

THE PHONOLOGICAL STATUS OF THE VELAR FRICATIVE IN FA D'AMBÔ

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- **ABSTRACT:** In this study, we discuss the phonological status of /x/ in Fa d'Ambô (FA), a Portuguese-based Creole language spoken in Ano Bom Island. Based on the analysis of 270 lexical items (SEGORBE, 2007) and 108 sets of cognates that contrast Fa d'Ambô with the Proto-Creole of the Gulf of Guinea (PGG) (BANDEIRA, 2017), we observed that /x/ could be inserted in Fa d'Ambô as a result of a spirantization process characterized by the lenition of *kPGG into xFA. There is evidence indicating /x/ and /k/ as distinctive phonemes in this language. Considering the phonotactic distribution of /k/ and /x/, we noticed the occurrence of a neutralization process in Fa d'Ambô, in which /k/ is produced as [x] when the stop consonant is preceded by the low vowel [a] in prestressed syllables, as in [pɪsxa'do] ~ [pɪska'do] 'fisherman.' Otherwise, [k] remains as a plosive in stressed syllables, as in [pɪs'ka] 'to fish.' The neutralization of /k/ into [x] corresponds to a synchronous process of Fa d'Ambô. It is characterized by the maintenance of the [dorsal] feature and by the association of the [continuant] feature to the stop (CLEMENTS, 1996). This is the feature responsible for the diachronic speciation of *k into /x/ and for the annulment of the synchronous distinction between /k/ and /x/.
- **KEYWORDS:** Fa d'Ambô. Phonological Status. Portuguese-based Creole. Spirantization.

Introduction

The aim of this paper is to discuss the status of the velar fricative /x/ in Fa d'Ambô (FA) based on synchronic and diachronic evidence. Thus, we analyze the phonotactic behavior of this consonant in relation to the velar plosive /k/ and investigate whether the synchronous alternation of these segments justifies a neutralization process of the plosive into a velar fricative. Although the existence of the velar fricative in Fa d'Ambô may result from a phenomenon of spirantization, emerged when the Proto-Creole branched

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into FA (BANDEIRA, 2017), the phonological statute of /x/ is not consensual, since there are authors defining it as a phoneme (BARRENA, 1957; SEGORBE, 2007; ARAUJO *et al.*, 2013), while others postulate that the synchronous performance of this fricative is not conditioned by any context, being [k] and [x] a free variation (BANDEIRA, 2017).

In this study, we examined synchronic phonological environments capable of determining the distribution of the velar plosive and the velar fricative. Thus, we considered, through the phonotactic behavior of the target segments, whether there are two distinct phonemes neutralized in a specific environment in Fa d'Ambô or only one phoneme in complementary distribution with a phone.

Even though Fa d'Ambô is a creole language with a great vitality, there are few descriptive studies on this language. Among the scarce literature, the *Gramatica Anoboensa* by Reverend Natalio Barrena (1957) was written in the last century (BARRENA, 1957). This limits data chronologically. Furthermore, that grammar presents a prescriptive analysis of Fa d'Ambô and, even in the section on phonological description, phonology is constantly misread as language spelling. Therefore, this study is justified for it contributes with a description and a phonological analysis of a language still scarcely described, thus expanding the literature on this topic and, consequently, the linguistic documentation of Fa d'Ambô.

In the section **Fa d'Ambô**, we delineate the ancestry among the Fa d'Ambô, the native languages of São Tomé and Príncipe, and the PGG, and we also present some general aspects of Fa d'Ambô phonology, mainly focusing on the discussion regarding the presence or not of the velar fricative in the phonological inventory of this language. Next, in **Analysis Corpus**, we define the nature of the corpus, and in **Phonological Statute of the Velar Fricative in Fa d'Ambô** we discuss the status of the velar fricative by analyzing the synchronous and diachronic processes of neutralization and spirantization detected. Finally, in **Final Considerations**, we present the conclusions.

Fa d'Ambô

Fa d'Ambô (ISO 639-1) is one of the languages of Equatorial Guinea. It is mostly spoken on the Ano Bom Island, an islet located southwest of the island of São Tomé that belongs to the Republic of Equatorial Guinea (RGE). According to Araujo *et al.* (2013), Fa d'Ambô corresponds to a minority language in the domains of RGE. It is not only confined to the Ano Bom Island, but also presents a small number of speakers. This number, according to the authors, is estimated at 5,600 speakers, among which 5,000 are concentrated on the Ano Bom Island and the remaining 600 are distributed in different places in Guinea and the mainland Spain (ARAUJO *et al.*, 2013). Compared to the approximate number of inhabitants of the island, which is 5,236 people (LEWIS, 2009 *apud* ARAUJO *et al.*, 2013), we observe that, although the number of Fa d'Ambô speakers is restricted, the language is not endangered. Fa d'Ambô is widely used within the Ano Bom Island domains, has native speakers, and is transmitted as a mother

language to new generations. These facts reveal the social relevance of this language amid the Ano Bom society (ARAÚJO *et al.*, 2013).

Regarding the Proto-Creole of Gulf of Guinea,¹ Fa d'Ambô is the daughter language of the proto-creole developed in Ano Bom Island (BANDEIRA, 2017). Departing from São Tomé between 1493 and 1501, Portuguese citizens arrived on the Ano Bom Island and kept the region under control until 1778. In this period, the slaves taken to the island were already PGG speakers. Due to the geographic isolation of the region, which intensified during the 16th century,² the proto-creole underwent a series of linguistic changes that culminated in the consolidation of Fa d'Ambô (BANDEIRA, 2017). Thus, we note that the ancestry of Fa d'Ambô directly refers to the colonization of Portugal in São Tomé and Príncipe (ARAÚJO *et al.*, 2013). The Portuguese settlement reallocated the slave labor of the African continent to the islands of the Gulf of Guinea, and then from the island of São Tomé to the Ano Bom Island, which favored the genesis of the PGG and its branching into Fa d'Ambô.

Considering, on this account, PGG as the ancestor language of Santome, Lung'Ie, Angolar, and Fa d'Ambô, we can conjecture that there are many shared linguistic characteristics among these sister languages. Bandeira (2017) evidenced this in her studies. However, despite the shared features, some linguistic particularities are also observable concerning the speciation process responsible for the branching of PGG into four different languages. After the period of speciation, each language developed individually. As they are inserted in different geographic, socio-historical, and linguistic contexts, the languages of the Gulf of Guinea should present particular synchronous processes established after PGG branching, which further distinguish them.

One of the idiosyncrasies Bandeira (2017) has verified is precisely the development of the protoform *k (PGG). As stated by the author, