

Syllable structure and patterns of phonotactic restructuring in Caribbean creoles

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1. INTRODUCTION

(3) TRADITIONAL CLAIM:

Creoles favour an unmarked CVCV syllable structure (cf. e.g. Romaine 1988). Superstrate words which do not meet this requirement often undergo phonotactic restructuring such as final vowel epenthesis or deletion of consonants.

(4) EPIENTHESIS IN CREOLES (data taken from Holm 1988: 108ff)

a.	galUfu	<	Pt. garfo	São Tomé CP
b.	kɪni	<	Dt. knie	Negerhollands CDt
c.	cArabe	<	Fr. crabe	Mauritian CF
d.	mɪl	<	E. meet	Vern. Liberian E.
e.	diosO	<	Sp. dios	Palenquero CSp
f.	takɪ	<	E. talk	Sranan CE

(5) DELETION IN CREOLES

a.	tomp	<	Dt. Stomp	Negerhollands CDt
b.	kupa	<	P. Ocupar	Principe CP
c.	ris	<	Fr. risQUE	Haitian CF
d.	tan	<	Dt. tanD	Negerhollands CDt
e.	merican	<	E. American	Bahamian CE
f.	tan	<	E. Stand	Sranan CE

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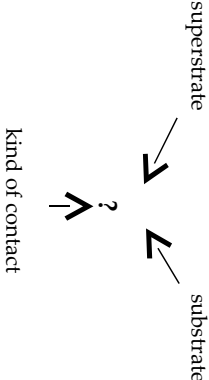
(6) MORE RECENT FINDINGS:

Most creole languages allow not only CV syllables, but also more complex structures (Klein (forthcoming), Plag/Schramm 2006). However, creoles usually tend to have simpler syllable structure than their lexifier languages.

(7) BASIC PROBLEMS:

- **empirical:** Need for detailed studies of phonotactic constraints and restructuring processes in individual creole languages.
- **theoretical:** Emergence of patterns? Role of superstrate, substrate, universals, nature of contact?

(8) Larger context: cross-linguistic study of early creole documents



(9) This study: Investigation of two English- and two Dutch-based Caribbean creoles

- Early Saramaccan (ESA, data from Schumann 1778)
- Early St Kitts (ESK, late 18<sup>th</sup> & early 19<sup>th</sup> cent., data from Baker et al. 1999)
- Berbice Dutch (BD, data from Kouwenberg 1994)
- Negerhollands (NH, data from Sabino 1990)

(10) PROSODICS:

- Phonotactic restructuring takes place, because the constraints on syllable structure are tighter in the substrates than in the lexifier languages (transfer of phonotactic constraints from the substrate languages and effects of non-native perception).
  - The structures we find in a creole are the result of a compromise between the superstrate and the substrate grammars.
  - The outcome cannot be predicted from the grammar of the involved languages alone.
  - The nature of the contact plays an important role in the shaping of creole syllables.
- Continuing superstrate presence or more intensive contact is likely to result in a greater assimilation to superstrate structures.

2. METHODOLOGY

(11) Systematic comparison of creole words and their respective etyma.

- Coding of the data for structural properties & restructuring processes:

Variable	Assigned values
- restructuring processes	e.g. <i>vowel epenthesis, consonant deletion, metathesis, none</i>
- manner of segments	e.g. <i>stop, fricative, nasal, ...</i>
- place of segments	<i>labial, coronal, dorsal</i>
- voicing of segments	<i>voiced, voiceless</i>
- sonority distance in clusters	e.g. nasal-plosive: -2, plosive-liquid: +3

(12) Statistical analysis

- Can the restructuring process be predicted by the structural properties of the etyma?
  - CHAID classification analysis using the SPSS AnswerTree<sup>®</sup> software package
  - CHAID = CHI-squared Automatic Interaction Detection: algorithm that calculates the best predictor variable on the basis of a chi-square test performed on all independent variables.
- This procedure is repeated recursively over subsets, resulting in a tree-like structure.

