbudú e olí émae
the man SC NEG courageously eat the food
'the man did not eat the food with courage'

c. ólí ómóhé ó o mití tu imóto
the man SC H be able drive car
'the man is able to drive a car'

d. ólí ómohe o ó gbudú e olí émae
the man SC C courageously eat the food
'the man is eating the food with courage'

Before proceeding further, we note that even in multi-particle constructions where *míti* or *gbudu* are non-initial, the low high pattern persists, provided the phrase is commanded by +AGR.

18.a. ólí ómohe í i ké mití e olí émae
the man SC NEG ANT be able eat the food
'the man was not subsequently able to eat the food'

b. ólí ómohe í i sé gbudú e olí émae
the man SC NEG DUR courageously eat the food
'the man still did not eat the food with courage'

This +AGR condition affecting polysyllabic adverbials reflects two constraints. First, a final low tone in a polysyllabic unit immediately preceding a verb phrase commanded by

+AGR is disallowed. Second, an initial high high sequence in a polysyllabic unit commanded by +AGR is unacceptable.

Each of these constraints, as indicated, operates within a domain in the preverbal phrase characterized by a multi-tone sequence. In the first instance, the domain of application is further specified in order to include a final low in the tone sequence immediately preceding the verb phrase, whereas in the second an initial high sequence is required. Within this domain, positions of application differ: the rightmost edge of the sequence is altered in response to the first constraint, and the leftmost edge in response to the second.

The following rule responds to these constraints governing polysyllabic adverbials and the category agreement. The first states that a low tone at the right edge of a polysyllabic particle commanded by +AGR, a particle not necessarily immediately following the latter, raises to high.

III. a. L --> H / $[_{+AGR}\ [_{XP^n}\ [_{ADVP}\ [_{ADV^n}\ [_{ADV}\ \alpha\ \_\_$

$\alpha = L^n$ or H^n, $n \geq 0$

A second rule, ordered after the first, requires that polysyllabic particles with an initial high high sequence lower their initial high. Again, no immediate precedence condition relative to +AGR exists.

b. H --> L / $[_{+AGR}\ [_{XP^n}\ [_{ADVP}\ [_{ADV^n}\ [_{ADV}\ \_\_\ H$

$X \neq V$, $n \geq 0$

Verbs and preverbal particles reflect a more complex pattern of tonal constraints in constructions involving deontic modality particles or the imperative mood. Actually, verb tone in deontic and imperative constructions exhibits a conditioned variability not seen in preceding patterns. Requiring the formation of an additional rule, this variability reflects changes in the immediate precedence relation governing the deontic category and the verb phrase.

When a preverbal phrase contains a deontic particle, either the Predictive, Anticipative or Hortative, followed by an auxiliary or adverbial particle, the verb evinces high tone. The presence of Certaintive (19a), Subsequent (19b) or Repetitive (19c) particles following the deontic Predictive leads to a verb with high tone.

19.a. ólí ómóhé ló ma é ólí émae
the man PRED CER eat the food
'the man will surely eat the food'

b. ólí ómóhé ló kpẹ́ é olí émae
the man PRED SUB eat the food
'the man will eat the food beforehand'

c. ólí ómóhé ló che é ólí émae
the man PRED REP eat the food
'the man will again eat the food'

Deontic constructions, in other words, lead to verb tone marking akin to constructions specified as -AGR. In fact, deontic particles do not co-occur with the concord particles defining imperfective (20a) or negative (20b) constructions. More important though, deontic particles do not appear with a subject concord particle (20c).

20.a. * ólí ómọhe ọ ó ló e éma
the man SC C PRED eat yam

b. * ólí ómọhe í i ló e olí émae
the man SC NEG PRED eat the food

c. * ólí ómóhé ó ló e éma
the man SC PRED eat yam

These facts suggest that, like -AGR constructions in the perfective where an agreement particle in the preverbal phrase was lacking, deontic particle constructions follow rule I. That is, the inherent low tone of a verb is raised to high when its preceding preverbal phrase is registered for the value -AGR.

As a class, deontic particles never follow other auxiliary or adverbial particles. Support for this is found in the ungrammaticality of the auxiliary orders in the following sentences, where the deontic particle Predictive is non-initial.

21.a. * ólí ómóhé má lọ é ólí émae
the man CER PRED eat the food

b. * ólí ómóhé kpé lọ é olí émae
the man SUB PRED eat the food

c. * ólí ómóhé ché lọ é ólí émae
the man REP PRED eat the food

Due to their restricted position in the preverbal phrase, it is not surprising that deontic particles are consistently high toned, never exhibiting low tone. Given this consistent value, deontic particles appear to follow rule II: the inherent low tone of deontic particles raises to high in response to the category agreement, irrespective of the latter's positive or negative value.

