THE PRE-NASALIZED CONSONANTS OF KRIYOL

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Abstract: The status of the pre-nasalized consonants of basilectal Kriyol (Guinea-Bissau Creole) is a matter of some dispute in the literature, between proponents of bisegmental analyses and of a monosegmental one. After first critically reviewing bisegmental analyses, this paper examines synchronic and diachronic data in favour of an interpretation of pre-nasalized consonants as single phonemes. This analysis is further supported by comparative evidence from other creoles, with various lexifiers (Portuguese, Spanish and English).

Keywords: Kriyol, syllabic nasals, pre-nasalized consonants, bisegmental, monosegmental

1. Introduction

The basilectal variety of Kriyol[1] has a large number of phonetically pre-nasalized consonants. Their phonological interpretation is subject to ongoing controversy. According to bisegmental analyses, phonetically pre-nasalized consonants are underlyingly clusters consisting of a nasal consonant and an obstruent, while in word-initial position the nasal is always syllabic. On the monosegmental view defended in this paper Kriyol has pre-nasalized phonemes.

The paper is organized as follows. In section 2, I critically review the bisegmental analyses of the pre-nasalized consonants of Kriyol. Section 3 focusses on the distribution of pre-nasalized consonants. In section 4 I discuss the various factors conducive to the occurrence of pre-nasalized consonants in Kriyol. In addition, circumstantial evidence is provided from other languages, including creoles with various lexifier languages (Portuguese, Spanish and English). Finally, in section 5, I summarize the findings and some of their implications.

All examples are rendered in the orthography or in the system of transcription used in the sources mentioned. Relevant segments appear in bold characters.

2. Bisegmental analyses revisited

2.1 Green (1988), Kihm (1994)

According to Green (1988: 437) and Kihm (1994: 16), Kriyol pre-nasalized consonants in word-initial position are underlyingly clusters since the nasal element has become syllabic after near-complete erosion of a preceding vowel (Green 1988: 437, Kihm 1994: 16).

Two objections can be raised against this interpretation. First, near complete erosion is not defined. Second, if there still is a vowel, even if almost completely eroded, the pre-nasalized consonant is not word-initial.

2.2 Do Couto (1994)

Do Couto (1994) acknowledges the occurrence of phonetically pre-nasalized consonants in Kriyol, but on his analysis Kriyol does not have pre-nasalized phonemes.

[1] The so-called *kiriol fundu* 'deep Creole', as opposed to *kiriol lebi* 'light Creole', the variety closer to Portuguese, the lexifier language (Doneux and Rougé 1988: 2).

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Do Couto (1994: 71) also states that "when the utterance-initial nasal consonant cannot constitute a unique pre-nasalized phonetic complex it has a syllabic value":

(1) a. /**ŋ**/ + /**b**ai/ → [**m**.bai] 'I went' (do Couto 1994: 70)
I go
b. /**ŋ**/ + /**n**a/ + /bai/ → [**n**.**n**a.bai] 'I am going' (do Couto 1994: 70)
I PROGR go
c. /**ŋ**/ + /**r**iba/ → [**n**.**r**i.ba] 'I came back' (do Couto 1994: 70)
I come back

However, a closer inspection reveals that there is no evidence for the phonetic syllabicity of the nasal in surface forms such as (1a), in which the nasal could yield a phonetically pre-nasalized consonant [^{m}b].[2]

Moreover, if the utterance-initial nasal were always syllabic, it should bear features of a missing vowel, e.g. tone or stress (Clements 2000: 147), and it would not necessarily be homorganic[3] with the following consonant. Consider the following examples from Swahili:

(2) a. /mu/ + /ili/ → [**mw**i**.**li] 'body sg.'
NOUN CLASS PREFIX body
b. /mu/ + /ti/ → [**ḿ.**ti] 'tree sg.'
NOUN CLASS PREFIX tree

As can be seen, in (2a) the glide [w] reflects the underlying vowel /u/ of the noun class prefix, which is glided before a vowel-initial root. In the form in (2b), the syllabic nasal [m] carries stress, i.e. a feature of a missing vowel, and it is not homorganic with the following consonant. On the contrary, in the Kriyol forms under (1) there is no missing vowel, the nasal does not carry stress and it is always homorganic with the following consonant.

