

**Universal and Substrate Influence on the  
Phonotactics and Syllable Structure of  
Krio**

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## **Universal and Substrate Influence on the Phonotactics and Syllable Structure of Krio**

### **Abstract**

This paper evaluates the extent to which the phonotactics and syllable structure of Krio demonstrate universally unmarked properties (based on presence or frequency of use across languages) evident in first language (L1) acquisition or are influenced by properties of West African substrate languages. Some researchers maintain that basic, universal, and unmarked principles, in the form of phonological processes evident in language acquisition (e.g. substitution, deletion, consonant cluster simplification) constrain the type, number, and sequence of segments that are allowed in onsets and codas of syllables in creoles. Others affirm moderate to strong influence of the phonological properties of substrate languages on creoles. Yet a third group suggests an interaction of universal and substrate influence in the development of the phonological properties of creoles. I acknowledge presence of some phonologically unmarked properties, which are also observed in L1 acquisition (including vowel and consonant inventories, phonological processes such as ‘stopping’ and ‘fronting’, and the structure of syllables), though such properties are not necessarily maximally unmarked and are not necessarily applied in Krio in scope and regularity as they are in L1 acquisition. I further present data to support the influence of the relatively marked phonological properties of substrate languages (including vowel nasalization and palatalization) Krio syllables, I conclude, exhibits neither maximally marked or maximally unmarked phonological properties. Krio properties are somewhere in between.

## 1. Introduction

A well-discussed but still contentious issue in creolization is the extent to which the linguistic properties of creoles provide evidence in support one or more of the different, and often polar, views of creole genesis. The Universalist account of creolization (Bickerton, 1975, 1977, 1988, 1999) argues for the development of a prototypical creole grammar primarily through the adoption of universally unmarked properties of grammar by creole children. This position holds that creoles generally display properties that are typical of a child's linguistic output during early stages of first language acquisition. Though input is received from a variety of linguistic sources, creole children's innate capacity for language supposedly predisposes them to adopt simple universally unmarked linguistic properties. Bickerton proposes that creole children, unlike child speakers of other languages, do not have a consistent adult model against which to check their hypotheses and are therefore guided by Universal Grammar (or a Language Acquisition Device) to adopt these universally unmarked properties. The universalist proposal primarily draws support from the morpho-syntactic properties of creoles though their arguments could be extended into phonology in attempting to account for the segmental and phonotactic properties of lexical items in creoles, some of which may have undergone phonological processes that have resulted in the modification of both the quality and quantity of segments in the syllables of these lexical items.

The Substrate account of creolization (Alleyne 1980; Holm 1988), also drawing support from both morpho-syntactic and phonological properties, maintains that West African substrate languages have predominantly influenced linguistic properties of creoles. They maintain that adult native speakers of substrate languages, because of minimal competence in superstrate European languages, were compelled to modify lexical items originating from lexifier languages by substituting segments and structures that are not present or allowed in substrate languages with those that are allowed. What superficially may seem like

universally unmarked phonological properties of creoles could in reality be the result of the transfer of substrate properties into the creoles.

A more moderate and compromise version of this position maintains that borrowings of both superstrate and substrate origins are present in creoles, but these borrowings are generally constrained by universally unmarked properties of language (Field 2004; Holm 1988; Mufwene 1986, 2001; Mühlhäuser, 1980, 1986; Siegel 1999; Uffman 2003).

Examples and arguments presented in this paper argue for the phonotactics and syllable structure reflecting both general unmarked phonological properties and more specific phonological properties likely borrowed from West African substrate languages. Such properties are neither maximally marked nor maximally unmarked.

## **2. The History of Krio**

Circumstances leading to the emergence of Krio are highly debatable. One view argues that Krio emerged from Creoles of the Americas and in effect shares some linguistic similarities with other Atlantic Creoles. Huber (1999, 2000) proposes that that Krio emerged from varieties of creoles used by settlers – mostly freed slaves primarily from four areas – who were resettled in the Sierra Leone peninsula, including Freetown, between 1787 and 1850 (Huber 1999: 59-65; Huber 200: 276-277)).

The Original Settlers (The Black Poor) from England, numbering about 328 settlers, arrived from England in 1787. However, there are no records of contributions of the Black Poor to the development of present-day Krio.

The Nova Scotians were originally slaves in America that were promised freedom and much better living conditions in return for support for the British during the American war. After the war, about

3,000 slaves were relocated, in 1783, in Nova Scotia, Canada (a British colony), where they continued to endure economic hardship and epidemics (Huber 1999, 2000). In 1787, in response to their protests, the British relocated them in a new colony – the Sierra Leone Peninsula – in West Africa (where most slaves in the New World were originally from prior to enslavement). In 1792, close to 2000 freed slaves were shipped to Freetown from Nova Scotia (Huber 1999: 61-62).

About 556 Jamaican Maroons, deported to Nova Scotia in 1796 after an unsuccessful revolt, were also transferred to the Sierra Leone peninsula in 1800. Creoles from the West Indies, particularly the variety brought by the Jamaican Maroon settlers, are proposed by Huber 1999 to have had significant input into what has now evolved into present-day Krio. Huber outlines a number of similarities between present-day Jamaican Creole and Krio in a number of linguistic categories including copula space, verb phrase, noun phrase, and lexical and functional items (Huber 1999: 108-114).