A contrasting tonal pattern also characterizes deontic constructions. In the absence of a following auxiliary or adverbial, deontic particles require that their following verb exhibit low tone. The deontic particles Predictive (22a),

Anticipative (22b) or Hortative (22c), all require that their following verb exhibit low tone.

22.a. ólí ómóhé ló e olí émae
the man PRED eat the food
'the man will eat the food'

b. ólí ómọhe ló e olí émae[5]
the man ANTI eat the food
'the man is about to eat the food'

c. ólí ómọhe í e olí émae
the man HOR eat the food
'the man should eat the food'

We assume that this lowering of the verb's tone is due to an immediate precedence constraint governing the deontic category and the verb phrase. The applicable generalization seems to be that a verb's high tone is lowered when immediately preceded by a deontic particle.

The corresponding tone rule, formulated in IV, states that a high tone or high series at the edge of a verb phrase, i.e. the verb phrase head, and immediately preceded by the deontic (DT) category is lowered. This rule, ordered after rule I, essentially reflects a tonal condition generated as a response to the juxtaposition of deontic and verb categories.

IV. $H^n \rightarrow L^n$ / [DT [VP [V' [V —

Quite similar constraints are reflected by verbs and their associated preverbal particles in imperative constructions. A verb, when preceded by an adverbial particle in an imperative construction, shows high tone.

23. che é olí émae
REP eat the food
'eat the food again'

In basic imperative constructions, those where no particle precedes the verb, the verb manifests low tone.

24. e olí émae
eat the food
'eat the food'

This consistent alternation in the verb tone of imperatives and its identity with verb tone alternation in constructions marked with overt deontic particles suggest that similar syntactic configurations underlie deontics and imperatives. Indeed, their common irrealis characterization of events strengthens this assumption. Accordingly, we propose to extend the rules previously constructed for deontic particle constructions to imperative constructions.

To articulate this position, we make the following assumptions regarding the syntactic specification of imperative constructions. The first is that imperatives, consistent with deontic constructions, exhibit a -AGR specification. Imperative constructions will thus be subject to rule I, where a verb's inherent low tone is raised to high given a -AGR specification. This will account for the verb's high tone in example 23. Our second assumption is that imperatives manifest a covert deontic category marker, i.e. a null deontic particle. Imperative constructions, like those containing overt deontic particles, will thus be subject to rule IV, where a verb's high tone is lowered when deontic and verb categories are juxtaposed. This will explain the verb's low tone in example 24. Moreover, by positing an underlying null deontic particle in imperatives, the low tone of the adverbial *che* in example 23 becomes understandable. That is, if there is an underlying null particle in 23, *che* is actually in non-initial position in the preverbal phrase, the position where lexical tone values for monosyllabic adverbials were consistently manifest across perfective, imperfective and negative constructions.

That imperative and deontic particle constructions exhibit a common grammatical category is also reflected in their similar treatment of polysyllabic adverbials. Preverbal phrases containing polysyllabic adverbial particles provide evidence of an immediate precedence constraint between deontic and verb categories whereby the initial high of a high high sequence lowers.

Recall first that in -AGR configurations, a single adverbial in the preverbal phrase manifested an initial high tone, while second position in multi-particle preverbal phrases revealed lexical values, i.e. (25a-d) and those indicated in Table 2.

25.a. ólí ómóhé ché bóbo dé imótó óvbeé
the man REP promptly buy car another
'the man promptly bought another car again'

b. ólí ómohe chée gbudu é ólí émae?
the man REP courageously eat the food
'has the man again eaten the food with courage'

c. ólí ómóhé ché tótóbo nwú óli ibe móé
the man REP intensely take the drum have
'the man held the drum with intensity again'

d. ólí ómóhé ché kákégbe é ólí émae
the man REP perseveringly eat the food
'the man ate the food with perseverance again'

In deontic constructions, these same particles, except for *tótóbo* and *kákégbe*, exhibit identical patterns of tone marking. Particles such as *bóbo* (26a), which have lexical high low values, and *gbudu* (26b), which have lexical low low values, retain their lexical stature following the deontic Hortative particle.

26.a. ólí ómohe í bóbo é ólí émae
the man HOR promptly eat the food
'the man should promptly eat the food'

b. ólí ómọhe í gbudu gbé ólí ófe
the man HOR courageously kill the rat
'the man should courageously kill the rat'

In contrast is the behavior of the adverbials *tótóbọ* and *kákégbe*, each with lexical high high low, after the Hortative, more generally any deontic particle. These polysyllabic adverbials with initial high sequences undergo a tonal change when immediately following a deontic particle: the initial high becomes low.

