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THE RELATION BETWEEN THE MIDDLE TONE AND "EMPTY CATEGORY PRINCIPLE" VIOLATIONS IN KRIO*

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An examination of monosyllabic words in Krio reveals the existence of three distinct tones: high, mid and low. In words of more than one syllable, however, only two tones are attested: high and low. The mid tone is, in fact, found only in monosyllabic forms in two very specific contexts: citation forms and sentence final forms. In other contexts, the mid tone is replaced by the high tone. This suggests that the mid tone is merely a phonetic variant of the high tone. The interaction of tones and syntax is considered, in a very specific context.

0. Introduction

Only a few "European-based"[1] pidgin and creole languages have been identified as tone languages. Among these are Jamaican Creole [Lawton 1968],[2] Sara-

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*I wish to thank R. Schuh and an anonymous reviewer for comments on an earlier version of this paper. The latter was a revised and extended version of Nylander [1981b], the manuscript version of Nylander [1979]. The latter was presented at a colloquium in Buffalo, New York. I wish to thank Professor N. Domingue of McGill University who encouraged me to do the research for Nylander [1979]. I would also like to thank the department of Linguistics of McGill University for financing my trip to and from Buffalo. In this article, tones are noted as follows: ´ (high tone), ¯ (mid tone), ` (low tone). The following abbreviations will be used: A = accusative case form; O = oblique Case form; OBL = obligative mood; PERF = perfective aspect; PL = plural marker; PROG = progressive aspect; PROS = prospective mood.

[1]"European-based" is to be taken as meaning that the pidgin or creole derives the bulk of its lexical items from some European language (or languages, in the case of Saramaccan, which derives one third of its lexicon from English and another third from Portuguese—cf. Taylor [1971:293]).

[2]The most striking feature in Lawton's data is that sequences of the same tone are not attested in individual words, although they are attested in sentences.

maccan [Taylor 1963:800, 813n] and Nigerian Pidgin [Mafeni 1971]. Some creole languages have been categorically identified as non-tonal languages.[3]

This paper deals with a creole language that has been positively identified as a tone language, Krio, the "English-based" creole language of Sierra Leone and other parts of West Africa [Berry 1971; Jones 1971]. The rest of the paper is divided into three parts. Part 1 sketches the history of the study of Krio tones. Part 2 considers the status of the middle tone in Krio, a topic which has, indirectly, been the subject of some controversy. Part 3 examines the relationship between the middle tone and ECP violations in Krio. The fact that a complementizer can take on a middle tone argues in favour of the lexical status of the complementizer.

1. Studies on Krio Tones

In 1959, Jack Berry identified Krio as a tone language.[4] There must have been a lot of skeptics around, for it took no less than nine years before it was generally agreed that krio *is* a tone language. In the mid-sixties, Strevens [1965:116] described Krio as having "a system of stress and intonation of the same nature as that of Received Pronunciation." Later, Bradshaw [1966: 62n] remarked:

> One of the most fascinating problems presented by Krio is that of tone. There seems to be little agreement as to how far, if at all, tone is significant in the language.

It was only in 1968, at the Mona Conference on Pidgins and Creoles, that it was generally agreed that Krio *is* a tone language. The consensus followed the presentation of another paper by Berry.[5] Commenting on the paper, Hymes

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[3]One such language is Guyanese French Creole: "Le guyanais ne connaît ... ni accent ni tons distinctifs propres" [Saint Jacques Fauquenoy 1972:52]. Another language in this category is Dominican Creole: "...bien que ce créole ait souvent recours à des intonations de grande étendue, inusitées en français, il n'est pas une langue à tons" [Taylor 1968:1023].

[4]Berry's paper was presented at the First International Conference on Creole Languages, held in Jamaica in 1959. It was subsequently published as Berry [1961].

[5]Berry's presentation was eventually published as Berry [1970a]. See also Berry [1970b]. The tonal nature of Krio has since been confirmed in a number of studies, including Coker [1977], Coomber [1969], Fyle & Jones [1980], Johnson [1974], and Nylander [1979, 1981b, 1983b].