According to Huber 1999, 2000), after the British declared slavery illegal for their subjects, their fleet patrolled the West African coast, intercepted slave ships and recaptured slaves, and released and resettled them in the Sierra Leone peninsula and they are generally referred to as Liberated Africans (or Recaptives). These were by far the largest group and were resettled in the Sierra Leone peninsula over a period that stretched from 1808 (when Sierra Leone was declared a crown colony) to 1863. Huber (1999: 63) estimates the number of Liberated Africans resettled in the Sierra Leone peninsula during this period at about 60,000, though only about 37,000 were alive in 1840. In 1860, the Liberated Africans and their descendants totaled 38,375.

The influence of the Liberated Africans on the linguistic evolution of Krio is a debated issue. They comprised mainly of speakers of West African Kwa languages, including Yoruba (the most prominent), Igbo, Akan, and Gbe. Huber acknowledges their possible influence when he

states that

[finally another major group to be considered in the development of Krio is that of the Liberated Africans, who by about 1812 outnumbered the Nova Scotians and Maroons. Judging from their enormous numerical increase over the following decades, the Recaptives could very well have dominated the linguistic scene in 19<sup>th</sup> century Sierra Leone by swamping any other variety that may have developed in the years prior to their arrival (Huber 2000: 278).

According to Huber (1999, 2000), they originally spoke African languages only, but with improved economic status and more interaction with the Maroons and Nova Scotians, a new variety of creole emerged that was described in transcripts written by British colonists as a “barbarous”, “defective”, “gibberish” and “jargon” form of English (Huber 2000: 282, 285). This variety incorporated properties of the creoles used by the Maroons and Nova Scotians, and it is reasonable to assume that the cross-linguistic influence was bi-directional: that is, the creoles used in Freetown were in turn influenced by the variety developed by the Liberated Africans.

The language and traditions of settlers of Yoruba origins have had a strong influence on the language, social life and customs of Krio speakers in Freetown. The influence of the languages (including Yoruba) of the Liberated Africans on the grammatical development of Krio should therefore not be underestimated and should be considered at least a contributory factor in the development of the linguistic properties of Krio (See Bradshaw 1966 for an exhaustive list of Krio lexical items borrowed or derived from Yoruba).

A contrary view of the origin of Krio is held by Hancock (1986, 1987), who maintains that the original “core” creole emerged along the Upper

Guinea Coast of West Africa in the 1600s, long before the trans-Atlantic slave trade. There is evidence of British settlement in that area and there are written reports of interaction, including intermarriages, between Europeans and Africans during this period. Products of the intermarriages – referred to as Mulattos – became the first creole speakers. Creoles in the Americas partly originated from this original creole (Guinea Coast Creole English (GCCE)), which was transmitted to the Americas by slaves transported by English and Dutch traders. Hancock suggests that the grammar of GCCE continued to be influenced by the properties of West African languages as a result of its extensive use by second language speakers in the region. According to Hancock, present-day Krio is an offshoot of GCCE. Eyewitness recorded transcripts of GCCE in the 17<sup>th</sup> and 18<sup>th</sup> centuries illustrate similar grammatical properties and lexical items between modern Krio and GCCE. The presence of these properties and items in present day Krio, Hancock maintains, is evidence that the emergence of Krio predates the resettlement of freed slaves in Sierra Leone.

### **3. Krio Data Sources**

As a native Krio speaker, who was born and raised until adulthood in Freetown, I provided the Krio examples used in this paper based on my intuitions and those of other native Krio speakers. Other examples were obtained from Bradshaw (1966), Fyle & Jones (1980), and Jones (1971). These examples, in my opinion, are reflective of properties of the Basilect and Mesolect varieties used by native Krio speakers residing in Freetown.

A limitation of this paper, as is the case for research in creole studies, is that it is based on current phonological properties of Krio, which may not be an accurate representation of the properties that the language exhibited during its formative years. Some recently borrowed lexical

items are integrated into Krio phonotactics while others remain phonologically unassimilated.

Most of the examples presented in this paper are not proposed as absolutes. Creoles generally exhibit different lects (varieties) – Basilect, Mesolect, and Acrolect. Choice of lect is generally conditioned by the social, economic, and education status of the speaker. These lects vary in the extent to which phonological properties of borrowings from superstrate languages diverge from the properties of the superstrate languages, from significantly for the Basilect variety to minimally for the Acrolect variety. As a result, multiple pronunciation forms may co-exist in different lects for the same lexical item in Krio. Most of the examples provided are present in the Basilect and sometimes Mesolect varieties but not necessarily in the Acrolect variety. A point by Jones (1971) worthy of note is that the lack of consistency of the application of phonological processes is due to continued contact between Krio and English – its superstrate language. The continued prestige status of English continues to influence the Acrolect and Mesolect varieties of Krio.

#### **4. Universal and Substrate Influence on the Segmental Features of Syllables in Krio**

The Universalist account of creolization emphasizes the contribution of children to the development of prototypical linguistic properties of creoles. Proponents of this view, particularly Bickerton (1975, 1977, 1988, 1999), contend that creoles generally display universally unmarked linguistic properties that are typical of a child's linguistic output during early stages of first language acquisition. According to Bickerton's Language Bioprogram Hypothesis, pidgins were converted into creoles almost exclusively by children whose primary language—the pidgin—could not be used adequately to satisfy their linguistic needs. As a result, the linguistic properties of creoles become more



complex and elaborate primarily through the invocation of universally unmarked principles of language by emerging native creole speakers. Restructuring of the creole is triggered by the innate capacity for language by children, with continued input from the lexifier language and no significant input from the substrate languages of the parents.