3. SUBSTRATE SYLLABLE STRUCTURE

(13) Main substrate languages<sup>1</sup>

- ESA: Gbe, Twi, Kikongo
- ESK: Gbe, Akan languages (Twi/Fante), some minor influence from Yoruba
- NH: Akan languages (Twi/Fante), Gbe (Ewe, Fon), Gã
- BD: Eastern Ijo

(14) Sources for substrate languages:

- Gbe: Schlegel 1856, Westermann [1934] 1961
- Twi/Fante: Christaller 1875; Riis 1853
- Kikongo: Seidel/Struyf 1910
- Gã: Ellis [1894] 1974
- Ijo: Williamson 1965

(15) Phonotactic constraints in the substrates:

- Gbe and Kikongo have only open syllables. Eastern Ijo has nasalisation, but no nasal consonants word-finally. Word-final nasals are possible in Twi and Gã.
- Onset clusters are allowed only if sonority increases towards the syllable peak.<sup>2</sup> [obs]-[son] clusters are possible onsets in Gbe, Twi, Gã and Eastern Ijo. Kikongo permits only complex onsets of the type [obs]-[glide].
- Word-internal sequences of a nasal followed by a homorganic stop (NC) occur in all substrate languages.<sup>3</sup>
- Obstruent clusters are not allowed in any of the substrate languages, regardless of position.

<sup>1</sup> For ESA, cf. Rhoter 2002 and for ESK, Cooper 1999. For information on the main substrates for Berbice Dutch cf. Kouwenberg 1994 and for Negerhollands Sabino 1990 as well as Stolz/Stein 1986.

<sup>2</sup> For the role of sonority in syllabification cf. e.g. Clements 1990.

<sup>3</sup> Note, however, that it is not always clear how internal NC sequences are interpreted in the substrate languages. They might be identified as co-articulated single-segment onsets in some of the African languages. Not all substrate sources make an explicit statement regarding this issue.

#### 4. CREOLE VS. SUPERSTRATE AND SUBSTRATE

##### (16) Early Saramaccan (ESA)

	Gbe	Kikongo	Twi	Saramaccan	
<b>complex onsets:</b>					<b>examples:</b>
[obs] [son]	yes	[obs][glide]	yes	yes	<i>dringi</i> 'drink'
/sP/	no	no	no	deletion of /s/ V-epenthesis	<i>strong</i> > <i>tranga</i> <i>skin</i> > <i>sikien</i>
<b>internal clusters:</b>					
N C	yes	yes	yes	yes	<i>kondre</i> 'country'
L C <sup>4</sup>	no	no	no	metathesis	<i>faltan</i> > <i>fialta</i> 'miss'
C <sub>1</sub> C <sub>2</sub>	no	no	no	deletion of C <sub>1</sub> or C <sub>2</sub> V-epenthesis	<i>sister</i> > <i>sissa</i> <i>casca</i> > <i>kassika</i> 'peel'
<b>word-final consonants:</b>					
nasal	no	no	yes	yes, if [m, n] deletion if syllable unstressed	<i>begin</i> 'begin' <i>handsome</i> > <i>hanso</i>
non-nasal	no	no	no	V-paragoge if [n] V-paragoge V-paragoge ~ metathesis if L	<i>fling</i> > <i>fringi</i> <i>afraid</i> > <i>fredie</i> <i>tafel</i> > <i>tafla</i> 'table'
NC#	no	no	no	V-paragoge	<i>bend</i> > <i>beniti</i>
C <sub>1</sub> C <sub>2</sub> #	no	no	no	deletion of C <sub>2</sub> and V-paragoge	<i>first</i> > <i>fossi</i>

##### (17) Generalisation for Saramaccan:

- Apart from unmarked CV syllables, ESA, like its substrate languages, allows complex onsets of the type [obs][son] as well as word-internal sequences of a nasal followed by a homorganic stop or fricative (NC).
- Additionally, the creole displays (certain) nasal consonants also in word-final position, a structure which is possible in only one of the substrate languages.
- All other complex structures are repaired, usually by either consonant deletion or vowel epenthesis (final or non-final), or, in the case of final consonant clusters, both. Coda /l/ and /r/ alternatively undergo metathesis with the preceding vowel.
- Thus, ESA syllables correspond to the template (C)(C)V(N).

<sup>4</sup> The notation 'L' is used here to refer to both /l/ and /r/, which behave alike in many contexts. Note that this does not entail any implications as to which natural class of sounds /r/ should be assigned to in the individual lexifier languages.