[1971:285] observes:

> The generally accepted view (most recently stated by Strevens) that an original tonal system has been replaced in Krio by a sentence-stress and intonation system is now clearly seen to be untenable.

In the light of the number of minimal (tonal) pairs in Krio, it seems strange that almost a decade had to elapse before a consensus on the tonal nature of Krio was reached. Among the tonal pairs are the following (see also Fyle & Jones [1980]):

bàbɔ́	'small boy, junior'	bɔ́bà	'barber'
jìnjɛ́	'red-haired person'	jínjà	'ginger'
kòkɔ́	'coco yam'	kɔ́kɔ́	'bump on the head'
wɔ̀wɔ́	'ugly'	wɔ́wɔ̀	'pandemonium'
sòsɔ́	'Susu (language or people)'	sɔ́sɔ́	'nothing but' (cf. sɔ́sɔ́ sànsɛ́n 'nothing but sand')

2. The Middle Tone

The manner of representing tone, i.e. as an autosegment, a feature on vowels, etc., is not at issue here (cf. Hyman [1975:214-216]). Suffice it to say that each vowel in Krio bears a tone. Most works on Krio, e.g. Coomber [1969], Jones [1971], and Williams [1976], identify Krio as a language with two tones: high and low. However, Krio is identified as having three tones (high, low and mid) by Ladefoged [1968:66].

Is there a middle tone in Krio, and if so, what is its exact status? Part of the answer lies in the very data presented by Ladefoged. A close scrutiny of Ladefoged's data shows that all the forms with mid tones have two features in common: (1) they are monosyllabic, and (2) they are lexical morphemes.

Careful study of monosyllabic forms in Krio reveals the existence of three distinct tones: high (1), mid (2), and low (3).

(1) a. tɛ́ 'until'
    b. dɔ́n perfective aspect marker
    c. dɛ́n plural definite article ("the")

(2) a. bū̄k 'book'
    b. gō 'go'

c. ōs 'house'

(3) a. dè progressive aspect marker
b. kìn habitual aspect marker
c. gò prospective mood marker

However, in forms with two (4) or three (5) syllables, only two tones (high and low) are attested (see Fyle and Jones [1980] for further examples):

(4) a. ìágbá '(be) big'
b. ébì '(be) heavy'
c. ìèkè 'like, as'
d. pàpá 'father'

(5) a. wàálà 'misfortune'
b. àgbádá 'gown'
c. šékpéndé 'hawk'
d. àwòjó '(a) feast'

The middle tone is therefore restricted to monosyllabic lexical morphemes. Furthermore, a close study shows that the middle tone is found only in monosyllabic lexical morphemes in either of two positions, namely (a) in citation form (which explains the presence of the mid tones in the forms cited by Ladefoged), and (b) in sentence final position. In fact, (a) is a subcategory of (b), i.e. words in citation form are one word sentences.

I shall now consider the case of (b), since (a) is amply illustrated in Ladefoged's book. An underlying representation (UR) like that of (6a) has (6b) for phonetic representation (PR).

(6) a. /ì bìn dé/[6] (UR) 'he was present'
he-PAST-be

[6]Contrary to what might be thought, dé is a verb, not an adverb or any other form. The proof of this is that dé can combine with auxiliary (verbal) particles, such as the past tense marker (cf. (6)), the prospective mood marker (cf. (i)) and the obligative mood marker (cf. (ii)).