Uffman (2003: 3) argues for the process of creolization as “retention of the unmarked”. That is, the probability of a substrate feature adopted by a creole is dependent on the relative markedness of the feature: less marked properties are more likely to be adopted by a creole grammar than more marked ones. He proposes a formal account of substrate levelling that: “those substrate subgrammars are systematically retained that are relatively unmarked compared to competing subgrammars” (p. 3).

The theory of Markedness has been used over the years to predict directionality of difficulty in the acquisition of linguistic properties in both first and second language acquisition, with unmarked properties predicted to be preferred and acquired earlier by language learners (Broselow et al. 1998; Comrie 1989; Croft 1990; Eckman 1977, 1981a, 1981b; Rutherford 1984).

The implication, on the basis of this approach, is that the phonological properties of creoles should include a predominance of unmarked phonological segments including vowel and consonant systems that include segments that are universal or very common cross-linguistically. There should be a general absence of the less common segments.

#### 4.1. Effects of Universals on the Vowel System of Krio

An overwhelming number of creoles, including Krio, exhibit 7 pure cardinal vowel system - /i, e, ε, a, ɔ, o, u/ (Alleyne 1980; Hall 1966; Holm 1988; Romaine 1988). Some creoles exhibit a 5-vowel system with /ε/ and /ɔ/ absent or are realized as allophones of /e/ and /o/

respectively (Holm 1988). These vowels are proposed to be common across languages of the world. Less common vowels, including the vowels /ɪ/, /ʊ/ and /ʌ/ are proposed to be generally absent in creoles. Hall (1966) further argues that the comparatively less common front and back rounded vowels - /y/ and /œ/ - lose their frontness or roundness, in French-based creoles (including Haiti) in which /y/ is replaced by the more common /i/ or /u/ and /œ/ is replaced by the more common /e/ or /o/ in lexical items of French origin.

Universalists generally interpret this as an indication of the adoption of more universal vowels (present in the repertoires of a majority of the world's languages). They argue that the lexifier languages of creoles generally contain a lot more vowels in their repertoire but creoles have adopted the ones that are common across languages, and that there is a general absence of vowels that are less typologically common.

Another evidence of the influence of universals on the development of vowels in creoles is proposed to be the simplification process of vowel substitution – a monophthongization of English diphthongs (Alleyne 1980; Holm 1988). Holm identifies São Tomé Portuguese Creole and Surinamese creoles as examples of creoles in which this process is evident. This process is also applied to a number of lexical items of English origin in Krio:

[aj] → [ɛ] or [e]

- |     |    |               |    |                |
|-----|----|---------------|----|----------------|
| (1) | a. | /net/ (night) | b. | /fet/ (fight)  |
|     | c. | /res/ (rice)  | d. | /blen/ (blind) |
|     | e. | /bet/ (bite)  | f. | /lek/ (like)   |
|     | g. | /wɛf/ (wife)  | h. | /tɛm/ (time)   |



Another “stopping” substitution process observed in L1 acquisition and evident, though not as common as the process in (4), in Krio is the substitution of /v/ with /b/. This process is evident in some lexical items of English origin in word-medial and word-final (5) but not word-initial (6) positions. For example:

- |     |    |                     |    |                |
|-----|----|---------------------|----|----------------|
| (5) | a. | /drɛb/ (drive away) | b. | /ɛbi/ (heavy)  |
|     | c. | /dɛbul/ (devil)     | d. | /ʃub/ (shove)  |
|     | e. | /oba/ (over)        | f. | /kɔba/ (cover) |
- 
- |     |    |                     |    |                 |
|-----|----|---------------------|----|-----------------|
| (6) | a. | /vɛks/ (angry, vex) | b. | /vɔmit/ (vomit) |
|-----|----|---------------------|----|-----------------|

Another common consonant substitution process in L1 acquisition is “fronting”, whereby back consonants (with places of articulation further back in the oral cavity) are substituted with front consonants (with places of articulation closer to the front of the oral cavity). This process involves a wide range of consonants, including /ʃ, ʒ, tʃ, dʒ/, in L1 acquisition. These consonants are present in Krio though the fricative /ʃ/ is sometimes substituted with /s/, as is sometimes the case in L1 acquisition (Clarke 2003; Hulit & Howard 2002). This process generally occurs in only word-medial and word-final positions (7) but not generally in word-initial position (8), with the possible exception of [sus] (shoe(s)). For example:

[ʃ] → [s]:

- |     |    |                   |    |                           |
|-----|----|-------------------|----|---------------------------|
| (7) | a. | /asis/ (ash(es))  | b. | /mas/ (tread on/mash)     |
|     | c. | /was/ (wash)      | d. | /kalbas/ (calabash/gourd) |
|     | e. | /ɔmɔs/ (how much) | f. | /tumɔs/ (too much)        |

As mentioned above, this process does not apply word-initially. Further, there are lexical items in which the [ʃ] is maintained in lexical items of English origin. For example:

- |     |    |                      |    |                  |
|-----|----|----------------------|----|------------------|
| (8) | a. | /ʃap/ (store; sharp) | b. | /ʃub/ (shove)    |
|     | c. | /ʃɔt/ (shirt; short) | d. | /ʃimi/ (chemise) |
|     | e. | /puʃ/ (push)         | f. | /fiʃ/ (fish)     |