Finally, the existence of syllabic nasals does not rule out the occurrence of pre-nasalized phonemes in the same language. Consider the examples below from Nyanga (Mwita 2007: 63):

(3) a. /m/ + /bale/ → [**m.**ba.le] 'brother sg.'
NOUN CLASS PREF brother
b. /n/ + /bale/ → [^{m}**b**a**.**le] 'plate sg.'
NOUN CLASS PREF plate

Similar cases can be found in Kriyol:

(4) a. /ŋ/ + /karga/ → [**ŋ.**kar**.**ga] 'I carried'
I carry
b. /ŋkarga/ → [^{ŋ}**k**ar**.**ga] 'to appoint'

Do Couto (1994: 71) writes that "in the African substrate and even adstrate languages, there is a whole series of pre-nasalized [consonants] which represent independent phonemes". Nonetheless, he claims that "In [Guinea-Bissau] Creole, however, [pre-nasalized consonants] were reinterpreted" and "[mb, nd, ŋg], for example, ceased being /^{m}b, ^{n}d, ^{ŋ}g/ and turned into

[2] Cf. d'Andrade and Kihm (2000: 102): "When *N* gets prefixed […] to *paña* [catch] the phonetic output […] is indistinguishable from a basically prenasalized consonant"

[3] It is only pre-nasalized consonants that must satisfy the condition that the two components should be homorganic (see e.g. Mwita 2007: 58).

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/ŋ + b, ŋ + d, ŋ + g/" (do Couto 1994: 71). On his analysis "this phonologization of the prenasal element is due, undoubtedly, to the influence of Portuguese" (do Couto 1994: 71).

Such an account is objectionable on several grounds. First, in creole languages it is the phonology of the lexifier language that is restructured under the influence of the substrate languages. Consequently, creole phonology reflects the phonology of substrate languages rather than that of the lexifier language. This is *a fortiori* true of creoles developing *in situ*. The existence of pre-nasalized phonemes in the substrate and adstrate languages would therefore favour their preservation in Kriyol.

Second, the sociolinguistic situation in Guinea-Bissau also makes it rather unlikely that the influence Portuguese could possibly trigger the reinterpretation of pre-nasalized phonemes. Thus, Holm (1989: 276) writes that "knowledge of Portuguese is much less widespread in Guinea-Bissau". Intumba (n.d.) also mentions "the small number of speakers of Portuguese in Guinea-Bissau". Augel (1997) indicates for 1991 and 1993 the following percentages: 8% and 9% respectively. Do Couto (1997) himself states that only "2% Guineans […] somehow speak Portuguese". More recently, Embaló (2008: 101) estimates that "approximately 13% of Guineans speak it".

Third, consider the issue of the first language of the speakers of Kriyol. According to Holm (1989: 275), "most speakers consider themselves members of indigenous ethnolinguistic groups whose language they learn from their parents as infants". Intumba (n.d.) explicitly states that "the largest part of Guineans is born in communities or in families where the L1 language (mother tongue) is an African language". A similar point is made in a recent appraisal of the function of Kriyol in Guinea-Bissau. Thus, Embaló (2008: 101) writes that "the two dozens of Niger-Congo African languages […] constitute the mother tongues of the overwhelming majority of the Guinean population".

Finally, as noted by Holm (1989: 275), most speakers of Kriyol "speak the creole as a second language" and "city dwellers learn the creole almost simultaneously from their age-mates". Similarly, Intumba (n.d.) writes that "in many cases the acquisition [of Kriyol] occurs simultaneously with that of an African language". It follows that Portuguese is learned, if ever, after an African language and Kriyol have already been acquired.

In light of the above, Portuguese influence is a rather improbable factor in restructuring the phonology of basilectal Kriyol. On the other hand, a much stronger case can be made for the potential occurrence in Kriyol of pre-nasalized consonants, under the influence of the substrate and adstrate languages.