(i) ì gò dé 'he will be present
he-PROS-be

b. [ì bìn dē] (PR)

However, if dé is followed by any element, i.e. if dé is no longer in sentence final position, its tone is no longer subject to variation. Consider the examples in (7):

(7) a. /ì bìn dé yá/ (UR) 'he was here'
he-PAST-be-here

b. [ì bìn dé yā] (PR)

As can be seen in (7b), although dé is no longer subject to variation, the form yá is now subject to such variation, since it is a lexical morpheme in sentence final position. The same point is illustrated in (8) and (9):

(8) a. /ùnà fáyn/ (UR) 'you(pl) are beautiful'
you-be beautiful

b. [ùnà fāyn] (PR)

(9) a. /ùnà fáyn bád/ (UR) 'you are very beautiful'
you-be beautiful-very

b. [ùnà fáyn bād] (PR)

However, in the case of elements of two (10) or three (11) or four (12) syllables, being in sentence final position is of no consequence:

(10) a. /ì bìn wɔ̀wɔ́/ (UR) 'he was ugly'
he-PAST-be ugly

b. [ì bìn wɔ̀wɔ́] (PR)

(11) a. /ì dɔ́n bàràntá/ (UR) 'he has revolted'
he-PERF-revolt

b. [ì dɔ́n bàràntá] (PR)

(12) a. /à bìn sí ìn tòlɔ́ŋtòlɔ́ŋ/ (UR) 'I saw his turkey'
I-PAST-see-his-turkey

b. [à bìn sí ìn tòlɔ́ŋtòlɔ́ŋ] (PR)

How can we account for the behaviour of monosyllabic lexical items? One possible way is to assume that Krio grammar has the following phonological

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(ii) ì fɔ̀ dé 'he should (= ought to) be present'
he-OBL-be

rule:

(13) $[-L] \rightarrow [-H] \ / \ \#\# \ C_0^3 \ ___ \ C_0^2 \ // \ ,$

where (a) L = low tone, H = high tone

(b) ## stands for a word boundary

(c) // stands for a sentence boundary

The notation C_0^3 refers to the possible monosyllabic structures.[7] What (13) states is that a high tone ([+H-L]) is lowered to a middle tone ([-H-L]) if it is a monosyllable in sentence final position. This rule also states that the syllable must coincide with a word.[8] Fyle & Jones [1980:xxii] claim that rule (13) does not apply to personal names, e.g. Jɔ́n 'John', and abbreviations, e.g. bɔ́s 'bus'. This, as far as I can see, is incorrect.

Rule (13) applies to lexical morphemes in a unified way. The problem to consider now is how to block (13) from applying to grammatical morphemes. To answer this question, the grammatical morphemes that can appear in sentence final position must be listed. They fall into two categories:

(a) the plural marker dɛ̀n ;

(b) the pronouns mí 'me' (A/O), yú 'you' (A/O), àm 'him, her, it' (A), ín 'him, her, it' (O), wí 'us' (A/O), and dɛ̀n 'them' (A/O).[9]

Rule (13) cannot apply to the plural marker dɛ̀n , nor to the pronouns àm and dɛ̀n , since they bear low tones. In the following examples, each sentence is at once the phonetic and the phonemic realisation of the utterance:

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[7]The maximal structure (CCCVCCC) is not attested in any word. Furthermore, the number of words with an initial or final three consonant cluster is very low. Historically, English initial /s/ was dropped in the integration of English loanwords into Krio (cf. krɛ́p 'scrape', trít 'street', etc. — see Jones [1971:70]). More recent loanwords tend to keep the initial /s/ (cf. strɔ́p 'strap'). Final CCC is attested in words like línks 'cuff links' and wɔ́nks , an ideophone meaning 'hit hard and heavily, as with a stick' [Fyle & Jones 1980].

[8]Most of the words in question are lexical morphemes. On the problem of pronouns, see below.

[9]Note that Krio (unlike English) makes a formal distinction between the accusative case form and the oblique case form in the third person singular. On the other hand, there is no gender distinction in Krio.

(14) ì bìn sí mì pìkín-dèn 'he saw my children'
he-PAST-see-my-child-PL

(15) à bìn sí àm 'I saw her'
I-PAST-see-her

However, it can (and does) apply to mí , yú , ín , and wí . This is problematic, but there seems to be no way of formulating (13) without reference to grammatical category.