##### (18) Early St. Kitts (ESK)

	Twi/Fante	Gbe	ESK	
<b>complex onsets:</b>				<b>examples:</b>
[obs] [son]	yes	yes	yes	<i>sleep</i> 'sleep'
/sP/	no	no	deletion of /s/	<i>skin</i> > <i>kin</i>
<b>internal clusters:</b>				
N C	yes	yes	yes	<i>suntin</i> 'something'
C <sub>1</sub> C <sub>2</sub>	no	no	deletion of C <sub>1</sub> or C <sub>2</sub>	<i>nasty</i> > <i>nasy</i>
<b>word-final consonants:</b>				
nasal	yes	no	yes	<i>opin</i> 'open'
non-nasal	no	no	yes	<i>lib</i> 'live'
NC#	no	no	yes, if C ≠ T	<i>tink</i> 'think'
C <sub>1</sub> C <sub>2</sub> #	no	no	C-deletion if C = T deletion of C <sub>2</sub>	<i>send</i> > <i>sen</i> <i>musl</i> > <i>mus</i>

##### (19) Generalisation for St. Kitts:

- ESK allows all types of syllable structure which also occur in its substrate languages: complex onsets of the type [obs][son], word-internal NC-sequences and nasal consonants at the end of words.
- Apart from that, non-nasal consonants are maintained in word-final position. The same is true for NC clusters, which are variably simplified only if the final segment is a coronal stop (T).
- Word-internal CC-clusters are typically simplified by deletion of either C<sub>1</sub> or C<sub>2</sub>.
- Deletion of the edge-most segment is the usual procedure for initial /sP/ clusters and final CC-clusters.
- All in all, ESK allows syllables of the type (C)(C)V(N)(C).

## (20) Berbice Dutch (BD)

	Eastern Ijo	Berbice Dutch	examples:
<b>complex onsets:</b>			
[obs] [son]	yes <sup>5</sup>	yes	<i>grasa</i> 'grass'
		variable V-epenthesis if C <sub>2</sub> = N	<i>snoroka</i> 'snore'
			<i>knie</i> > <i>kini</i> 'knee'
/sP/	no	yes	<i>stati</i> 'town'
		deletion of /s/	<i>steen</i> > <i>ten</i> 'stone'
<b>internal clusters:</b>			
N C	yes	yes	<i>sondaka</i> 'Sunday'
L C	no	yes	<i>kerki</i> 'church'
		C-deletion or metathesis	<i>vergeten</i> > <i>frugete</i> 'forget'
		yes	<i>dohti</i> 'thirsty'
C <sub>1</sub> C <sub>2</sub>	no	deletion of C <sub>1</sub> or C <sub>2</sub>	<i>zusster</i> > <i>sosro</i> 'sister'
<b>word-final consonants:</b>			
nasal	only as nasalisation	yes, if [m, n]	<i>nam</i> 'name'
non-nasal	no	V-paragoge if [ŋ]	<i>jong</i> > <i>jongu</i> 'young'
		V-paragoge	<i>mok</i> > <i>moku</i> 'cup'
		V-paragoge ~ metathesis if L	<i>spjiker</i> > <i>spjigri</i> 'nail'
NC#	no	V-paragoge	<i>lamp</i> > <i>lampu</i> 'lamp'
LN#	no	V-epenthesis	<i>darn</i> > <i>darnu</i> 'bowels'
C <sub>1</sub> C <sub>2</sub> #	no	V-paragoge	<i>vrucht</i> > <i>fruktu</i> 'fruit'
		V-paragoge and C-deletion, metathesis, or V-epenthesis	<i>somtijs</i> > <i>somiti</i> 'sometimes, perhaps'

## (21) Generalisation for Berbice Dutch:

- Apart from [obs][son]-onsets and internal NC-clusters, which are permitted in Eastern Ijo, BD additionally allows initial /sP/-sequences as well as internal CC-clusters. However, these structures are not categorically preserved, but are variably simplified by consonant deletion.
- The word-final nasals [m] and [n] are maintained. Final [ŋ] undergoes vowel paragoge.
- For word-final non-nasal consonants and consonant clusters, vowel paragoge is the typical repair. Metathesis is a possible alternative option with final /l/ or /r/, and insertion of a non-final epenthetic vowel is attested for LN-clusters. Combinations of vowel paragoge and a second repair mechanism are attested in a small number of words with final clusters.

- All in all, BD syllables correspond to the pattern (s)(C)(C)V(N).<sup>6</sup>

<sup>5</sup> This type of onset occurs in Ijo only in forms contracted from CVrV sequences.

<sup>6</sup> There are only two attestations of initial CCC-clusters in the data: *sprinkum* 'grasshopper' and *strom* 'stream'.