3. Distribution of pre-nasalized consonants

3.1 Pre-nasalized consonants and stress

According to d'Andrade and Kihm 2000: 100), Kriyol verbs have final stress, as seen in the following examples:

(5) a. *kumé* 'to eat' (d'Andrade and Kihm 2000: 101)
b. *plantá* 'to plant' (d'Andrade and Kihm 2000: 99)

Consider, however, the position of stress in the past tense of verbs, first person singular. In (6a) stress falls on the first syllable, whereas (6b) has final stress:

(6) a. *N + ntindí* → *N ntíndi* 'I understood'(d'Andrade and Kihm 2000: 101)
I understand

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b. *N + pañ**á*** → *N pañ**á*** ‘I caught’ (d’Andrade and Kihm 2000: 102)
I catch

D’Andrade and Kihm (2000) account for the different stress pattern in terms of the differences in the structure of the word-initial initial onset of the verbs in (6a) and (6b) respectively:

(7) a. O b. O
| |
X X
/\ |
n t p

As shown below, with *ntindí*, the personal pronoun for the first person singular *n* attaches to an onset which becomes branching:

(8) a. O b. O
/\ |
X X X
| /\ /\
n n t m p

D’Andrade and Kihm (2000: 106) suggest that stress assignment in the past tense of verbs, first person singular is governed by the following rule: heavy syllables attract stress iff (i) they constitute the left or right periphery of the phonological word; (ii) a left peripheral syllable is left-heavy (from the onset) and a right peripheral syllable is a right-heavy (from the coda). Note that in *N ntíndi* ‘I understood’ the phonetically pre-nasalized consonant [nt] can only be derived from underlying /nt/, whereas in *N pañá* ‘I caught’ the phonetically pre-nasalized [mp] is underlyingly /n/ + /m/.

3.2 Pre-nasalized consonants in forms containing another nasal

Pre-nasalized consonants, occur both word-initially and word-medially in forms containing another nasal. Consider the examples below:

(9) a. *firmi**ng**a* ‘ant’ (Scantamburlo 2002: 201)
b. *ma**nd**urgada* ‘day break’ (Scantamburlo 2002: 355)
c. *ma**ns**ariku* ‘bird species’ (Scantamburlo 2002: 357)
d. ***mb**on* ‘so’ (de Almeida 1991: 32)
e. *mi**nj**er* ‘wife’ (de Almeida 1991: 36)
f. ***nt**ema* ‘to insist’ (Scantamburlo 2002: 411)

In addition, word-initial or word-medial pre-nasalized consonants are found in variants of words containing another nasal. In such cases, the Kriyol reflex of a Portuguese obstruent is either an oral or a pre-nasalized consonant:

(10) a. ***g**anha* ~ ***ng**anha* ‘to earn’ (Scantamburlo 2002: 205)
b. *ga**f**anhoti* ~ *ga**nf**anhoti*[4] ‘locust’ (Scantamburlo 2002: 202)

[4] Cf. also the form *ka**mf**anoti* given by do Couto (1994: 70).

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3.3 Pre-nasalized consonants in forms containing no other nasal

Pre-nasalized consonants are attested in word-initial position in forms containing no other nasal:

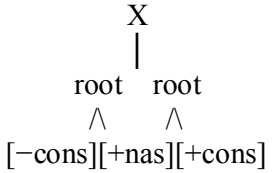
(11) a. ***mb****aria* 'to deteriorate' (Scantamburlo 2002: 367)
b. ***mp****eta* 'to bribe' (Scantamburlo 2002: 387)
c. ***ng****aba* 'to praise' (Scantamburlo 2002: 403)
d. ***nv****ita* 'to avoid' (Scantamburlo 2002: 416)

4. Emergence of pre-nasalized consonants

4.1 Reinterpretation of Portuguese nasal vowel + obstruent sequences

The overwhelming majority of the Kriyol forms with pre-nasalized consonants can be traced back to Portuguese etyma containing a nasal vowel + obstruent sequence.