3. On the Relationship between the Middle Tone and ECP Violations in Krio

3.1. The Empty Category Principle. One of the principles of grammar proposed by Chomsky [1981] is the Empty Category Principle:

(16) Empty Category Principle (ECP)
[α e] must be properly governed.[10]

[α e] refers to non-pronominal empty categories, e.g. ($_{NP}$e), ($_{PP}$e), etc., but not to PRO. Proper government, as defined by Chomsky, is of two types (see footnote 10). Firstly, there is proper government by a lexical category. In (17a), for example, the empty category (e_i) is properly governed by the verb 'see', which is a lexical item. Secondly, there is proper government by coindexation. In (17b), for example, the empty category in subject position (e_i) is properly governed by the coindexed trace in COMP, i.e. by the trace in S', with which it is coindexed.

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[10]Proper government is defined as follows by Chomsky [1981:250]:

Consider the structure of (i):

(i) (β ..... γ ..... α ..... γ .....), where
(a) $\alpha = X^0$ or is coindexed with γ
(b) where ∅ is a maximal projection, if ∅ dominates γ then ∅ dominates α
(c) α c-commands γ .

In this case, α governs γ .

α *properly governs* β if and only if α governs β (and α ≠ AGR).

(AGR(EEMENT) is part of INFL(EXION).)

C-command is defined as follows by Reinhart [1976:32]:

(i) A c-commands B if neither A nor B dominates the other, and the first branching node which dominates A dominates B.

(17) a. Who$_i$ did you see e$_i$?

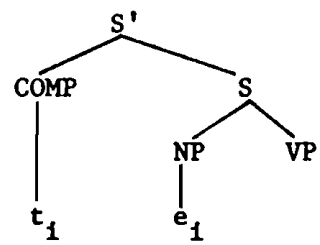
b. Who$_i$ do you think [$_{S'}$ t$_i$ [$_S$ e$_i$ came?]]

Consider, now, the contrast between (17b) and (18):

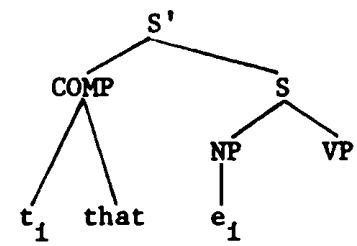
(18) *Who$_i$ do you think [$_{S'}$ t$_i$ that [$_S$ e$_i$ came?]]

The contrast between (17b) and (18) is explained as follows. In (17b), the trace in S' governs the trace in subject position. In (18), on the other hand, the presence of *that* in S' creates a branching COMP, which prevents t$_i$ from properly governing e$_i$. In short, (17b) and (18) have the structures in (19a) and (19b), respectively (omitting irrelevant details, ECP subsumes the *that*—trace filter of Chomsky and Lasnik [1977]).

(19) a.



b.



Consider now (20), which is the Krio equivalent of (18):

(20) údá$_i$ ùnà mɛ́mbà [$_{S'}$ t$_i$ sɛ́ [$_S$ e$_i$ dɛ̀ kám?]]
who-you-think- that- PROG-come
'who$_i$ do you think (that) e$_i$ is coming?'

How can the grammaticality of (20) be accounted for? As a first step, consider the following sentences:

(21) a. wɛ́tín ì bìn sɛ́? 'what did he say?'
what-he-PAST-say

b. à bìn mɛ́mbà [$_{S'}$ sɛ́ [$_S$ ì gò gɔ́]] 'I thought that he would go'
I-PAST-think-that-he-PROS-go

The examples in (19) show that sɛ́ is ambiguous between a verb ('say') and a *that*-complementizer. There is therefore one fundamental difference between sɛ́ and English 'that', namely that sɛ́ (unlike 'that') is a *lexical* [-N+V] element.

3.2. Serial verbs and ECP violations.[11] The serial verb construction (SVC) is a construction found in many African and creole languages. SVC has the following structure:

(22) NP_1 Aux V_1 (NP_2) V_2 .....