Thus, only a few phonological processes observed in L1 acquisition are also evident in lexical items of English origin in Krio. There are other processes that are not observed. Additionally, the processes that are observed vary in degrees of regularity, predictability, and frequency. With the exception of the “stopping” process of [θ/ð] → [t/d], the others generally have exceptions and are not usually applicable in word-initial position. Additionally, the affricates /tʃ, dʒ/, generally absent in the repertoire of children in early L1 development (Clarke 2003; Hulit & Howard 2002) and considered marked cross-linguistically (Haspelmath et al. 2005), do not undergo any substitution process in Krio. Affricates in lexical items of both English and non-English origins remain unchanged. For example:

- |     |    |                  |    |               |
|-----|----|------------------|----|---------------|
| (9) | a. | dʒam (bump into) | b. | bintʃ (beans) |
|     | c. | tʃintʃ (bedbug)  | d. | dʒomp (jump)  |
|     | e. | ketʃ (catch)     | f. | tʃak (drunk)  |

Thus, Krio (and possibly other creoles) may exhibit some phonological properties of L1 acquisition generally considered unmarked; however, their occurrences are not as frequent or regular as is the case in L1 acquisition. Additionally, some phonological features that are considered marked and further generally absent in L1 acquisition are present in Krio. That is, Krio (and possibly other creoles) may exhibit

some universally unmarked properties but its phonological repertoire cannot be considered maximally unmarked.

#### 4.3. Influence of West African Substrate Languages on the Segmental Properties of Krio

One of the criticisms against the universalist account of creolization identified by Baker (2000:42) is that “more rigorous comparisons with relevant non-European languages have produced more compelling evidence of their influence on particular creoles”, a position that is adopted by proponents of the substrate account of creolization. Much of the evidence linking the development and evolution of the linguistic properties of creoles those of West African substrate languages (most of them belonging to the Kwa language sub-group) has been in morph-syntax. Proponents (including Corne 1987; DeGraff 2001; Lefebvre 1993, 1996; Lumsden 1999) maintain that the apparent universal properties of creoles are superficial and that the underlying creole grammar (Atlantic varieties) exhibits structural properties resembling those of West African substrate languages. They argue that a major aspect of creolization is that it is a process of second language acquisition. Adult native speakers of substrate languages, because of minimal grammatical competence in superstrate European languages, were compelled to borrow grammatical structures from their primary (substrate) languages into which they superimposed lexical items derived from superstrate languages, in their attempts to communicate with speakers of superstrate languages.

Other substrate proponents (Alleyne 1980; Holm 1988; Spencer 1971) have attempted to extend this proposal to account for the development of some phonological properties of Atlantic creoles.

A comparison of the consonant phonemic inventory of Krio (as well as other creoles) and substrate languages reveals obvious direct influence of substrate languages, most notably the presence of the co-articulated

stops /kp/ and /gb/ - features of Kwa and Mande languages – as in the following Krio examples:

- |      |    |               |                          |
|------|----|---------------|--------------------------|
| (10) | a. | /kpata-kpata/ | “completely-finished”    |
|      | b. | /agbo/        | “a medicinal herb”       |
|      | c. | /gbagbati/    | “a show of force”        |
|      | d. | /akpɔlɔ/      | “frog”                   |
|      | e. | /agbada/      | “embroidered gown”       |
|      | f. | /agbado/      | “a species of snake”     |
|      | g. | /igbakɔ/      | “large wooden spoon”     |
|      | h. | /kpekpekpe/   | “trifles, odds and ends” |
|      | i. | /lakpalakpa/  | “ringworm”               |
|      | j. | /ʃakpa/       | “type of sauce”          |

Another possible evidence of substrate influence on the phonological properties of Krio is regressive vowel nasalization – a process whereby a vowel followed by a nasal consonant /n, m/ is pronounced as a nasal vowel and the nasal consonant is deleted. Spencer (1971) identifies this process as a common occurrence in unstressed syllables (such as the progressive or gerundive English suffix *-ing*) in West African English. It is also a common process in other creoles, including Saramaccan, Sranan, Ndjuka, and Jamaican (Alleyne 1980) and has been attributed to the influence of substrate languages. It is not applied in superstrate languages (including English) but is evident in lexical items of both African and English origins and in some substrate languages, including Yoruba, Isoko, Ewe, Fante, Ibo, Kongo, and Ijo (Dunstan 1969; Holm 1988). Alleyne (1980) further mentions that for lexical items of English origin ending in /n/ or /ŋ/, the preceding vowel may be nasalized and the nasal consonant dropped. Fyle & Jones (1980: xix) provides examples of the occurrence of this process in English and African borrowings in Krio

- |      |    |                       |                             |
|------|----|-----------------------|-----------------------------|
| (11) | a. | /bõʃeka/ (boneshaker) | “a rickety bus”             |
|      | b. | /lõsɔm/               | “lonesome”                  |
|      | c. | /dʒõs/ (Jones)        | “a family name”             |
|      | d. | /kõkõ/                | “small hut”                 |
|      | e. | /rõʃo/                | “a kind of devil or spirit” |
|      | f. | /abiɔdũ/ (Abiodun)    | “personal name”             |
|      | g. | /dãs/                 | “dance”                     |

Both Spencer (1971) and Fyle & Jones (1980) claim that oral and nasal vowels are in phonemic contrast in Krio (but not in English, the Krio’s lexifier language) as well as in West African languages, from which this feature is proposed to be borrowed. For example, the de-nasalization of the vowels in (11d) results in a completely different lexical item - /koko/ (a bump or swelling on the forehead).