## (22) Negerhollands (NH)

	Twifante	Gbe	Gã	Negerhollands	examples:
<b>complex onsets:</b>					
[obs] [son]	yes	yes	yes	yes	<i>plim</i> 'feather'
/sP/	no	no	no	yes	<i>sten</i> 'stone'
				deletion of /s/	<i>stop</i> > <i>top</i> ~ <i>stop</i> 'stop'
<b>internal clusters:</b>					
N C	yes	yes	yes	yes	<i>pampun</i> 'pumpkin'
				deletion of C <sub>1</sub> or C <sub>2</sub>	<i>grinder</i> > <i>greiner</i>
C <sub>1</sub> C <sub>2</sub>	no	no	no	yes	<i>mestur</i> 'master'
				deletion of C <sub>1</sub> or C <sub>2</sub>	<i>verschrinkelien</i> > <i>fosika</i> 'powerful'
<b>word-final consonants:</b>					
nasal	yes	no	yes	yes	<i>alen</i> 'only'
non-nasal	no	no	no	yes	<i>hus</i> 'house'
				deletion	<i>pass op</i> > <i>paso</i> 'watch out'
NC#	no	no	no	yes	<i>hont</i> 'dog'
				deletion of C	<i>plank</i> > <i>plag</i> 'plank'
LC#	no	no	no	yes	<i>fak</i> 'person'
				V-epenthesis	<i>wild</i> > <i>wilit</i> 'wild'
C <sub>1</sub> C <sub>2</sub> #	no	no	no	yes	<i>akt</i> 'eight'
				deletion of C <sub>2</sub>	<i>reks</i> > <i>rek</i> 'right'
				V-epenthesis	<i>hoogst</i> > <i>hogis</i> 'highest'

## (23) Generalisation for Negerhollands:

- There is no type of lexifier syllable structure that is banned altogether from Negerhollands.
- Variable deletion applies to simple non-nasal codas as well as most types of clusters. Only final LC shows a different preference with vowel epenthesis as the majority option.
- All in all, Negerhollands allows for syllables that follow the pattern (s)(C)(C)V(C)(C).

## 5. RESULTS

1. None of the creoles allows only unmarked CV syllables (against the simplicity claim).
  - [obs][son] clusters are permitted as onsets in all investigated creoles: these are either /sN/ clusters or combinations of an obstruent followed by a liquid or glide.
  - (Certain types of) nasal consonants are permissible in word-final position across all four creole languages.
- These are precisely the types of syllables which occur in the majority of substrate languages.
2. The majority of creole languages allow more complex syllables than their substrates.
  - However, those structures which are preserved are not necessarily the same across all creoles investigated. For instance, ESK and NH systematically preserve non-nasal word-final consonants, which are not permitted in BD. BD, on the other hand, retains a considerable number of word-internal non-nasal clusters, a structure which is avoided in the two English-based creoles.
3. Despite strong similarities in the syllable structure of the substrate languages, we find a variety of different patterns even across creole languages which share the same lexifier language:
  - Among the English-based creoles, ESK allows for a considerably greater variety of syllable types than the Surinamese creole ESA.
  - Of the two Dutch-based creole languages, NH is the more liberal one with regard to syllable structure: all syllable types found in the lexifier words are also attested in NH, although some of the more complex ones undergo variable restructuring. BD is considerably more restrictive especially with regard to word-final position.

## (24) How can the observed similarities and differences be accounted for?

- both substrate and superstrate play a role in shaping the creole grammar
- varying degrees of influence from substrate and superstrate languages:
  - a. variability with regard to the access the creole speakers had to the lexifier language:
    - The more radical English-based creole, ESA, was removed from lexifier influence early on, when the Dutch took over Suriname in 1668.<sup>7</sup>
  - b. variability with regard to the linguistic constellations among the slaves
    - In the Berbice colony, there was a clear dominance of Ijo-speaking slaves in the initial period. Smith et al. (1987) suggest that Berbice Dutch developed in the period of expansion as a common language among the Ijo-speaking slaves and slaves with other language backgrounds to the exclusion of the Dutch overseers and planters.

## 6. CONCLUSION

### (25) Preliminary results:

- Creole syllable structure is a compromise between substrate and superstrate structures.
- The development of creole syllable structure appears to include initial transfer of phonotactic constraints from the substrates and subsequent approximation to lexifier structures, thus showing parallels to second language acquisition.<sup>8</sup>
- The degree of approximation to lexifier structures is strongly influenced by the kind of contact, in particular the availability of the superstrate and the constellation of the groups of speakers involved.

<sup>7</sup> For a detailed comparison and discussion of the two English-based creole languages cf. Plag/Schramm 2006.

<sup>8</sup> Cf. e.g. Brousseau 2003 for transfer arguments in other areas of creole phonology.

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