Consider the following example of a dative SVC

(23) ì bìn lɛ́y gí mí 'he lied to me' (lit. 'he lied gave me')
he-PAST-lie-give-me

In (23), NP_1 (ì) is the syntactic and semantic subject of both verbs, as can be seen in the following examples:

(24) a. ì bìn lɛ́y 'he lied'
he-PAST-lie

b. ì bìn gí mí X 'he gave me X'
he-PAST-give-me-X

However, NP_1 can not be the semantic subject of V_2. Consider the following sentence:

(25) ùnà dɔ́n tɔ́k dú 'you have said enough'
you-PERF-talk-be enough

If this sentence is broken down into its constituent parts, only one of the sentences so obtained is grammatical:

(26) a. ùnà dɔ́n tɔ́k 'you have talked'
you-PERF-talk

b. *ùnà dɔ́n dú 'you have been enough'
you-PERF-be enough

Sentence (26b) shows that ùnà is not the semantic subject of dú . In short, selectional restrictions can be violated in SVC's.[12]

Consider, now, the following analysis. Since NP_1 does not have to be the semantic subject of V_2 and sɛ́ has verbal properties, (20) can be assimilated

[11]This section is a summary of Nylander [1982b]. For detailed bibliographical references for SVC's in African and creole languages, see Nylander [1982a, 1983b]. For studies on SVC's in Krio, see Nylander [1981a, 1982a, 1982b, 1983a, 1983b] and Williams [1971, 1976].

[12]Bamgbose [1974] notes a similar phenomenon in Yoruba.

to an SVC and be reanalysed as (20'):

(20') ŭdá$_i$ ùnà [$_V$ mémbà] [$_V$ sé] e$_i$ dè kám?
NP$_1$ V$_1$ V$_2$

In (20'), e$_i$ is properly governed by the adjacent lexical item sé . Under this analysis, there is no longer any ECP violation.

3.3. Independent evidence for the verbal complementizer status of sé . In this section, independent evidence for the verbal complementizer status of sé will be given. One feature of SVC's is verb stranding,[13] which isolates the final verb at the end of the sentence. Applying verb stranding to (27) (=(23)) yields (28):

(27) ì bìn láy gí mí 'he lied to me'
he-PAST-lie-give-me

(28) ŭdá$_i$ ì bìn láy gí e$_i$? 'who did he lie to?' (lit. 'who did he lie give?')
who-he-PAST-lie-give

Verb stranding can also apply to (29a) to yield (29b):[14]

(29) a. ùnà mémbà [$_{S'}$ sé [$_S$ John dè kám]] 'you think that John is coming?'
you-think- that- John-PROG-come

b. wétín$_i$ ùnà mémbà [$_{S'}$ sé [$_S$ e$_i$?]] 'what do you think? (lit. 'what$_i$ do you think that e$_i$?')
what-you-think- that

Now the *phonetic* realisation of (29b) is (30):

(30) [wétín ùnà mémbà sē]

Thus /sé/ takes on a middle tone in sentence final position. But we have seen that apart from four pronouns, only lexical items are subject to variation in sentence final position. A complementizer is, by definition, a grammatical morpheme. So the fact that sé manifests tonal variation means that

[13]The term *verb stranding* is used to reflect the similarity between preposition stranding and verb isolation.

[14]Note that in (29b) it is the whole subordinate clause that is replaced by the WH-form in sentence initial position.

it is also a lexical item. In short, sé is a verbal complementizer.

Note, furthermore, that there is a trace after sé in (29b)/(30). Recall the debate over the contexts in which 'want to' becomes 'wanna'. It was pointed out during the debate that 'want to' can only contract, i.e. become 'wanna', if there is no trace between 'want' and 'to'. Since there is a trace after sé in (29b)/(30), i.e. sé is not, in an absolute sense, in final position, it must be concluded that the trace does not affect the phonological operation, i.e. high tone → middle tone. The exact reasons for this remains to be determined.

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