Additionally, the process of palatalization, observed in some creoles, is proposed to be evidence of the phonological influence of West African substrate languages, in which such a process is very productive (Alleyne 1980; Holm 1988). This process is applied in Twi, Ewe, and Yoruba, in which [s, z, t] are palatalized to their allophonic variants [ʃ, ʒ, tʃ] before front high vowels and is evident in Twi, Ewe, and Yoruba. Holm (1988) claims that a similar process occurs in creoles such São Tomé Portuguese Creole, Papiamentu, and Negerhollands Dutch Creole, as well as in some Caribbean varieties of French Creole.

Palatalization is not a very productive process in Krio though it is evident in a few lexical items of English origin in which [t] or [s], or a combination, is palatalized and realized as [tʃ] after the nasal [n]. For example:

- |      |    |                  |    |                  |
|------|----|------------------|----|------------------|
| (12) | a. | /fɛn tʃ/ (fence) | b. | /rin tʃ/ (rinse) |
|      | c. | /bin tʃ/ (beans) | d. | /an tʃ/ (ants)   |



Another phonological process evident in Krio and other creoles that is attributed to the influence of West African substrate languages is vowel harmony – a process whereby vowels in syllables in a sequence are made identical. In some cases, the whole syllable is duplicated. Alleyne (1980) identifies this as a common process among Niger-Congo languages including Twi and Yoruba (West African substrate languages). This is also evident in a number of creoles including Jamaican, Ndjuka, Sranan, and Saramaccan (Alleyne 1980). It is also very common productive in Krio in a number of lexical items of both English and West African origins. For example:

- |      |    |                         |    |                   |
|------|----|-------------------------|----|-------------------|
| (13) | a. | /beɛ/ (belly)           | b. | /broko/ (broken)  |
|      | c. | /arata/ (rat, mouse)    | d. | /tranga/ (strong) |
|      | e. | /pɔtɔpɔtɔ/ (mud)        | f. | /sansan/ (sand)   |
|      | g. | /krɔkrɔ/ (skin disease) | h. | /petɛtɛ/ (potato) |

Advocates of the phonological influence of West African substrate languages Atlantic creoles (including Krio) have further argued the apparent universal nature of the inventory of segments and phonological processes observed in Atlantic creoles in reality reflect the phonological properties of West African substrate languages, primarily as a result of direct transfer of these properties into the pidgins (used initially as a second language) that eventually evolved into creoles. In defence of this position, Alleyne (1980: 140) argues that:

‘Substratum’ influences always have to be substantiated a fortiori ... rather than merely asserted, and their validity weighed against other explanatory factors. But they cannot be automatically invalidated by the existence of similar forms elsewhere which are subject to other historical causal factors.

Spencer (1971) notes that the varieties of English used across English-speaking West Africa exhibit a number of similar phonological properties that are also shared by a number of West African languages. These properties are generally used to identify English speakers of West African linguistic backgrounds. This is evident in phonemic substitution of consonants and under-differentiation of vowels (evident in a reduced set of contrasting vowels). Spencer further proposes that some of these properties have made their way into Krio.

Merging of vowels in West African varieties of English is argued to be the effects of negative transfer from West African languages, which generally lack some pure vowels present in the inventories of British and American English (Fyle & Jones 1980; Jones 1971; Sey 1973; Simo Bobda 2000; Spencer 1971). According to Spencer (1971), vowel merging in Krio is the resulting effect of the general absence of these vowels in the English used by West Africans. Examples of merging in Krio include the following:

- (14) i/ɪ → /i/: beat/bit; bead/bid; sheep/ship are homophones.  
 u/ʊ → /u/: pool/pull; fool/full are homophones  
 ɔ/ʌ → /ɔ/: cop/cup; rob/rub are homophones

Substrate advocates maintain that the merging of vowel phonemes in creoles is likely the result of the influence of West African languages. The typical 7 (or 5) pure vowel inventory exhibited by creoles in general, and Krio in particular, is thus argued to be the result of the presence of a similar, if not identical, inventory in substrate languages (Alleyne 1980; Fyle & Jones 1980; Holm 1988; Jones 1971; Spencer 1971). The seven-vowel system exhibited by creoles is identified by Holm (1988) as the predominating vowel pattern in the Kwa (e.g. Yoruba, Bini, Ewe) and Mande (e.g. Bambara, Susu) languages of West Africa. Other languages belonging to these language subgroups are proposed argued to exhibit the five-vowel system with /e/ and /ɛ/ as well

as /o/ and /ɔ/ existing in an allophonic relationship, as is the case in some creoles (Holm 1988).

Substrate advocates have further argued that some of the proposed unmarked and universal phonological processes evident in Atlantic creoles (including Krio) may in reality be the result of direct transfer of these processes from the West African substrate languages into the creoles. For example, the general absence of the fricatives [θ/ð] and the use of [t/d] as substitutes in Atlantic creoles (including Krio) have been attributed to the influence of West African languages, in which these fricatives are absent. In lexical items of English origin in these languages, the stops [t/d] are generally used as corresponding substitutes (Dunstan 1969; Simo Bobda 2000) as is the case in Krio and other Atlantic creoles. Alleyne also identifies [v → b] as a phonological process that is common in a number of English loanwords in Yoruba and Twi.

Dunstan (1969) and Alleyne (1980) further identify some Nigerian languages (including Yoruba) in which /s/ is substituted for /ʃ/ or both forms are used in alternation as allophones. A closer look at the examples of “fronting” in Krio (reproduced as (15) reveals a possible alternation of [s] and [ʃ] in lexical items of English origin containing [ʃ]: it is realized as [s] after low and mid vowels [a, ɔ] but is realized as [ʃ] in initial position and after high vowels [i, u] (though it didn’t apply to the second /s/ in (15a)):

- |      |    |                   |    |                           |
|------|----|-------------------|----|---------------------------|
| (15) | a. | /asis/ (ash(es))  | b. | /mas/ (tread on/mash)     |
|      | c. | /was/ (wash)      | d. | /kalbas/ (calabash/gourd) |
|      | e. | /ɔmɔs/ (how much) | f. | /tumɔs/ (too much)        |

Attributing the absence of the above segments or the application of the phonological processes in Krio (and other Atlantic creoles) unequivocally to the influence of substrate languages could be

problematic, as these tendencies are also evident in Pacific creoles (which are not claimed to have been influenced by West African substrate languages) and some non-standard varieties of English. Additionally, they are further observed in some Indo-European languages. So there is a problem of identifying the real source(s) of these processes and we cannot conclude with certainty that the West African substrate languages were the primary sources.

Singler (1996) further argues that similarities between features of creoles and substrate languages do not necessarily constitute evidence for substrate influence. Creole structures that could be accounted for by universal principles, in spite of similarities to substratal structures, should not be used as conclusive evidence of substratal influence. To enhance the validity of such influence, Singler (1996:218) proposes three criteria that the features in question have to satisfy:

- (a) They are not shared with the lexifier language.
- (b) They are nontrivial.
- (c) They are linguistically marked.

Thus, the proposal that vowel merging and some “stopping” and “fronting” phonological processes in creoles were possibly the direct effects of transfer from substrate languages is ruled out by Singler, as these phenomena are not linguistically marked.

#### 4.4. The Compromise Account of the Development of Creoles

The compromise account of the development and evolution of the linguistic properties of creoles, unlike Singler’s (1996) proposal) focuses on the unmarked linguistic properties present in both creoles and substrate languages. It argues for an interaction of multiple factors – influence of both superstrate and substrate languages as well as universals of first and second language acquisition – in the development of the phonological systems of creoles (Alleyne 1980; Field 2004; Holm

1988; Mufwene 2001; Siegel 1999). As Holm (1988) states, there was influence from “both superstrate and substrate languages, universals of adult second language acquisition, borrowing from ‘adstrate’ languages, creole internal innovations, and the convergence of all or some of these” (p. 105). Mufwene’s Complementary Hypothesis attempts to accommodate both the Universalist and substrate positions on creolization. He proposes that these different positions are not mutually exclusive, but that they rather complement one another. As Mufwene suggests:

Our position should not be based on the typically simplistic hypotheses which pervade the literature, in particular: baby talk, foreigner talk, exclusive or dominant substrate influence, language bioprogram, imperfect second-language learning, or exclusive or dominant superstrate influence (2001: 128).

The sentiment shared by these scholars (Holm 1988; Mufwene 1986, 2001; Mühlhäuser, 1980, 1986; Siegel, 1999) nevertheless, is that the influence of substrate languages is mostly evident in properties for which substrate properties and universal tendencies converge. These are properties that are likely to be phonologically simple and unmarked.

The Compromise position accounts for some (but not all) of the phonological inventory and processes (including the 7 cardinal vowel system and some phonological processes) observed in Krio. These proposed universal properties are also phonological properties of a number of West African languages. Unfortunately, there is evidence of segments in Krio (and other creoles), the co-articulated stops in particular, as well as other phonological processes that this position cannot account for.

A number of Krio lexical items of African origin contain the co-articulated stops /kp/ and /gb/ (features of Kwa and Mande languages),

which are certainly not universal or common cross-linguistically nor could they be argued to be unmarked, as their production involves the simultaneous articulation of two segments. This position cannot account for the processes of palatalization and regressive vowel assimilation evident in Krio and other West African languages but not common across languages. Ironically, the process of palatalization involves a change from relatively unmarked and typologically more common phonemes to a relatively marked and typologically less common one.

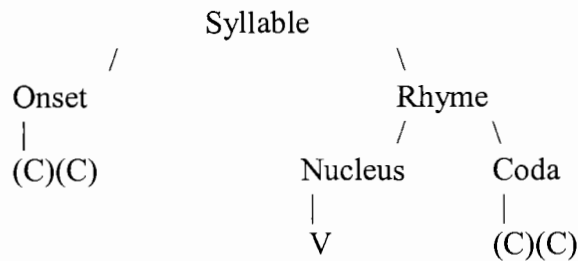
## **5. Universal and Substrate Influence on the Syllable Structure of Krio**

### **5.1. The Theory of Markedness and Syllable Structure**

The theory of Markedness is based on the premise that humans are born with the same basic perceptual abilities and tendencies, and that children in language acquisition are predisposed to produce phonological phenomena that are relatively simple, evident in the widespread, almost universal, presence of such phenomena cross-linguistically. Unmarked phenomena are inherent in the initial assumptions that children make about the properties of language. There is thus an initial preference for the most basic and simple syllable structure: CV. As a result, children apply a number of phonological processes during which they substitute phonemes that are less common cross-linguistically and are generally produced late by children with phonemes that are universal or very common across languages. They further simplify syllables to a more universal CV structure (Clarke 2003; Hult & Howard 2002). Language acquisition thus involves a process of ordering and acquiring rules in a proposed sequence ranging from the least marked to the most marked.