27.a. ólí ómọhe í totóbọ nwú óli ibe móé
the man HOR intensely take the drum have
'the man should hold the drum with intensity'

b. ólí ómọhe í kakégbe gbé ólí ófe
the man HOR perseveringly kill the rat
'the man should kill the rat with perseverance'

Consider now the tonal characteristics of these same polysyllabic elements in imperative constructions. They behave in a similar manner. The particles *bóbọ* and *gbudu* exhibit their lexical values, high low (28a) and low low (28b), respectively, as would be predicted if the deontic category preceded each.

28.a. bóbọ é ólí émae
promptly eat the food
'promptly eat the fo[illegible]'

b. gbudu gbé ólí ófe
courageously kill the rat
'kill the rat with courage'

On the other hand, the adverbials *tótóbọ* and *kákégbe* manifest nonlexical values, in particular an initial low tone. This pattern, according to our hypothesis, is also a reflex of the category deontic in the underlying structure of imperatives.

29.a. totóbọ nwú óli ibe móé
intensely take the drum have
'hold the drum with intensity'

b. kakégbe gbé ólí ófe
perseveringly kill the rat
'kill the rat with perseverance'

The applicable constraint seems to be that a high high tone sequence is not allowed immediately following the deontic category, irrespective of the latter's overt or covert realization. The corresponding tone rule's domain of application is a preverbal adverbial phrase and its position of application is the left edge of this phrase. As presented below, this rule states that for a sequence of high tones at the left edge of a preverbal adverbial, immediately preceded by the deontic category, the leftmost high becomes low. As with rule IV, a condition of immediate precedence between deontic and verb categories controls high tone lowering.

V. H --> L / [[[[__ H
ADV
ADV'
ADVP
DT

Since this tonal change applies equally to polysyllabic adverbials in imperative or deontic particle constructions, we gain additional evidence that a common syntactic category, deontic, underlies both. Imperatives and deontic particles thus reflect a common inflectional class.

Our goal in the preceding was to develop an initial sketch of constraints governing tonal processes across auxiliary, adverbial and verb phrases. We have attempted to deal with this issue by examining the domains in which these rules are applied and implemented.

Our general conclusion is that these tonal constraints in Emai are best specified in terms of syntactic representations. In particular, it appears that category specifications within a broad inflectional configuration in conjunction with conditions of hierarchical dominance or immediate precedence govern tonal melody in the preverbal and verbal phrase. Our hope is that the categories and configurations found to govern tonal behavior in Emai can be tested against tonal patterns existing in other languages, but most specifically those of the Edoid group which today remain largely undocumented.

ENDNOTES

1. Analysis of the data on which this paper is based was supported by faculty research grants to the first author from Southern Illinois University at Edwardsville and the National Science Foundation, BNS #9011338.

2. Completive Past and Completive Present are distinguished here solely by tonal melody on the head noun of the grammatical subject: lexical (ómọhe) tone for the Completive Present and non-lexical (ómọ́hé) for the Completive Past.

3. Abbreviations used throughout this paper include the following: Continuous (C), Habitual (H), Subject Concord (SC) and Negative (NEG). Others can be inferred directly from the text.

4. Changes in the tone value of the determiner in the direct object phrase are conditioned by verb tone, and thus ultimately by the category Agreement. Discussion of such changes are found in Schaefer and Egbokhare (To appear).

5. The Anticipative and Predictive functions of the particle lọ́ are distinguished solely by tonal melody on the head of the grammatical subject: lexical (ómọhe) tone for the Anticipative and non-lexical (ómọ́hé) for the Predictive.

REFERENCES

Cassimjee, Farida and Charles Kisseberth. 1989. Shigazidja nominal accent. Studies in the Linguistic Sciences 19.1.33-61.

Elugbe, Ben. 1989. Edoid. The Niger-Congo languages, ed. by J. Bendor-Samuel, 291-304. New York: University Press of America.

Inkelas, Sharon and Drago Zec. eds. 1990. The phonology-syntax connection. Chicago: University of Chicago Press.

Kaisse, Ellen. 1985. Connected speech: the interaction of syntax and phonology. New York: Academic Press.

Kisseberth, Charles. 1992. On domains in phonology: The Xitsonga evidence. Linguistics Seminar. University of Illinois. Champaign-Urbana.

Odden, David. 1990. Syntax, lexical rules and postlexical rules in Kimatuumbi. The phonology-syntax connection, ed by S. Inkelas and D. Zec. 259-277. Chicago: University of Chicago Press.

Schaefer, R.P. and F. Egbokhare. To appear. Ditransitives and high tone lowering in Emai. Proceedings of the Mid-America linguistics conference, ed. by D. Rood. Boulder: University of Colorado.

Selkirk, Elizabeth. 1984. Phonology and syntax: the relationship between sound and structure. Cambridge, MA: MIT Press.

Williamson, Kay. 1989. Benue-Congo overview. The Niger-Congo languages, ed. by J. Bendor-Samuel, 246-274. New York: University Press of America.