The analysis outlined below assumes the representation of nasal vowels proposed by Paradis and Prunet (2000). Nasal vowels consist of two root nodes, one [−consonantal] and the other [+consonantal], sharing the feature [+nasal], and the consonantal root node lacks a skeletal position, i.e. it is not linked to an X slot. The feature geometrical representation of nasal vowels (with omission of irrelevant structure) is given below:

(12)


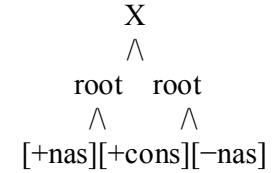
As for pre-nasalized consonants, in the analysis adopted here, these consist of two root nodes sequenced under a single skeletal position (Piggott 1988, Rosenthal 1988, Clements and Hume 1995: 254). On this view, a pre-nasalized consonant is represented as a sequence of two root nodes, the first one characterized as [+nasal] and the second one as [–nasal]. This representation assumes the *No Branching Constraint* barring branching structure under the root node (Clements and Hume 1995: 255):

(13) Configurations of the form



are ill-formed, if *A* is any class node (including the root node), *A* immediately dominates *B* and *C*, and *B* and *C* are on the same tier.

Pre-nasalized consonants are represented as follows (irrelevant structure has been omitted):

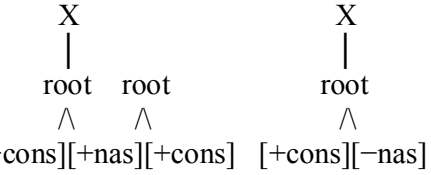
(14)


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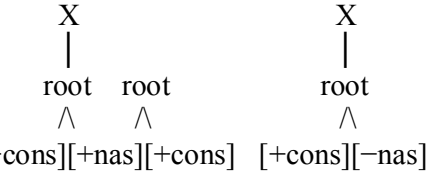
The features [consonantal] and [nasal] are not situated on the same tier: [consonantal] is linked directly to the root node, whereas [nasal] is attached to an intermediate class node[5].

Assuming the feature geometrical representations of nasal vowels in (12) and respectively of pre-nasalized consonants in (14), the formation in Kriyol of pre-nasalized consonants etymologically derived from Portuguese nasal vowel + obstruent sequences can now be formally expressed (with omission of irrelevant structure):

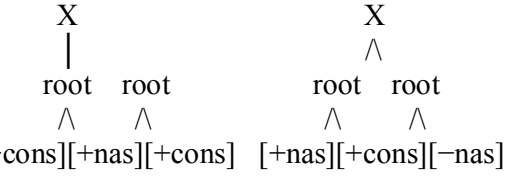
(15) a.



b.



c.



In (15b), the [+consonantal] root node of the nasal vowel, which lacks a skeletal position, is linked to the X slot of the following [−nasal] consonant. The representation in (15c) captures the fact that the originally [−nasal] consonant has turned into a pre-nasalized consonant, characterized by the ordered sequence [+nasal][−nasal].

According to Childs (2003: 62), pre-nasalized consonants arose in African languages in a process in which "the typical pattern is for nasality to spill over from a neighbouring (nasal) vowel or consonant onto a following segment". Consider the examples below, from Wolof, one of the substrate languages of Kriyol, and from Shona:

(16) a. F *lampe* > Wolof *la**mp**a*[6] 'lamp' (Diem 1995a: 3, 1995b: i)

b. E /dɒŋ.ki/ > Shona [do.**ŋg**i] 'donkey' (Kadenge and Mabugu 2009: 114)

In (16a) the French nasal vowel /ã/ triggers the formation of a pre-nasalized obstruent in Wolof [la**.mp**a], whereas in (16b) it is the English nasal consonant /ŋ/ which is the trigger. Now, the substrate languages of Kriyol include e.g. Balanta, Bambara, Fufulde and Wolof. According to the descriptions in the literature (e.g. Galtier 1978, Bird and Kante 1977, Kastenholz 1989, Colley 1995a, 1995b, Diem 1995a, Cisse 2006, Intumba 2007, Barlow n.d., Waawi n.d.), pre-nasalized phonemes occur in all these languages. It is therefore plausible to assume that Portuguese nasal vowel + obstruent sequences were reinterpreted as nasal vowel + pre-nasalized consonant sequences, under the influence of the substrate languages of Kriyol.

In the history of Kriyol, the unstressed vowels of Portuguese etyma frequently underwent deletion[7]:

[5] Such as Soft Palate or Manner, depending on the particular model of feature geometry adopted.
[6] Phonetically [la**.mp**a].
[7] For the development of the syllable structure of Kriyol see do Couto (2006).

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(17) a. P ***a****judar* > *juda* ‘to help’ (Doneux and Rougé 1988: 78)
b. P ***e****vaporar* > *bapura* ‘to evaporate’ (Scantamburlo 2002: 63)
c. P ***i****greja* > *grisia* ‘church’ (Scantamburlo 2002: 212)

Aphesis also affected word-initial nasal vowels. The combined effect of pre-nasalized consonant formation and of the deletion of word-initial unstressed nasal vowels accounts for the Kriyol forms with word-initial pre-nasalized consonants obtaining from Portuguese nasal vowel + obstruent sequences:

(18) a. P *impedir* > ***mp****idi* ‘to hinder’ (Scantamburlo 2002: 387)
b. P *enfiar* > ***mf****ia* ‘to pass the thread through the needle’ (do Couto 1994: 70)
c. P *onde* > ***nd****e* ‘where’ (Scantamburlo 2002: 399)

All such Kriyol forms involve resyllabification. In addition, their overwhelming majority also involves reanalysis of morphemic boundaries. Kriyol does not have prefixes etymologically derived from Portuguese *em-* or *im-* (Curupaná da Roche de Mello 2007). These productive Portuguese prefixes were reanalyzed and the morphemic boundary was shifted to the left, as in (18a) and (18b). However, as shown by the forms in (18c), reanalysis of morphemic boundaries is not always a concomitant of pre-nasalized consonant formation.

Pre-nasalized consonant formation and aphesis led to the emergence of a large number of forms with a CV syllable structure. As shown by do Couto (2006), early Kriyol had a strong tendency towards CV syllable structure. Pre-nasalized consonant formation and aphesis thus yielded forms exhibiting this unmarked syllable structure.

There is also circumstantial evidence in support of this scenario. Consider the following examples from other Atlantic Portuguese-lexified creoles, known to have both pre-nasalized phonemes and a clear preference for CV syllables:

(19) a. P *umbigo* > Angolar [**mb**igu] ‘navel’ (Mané 2007: 159)
b. P *engolir* > Fa d’Ambu [**ŋg**u'li] ‘to swallow’ (Granda 1986: 114)
c. P *inteiro* > Fa d’Ambu [**nt**ɛlu] ‘entire’ (Mané 2007: 211)
d. P *umbigo* > Principense [**mb**igu] ‘navel’ (Mané 2007: 184)
e. P *âncora* > Principense [**ŋk**ɔra] ‘anchor’ (Mané 2007: 185)
f. P *embaixador* > Sãotomense [**mb**aʃi] ‘ambassador’ (Mané 2007: 125)
g. P *andar* > Sãotomense ***nd****a* ‘to walk’ (Valkhoff 1966: 106)

4.2 Spread of nasality

Spread of nasality from another nasal (vowel or consonant) in the word may also lead to the emergence of pre-nasalized consonants in Kriyol. This accounts for the forms in section 3.2, repeated below for convenience:

(20) a. P *formi****g****a* > *firmi****ng****a* ‘ant’ (Scantamburlo 2002: 201)
b. P *ma****d****rugada* > *ma****nd****urgada* ‘day break’(Scantamburlo 2002: 255)
c. P *maçarico*> *ma****ns****ariku* ‘bird species’ (Scantamburlo 2002: 257)
d. P ***b****om* > ***mb****on* ‘so’ (de Almeida 1991: 32)
e. P *mu****lh****er* > *mi****nj****er* ‘wife’ (de Almeida 1991: 36)
f. P ***t****eimar* > ***nt****ema* ‘to insist’ (Scantamburlo 2002: 411)

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As can be seen in the examples above, pre-nasalized consonants obtain via either rightward or leftward spreading of [+nasal].

Spread of nasality is attested in Portuguese loanwords in languages which have pre-nasalized phonemes:

(21) a. P *Mi**g**uel* > Kikongo *Mi**ng**uedi* (Lipski 2005: 238)
b. P *Joana* > Kimbundu ***Nzw**ana* (Lipski 2005: 238)

Nasal spreading is also found in other Atlantic creoles, known to have pre-nasalized phonemes. The examples below are from Portuguese-lexified Angolar, Fa d'Ambu, Principense and Sãotomense, as well as from Spanish-lexified Palenquero:

(22) a. P ***g**alinha* > Angolar [**ŋg**aɲa] 'hen' (Mané 2007: 272)
b. P ***g**alinha* > Fa d'Ambu /**ŋg**aɲia/ 'hen' (de Granda 1986: 114)
c. P *ma**g**ro* > Principense [ma.**ŋg**u] 'thin' (Mané 2007: 183)
d. P ***p**ão* > Sãotomense [**mp**õ] 'bread' (Mané 2007: 125)
e. S ***g**rande* > Palenquero /**ŋg**ande/ 'big' (Parkvall 2000: 40)

4.3 Pre-nasalization

Kriyol pre-nasalized consonants can also be reflexes of Portuguese obstruents, as illustrated by the forms in section 3.3, repeated below for ease of reference:

(23) a. P ***p**eitar* > ***mp**eta* 'to bribe' (Scantamburlo 2002: 387)
b. P *a**v**ariar* > ***mb**aria* 'to deteriorate' (Scantamburlo 2002: 367)
c. P *e**v**itar* > ***nv**ita* 'to avoid' (Scantamburlo 2002: 416)
d. P ***g**abar* > ***ng**aba* 'to praise' (Scantamburlo 2002: 403)

Pre-nasalized reflexes of obstruents are also attested in other languages. For instance, Lipski (2005: 238) notes that Portuguese "initial oral consonants were frequently […] rendered by prenasalized obstruents" in Kikongo:

(24) a. P. *fardo* > Kikongo ***mfw**adu* 'burden' (Lipski 2005: 238)
b. P *sal* > Kikongo ***ns**alu* 'salt' (Lipski 2005: 238)

Lipski (2005: 238) further states that "prenasalization of European words originally beginning in oral obstruents was a frequent concomitant of many Afro-European linguistic contacts". Even rarer cases, such as the Kriyol forms in (23b) and (23c), in which the Portuguese obstruent is preceded by an oral vowel, have their counterparts in Kikongo. Thus, Lipski (2005: 238) writes that "Portuguese words beginning with an […] oral vowel were at times reinterpreted as a prenasalized obstruent in Kikongo".

Pre-nasalized reflexes of obstruents also occur in Mandinka and Wolof, two of the substrate languages of Kriyol:

(25) a. F ***b**outique* > Mandinka ***mb**itikoo* ~ *bitikoo* 'shop' (Colley 1995b: 8)
b. F/E ***b**iscuit* > Wolof ***mb**iskit* 'biscuit' (Diem 1995b: 26)

Finally, pre-nasalization of obstruents is found in other Atlantic creoles, known to have pre-nasalized phonemes. The following examples illustrate pre-nasalization of etymologically oral consonants in Portuguese-lexified Angolar, Fa d'Ambu, Sãotomense, Spanish-lexified

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Palenquero, Portuguese- and English-lexified Saramaccan, and English-lexified (Jamaican) Maroon Spirit Possession Language:

(26) a. P ***g****raça* > Angolar [**ŋg**aθa] ‘grace’ (Mané 2007: 161)
b. P *fe****d****er* > Fa d’Ambu /fe**nd**e/ ‘to stink’ (Parkvall 2000: 40)
c. P ***g****ato* > Fa d’Ambu ***ng****atu* ‘cat’ (Post 1995: 194)
d. P ***g****abar* > Sãotomense /**ŋg**aba/ ‘to praise’ (Parkvall 2000: 40)
e. P ***já já*** ‘immediately’ > Sãotomense ***njanja*** ‘quickly’ (Holm 2000: 156)
f. S ***d****ejar* > Palenquero ***nd****ejá* ‘to leave’ (Lipski 2005: 238)
g. S ***g****ritar* > Palenquero ***ng****ritá* ‘to shout’ (Lipski 2005: 238)
h. E ***b****oil* > Saramaccan /**mb**ói/ ‘to boil’ (Parkvall 2000: 40)
i. E *pi****g*** > Saramaccan /pí**ŋg**u/ ‘pig’ (Parkvall 2000: 40)
j. E ***b****lood* > Maroon Spirit Language /**mb**lada/ ‘blood’(Bilby 1983: 79)

4.4 Pre-nasalized reflexes of nasal consonants

The Kriyol reflex of an etymologically nasal consonant is occasionally a pre-nasalized consonant:

(27) P *i****n****imigo* > *i****nd****imigu* ‘enemy’ (Scantamburlo 2002: 228)

Although rare, pre-nasalized reflexes of nasal consonants also occur in other Atlantic creoles (with various lexifiers), known to have pre-nasalized phonemes, such as Portuguese-lexified Angolar, Portuguese- and English-lexified Saramaccan, and English-lexified (Jamaican) Maroon Spirit Possession Language:

(28) a. P ***m****esa* > Angolar [**mb**ɛða] ‘table’ (Mané 2007: 159)
a. E ***m****eat* > Saramaccan /**mb**eti/ ‘meat’ (Parkvall 2000: 40)
b. E ***n****ight* > Saramaccan ***nd****éti* ‘night’ (Holm 2000: 156)
c. E ***in*** > Maroon Spirit Language /i**nd**i/ ‘in’ (Bilby 1983: 81)

4.5 Loanwords from the substrate languages

Not surprisingly, pre-nasalized consonants also occur in loanwords from the substrate languages. Consider the following examples:

(29) a. Mandinka *ba****mb****u* > *ba****mb****ú* ‘to carry on one’s back (Scantamburlo 2002: 60)
b. Mandinka *bá****nt****abaa* > *ba****nt****aba* ‘public place’ (Scantamburlo 2002: 63)
c. Banhum *dja****mb****akos* > *dja****mb****akus* ‘fortune teller’ (Scantamburlo 2002: 145)
d. Mankañ *nduba* > *nduba* ‘child (Doneux and Rougé 1988: 33)
e. Balanta *bi****nd****i*> *bi****nd****i* ‘clay jar’ (Scantamburlo 2002: 80)
f. Wolof ***ng****uri* > ***ng****or*-***ng****or* ‘wasp’ (Scantamburlo 2002: 403)
g. Mandinka *jà****nf****aa* > *dja****nf****a* ‘to conspire, to plot’ (Scantamburlo 2002: 146)

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5. Conclusions

The evidence examined in this paper shows that Kriyol has pre-nasalized phonemes. As shown in section 2.2, these co-exist with syllabic nasals. The latter occur in morphologically complex forms, derived from underlying clusters consisting of a nasal consonant and an obstruent.

The inventory of pre-nasalized phonemes of Kriyol is rather large. It includes pre-nasalized fricatives and pre-nasalized affricates, *contra* Klein (2005 and 2006) who only lists pre-nasalized stops.

As for the distribution of the pre-nasalized phonemes of Kriyol, these occur not only word-initially, as claimed by Tinelli (1981: 9), but also in word-medial position.

The emergence of pre-nasalized consonants in Kriyol has been shown to have been triggered by factors attested cross-linguistically, including in other creoles with various lexifiers (Portuguese, Spanish and English).

The influence of the substrate languages appears to have been underestimated. Parkvall (2000: 40), for instance, claims in his discussion of pre-nasalized stops in Atlantic creoles that they "prototypically occur in words of African origin, but African phonological rules have evidently in *some* [emphasis added, A. A. A.] cases been extended to European-derived lexical items as well". On the contrary, as seen in section 4, most of the pre-nasalized consonants of Kriyol occur in words of Portuguese origin, through the reinterpretation of nasal vowel + obstruent sequences. Parkvall (2000: 41) states that in the case of other Atlantic creoles "substrate influence appears to be a plausible explanation, and more called for than in the case of the Upper Guinean Creoles", to which Kriyol belongs. In fact, the account of their emergence outlined in the present paper suggests that substrate influence is an equally plausible explanation for the pre-nasalized phonemes of Kriyol.

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