The traditional breakdown of a syllable is as follows:

### Traditional Syllable Structure



Onset Clusters under OT are proposed to conform to the Sonority Hierarchy:

STOP → FRICATIVE → NASAL → LIQUID → GLIDE → VOWEL  
(Nucleus)

That is, the initial member of the onset cluster should be the least sonorous. The reverse is true for a Coda: the final member is the least sonorous. A three-consonant onset in English invariably contains the phoneme /s/, which is proposed to occupy an extra syllabic position.

Thus syllables could fall within an inventory ranging from the least marked (CV) to the most marked (CCVCC) based on the extent to which they adhere to the constraints of Markedness. Structurally unmarked languages are proposed to allow only the least marked syllable structure (CV) while more marked structure will allow increasing numbers of consonants in the onsets and codas of syllables depending on the degree of the structurally marked status of the language.

This model has been used to account for not only the inventory of syllable structures across languages but also for the process of language acquisition (Archibald, 1998; Davidson et al., 2004; Gnanadesikan, 2004; Kager et al., 2004; Levelt & van de Vijver, 2004; Meade, 2004;

Shinohara, 2004). The child in L1 acquisition, guided by Universal Grammar, is proposed to initially produce syllable structures that are maximally unmarked (i.e. CV). Cluster reduction in syllables with consonant clusters is proposed to initially eliminate the coda as well as the cluster in the onset by deleting the more sonorous member(s) of the onset. In effect, complex onsets comprising of a stop-liquid or a fricative-liquid cluster are argued to be reduced to a single stop consonant while the coda is eliminated. More complex (and marked) syllable structures emerge later in the child's linguistic development.

### 5.2. The Theory of Markedness and the Process of Creolization

The processes of elimination of the coda and (stop-fricative or stop-liquid) cluster reduction in the onset, resulting in the creation of a CV structure, are proposed to be exhibited by some creoles (Aceto, 1996; Smith, 2003) and is sometimes used as evidence of the "emergence of the unmarked" creoles. Thus, syllable structure of creoles is argued to be maximally unmarked.

### 5.3. Markedness, Complex Onsets, and Codas in Krio

Lexical items of English origin containing consonant clusters in both the onset and coda generally undergo a process of simplification in Krio during which some of the segments in the cluster are deleted, but the deletion process does not always conform to the Markedness proposal of cluster reduction. Thus, syllables are not necessarily modified to a maximally unmarked structure (CV). The Markedness constraint of no coda and no complex onset are generally violated in lexical items of English origin.

In Krio, the extra syllabic /s/ in an /s/-initial cluster in lexical items of English origin is deleted eliminating the cluster in onsets containing two segments but reducing a cluster containing three segments to two (which is still a complex onset). That is, the 'no onset cluster' constraint applies



only to two-segment clusters containing an extra syllabic /s/. For example:

- (16) a. /ton/ (stone) (Basilect)      b. /tap/ (stop)  
 c. /pun/ (spoon) (Basilect)      d. /pit/ (spit)  
 e. /tinap/, /tanap/ (stand up)      f. /pred/ (spread)  
 g. /krep/ (scrape)      h. /trit/ (street)  
 i. /trɔŋ/ or /traŋga/ (strong)

There are exceptions to this though. The vowels of some lexical items originating in English have undergone minor pronunciation changes while the pronunciations of consonants in the onset clusters have remained unchanged. They include words like: shrimp, shrink, square, scared, spanner, spider, speed, skin, school, etc. Nevertheless, cluster reduction in onsets in Krio (and possibly other creoles), when applied, is apparently triggered by the presence of an extra syllabic /s/, which is deleted in the process regardless on the number of segments in the onset. This is supported by the fact that onset clusters with no extra syllabic /s/ do not undergo any reduction process, as is evident in the following examples:

- (17) a. /ple/ (play)      b. /pre/ (pray)  
 c. /frɔk/ (frock)      d. /bred/ (bread)  
 e. /dreb/ (drive away)      f. /blɛn/ (blind)  
 g. /broko/ (broken)      h. /klem/ (climb)  
 i. /kraɟ/ (cry)      j. /blo/ (blow)

The markedness proposal that complex onsets comprising of stop-liquid or fricative-liquid clusters are reduced to a single stop consonant (an indication of the emergence/retention of the unmarked) is not borne out in Krio.

Additionally, the ‘no coda’ markedness constraint is not adhered to in lexical items of English origin in Krio. Codas with single segments generally remain unchanged while those with two segments are consistently reduced to a single segment. For example:

- |      |    |                 |    |                |
|------|----|-----------------|----|----------------|
| (18) | a. | /bɛn/ (bend)    | b. | /ɛp/ (help)    |
|      | c. | /sɛf/ (self)    | d. | /lɛn/ (lend)   |
|      | e. | /mɛn/ (mind)    | f. | /blɛn/ (blind) |
|      | g. | /grɔn/ (ground) | h. | /fɔs/ (first)  |
|      | i. | /bɔs/ (burst)   | j. | /trɔs/ (trust) |

There are isolated lexical items of English origin, though, (/gi/ ‘give’ and /gɛ/ ‘get’) which obey the ‘no coda’ constraint.

As the above examples demonstrate, the syllable structure of Krio does not adhere to either the ‘no complex onset’ or the ‘no coda’ markedness constraints in lexical items of English origin, which in effect rules out Krio as a prototypically or maximally unmarked language in terms of syllable structure. Nevertheless, the fact that the number of segments is reduced in a complex coda when it contains an extra syllabic /s/ and in a coda when it contains a cluster also rules it out as a prototypically marked language. The evidence from modification of syllable structure in lexical items of English origin indicates that it is somewhere in between.

#### 5.4. Substrate Influence on the Syllable Structure of Krio

The argument that proposals of substrate influence should not be invalidated by the presence of similar phenomena elsewhere is extended by advocates (Alleyne 1980; Holm 1988; Spencer 1971) in accounting for the syllable structures exhibited by creoles (including Krio). The restricted range of syllable structures exhibited by creoles is proposed to have been influenced by the similarly restricted range allowed in

substrate languages, which were the native languages of the speakers of pidgins that preceded most of the creoles. This view asserts that the restricted range of syllable structures in these pidgins was the direct result of transfer of the syllable structures of the primary (substrate) languages of its speakers.

Many African languages are proposed to have restrictions that they impose on the presence of codas and onset consonant clusters (Simo Bobda 2000; Sey 1973; Dunstan 1969). The basic CV syllable structure, common in substrate languages, is thus argued to have been transferred into pidgins and subsequent creoles. Since substrate languages tend to exhibit a simple CV syllable structure, this has generally been maintained in lexical items of West African origin in Krio regardless of the number of syllables in the word. For example:

#### Two syllables

- (19) a. /kabɔ/ 'welcome'  
 b. /kãga/ 'magic'  
 c. /koko/ 'a bump on the body'

#### Three syllables

- (20) a. /arara/ 'nothing at all'  
 b. /emina/ 'plant with edible yam-like tuber'  
 c. /okuru/ 'rabies'  
 d. /rakpala/ 'engage in rough and tumble'  
 e. /wahala/ 'trouble'

#### Four syllables

- (21) a. /alafia/ 'peace of mind'  
 b. /alakori/ 'good for nothing person'  
 c. /gbogbogia/ 'thick grass'  
 d. /kakatua/ 'the ring leader'  
 e. /ɔmɔlanke/ 'handcart'

- f. /sankamarũ/ 'a poor imitation of jewellery'
- g. /sumãgama/ 'incest'
- h. /warawere/ 'suddenly; in a flash'

## 6. Discussion and Concluding Remarks

As examples in this paper demonstrate, there are similarities between the vowel and consonant inventories in Krio (and other creoles) and vowel and consonant sounds that are proposed to reflect a default universal inventory because of the presence of these sounds in a majority of languages of the world (Haspelmath et al. 2005). Nevertheless, it will be simplistic and even erroneous to conclude that the Krio vowel and consonant systems necessarily exhibits universally maximally unmarked segments. The restricted representation of vowels and consonants is also evident in a number of substrate languages leaving open the possibility of transfer of these features from these languages into creoles (including Krio) during the pidginization phase. Additionally, the consonant inventory of Krio includes the co-articulated stops, which are not only common in a number of lexical items of West African origin but are also rare cross-linguistically, making them typologically marked.

The similarities between the phonological processes ('stopping' and 'fronting') evident in Krio and in the outputs of children in L1 acquisition are inadequate as evidence of universally unmarked phonological processes in Krio. In L1 acquisition, the processes involve a much wider range of consonant segments that are replaced and they are generally applied in every position of the word (initial, medial and final) with regularity. The processes in Krio involve only a few segments, a couple of which (/θ, ð/) are substituted with regularity in all positions of the word and another handful (v, ʃ) that is substituted in only some lexical items and in specific positions of the word. That is,

the processes are applied with varying degrees of regularity, predictability, and frequency. For Krio to be considered maximally unmarked, these processes have to include a wider range of sounds and should be applied with greater regularity, as is the case in L1 acquisition.

The possible unmarked status of Krio is further undermined by the evidence of other phonological processes (including palatalization – which substitutes an unmarked segment with a marked one – and vowel nasalization) that absent in L1 acquisition and not evident in a large number of languages. The presence of these processes, in addition to the presence of vowel harmony in both Krio and other West African languages, provides strong evidence of the influence of language transfer in the process of creolization.

In terms of syllable structure, the lexical items of West African origin have generally retained the syllable configurations (generally CV) that they had in the languages from which they originated. The CV syllable structure is however not imposed on lexical items of English origin in Krio. A number of these lexical items have retained their complex onsets and reduction in onsets invariably involves the deletion of an extra syllabic /s/. The segments in the codas are reduced only when there is a cluster. A single segment cluster generally remains unchanged contrary to the ‘no coda’ markedness constraint. Thus, the syllable structure of lexical items of English origin manifested in Krio, like the segment inventory, does not conform to the maximally unmarked structure – CV.

In effect, the Krio data presented do demonstrate an interaction of universal and substrate influences in both the type and number of segments allowed in syllables in Krio though there is no conclusive evidence to support a stronger influence over the other.

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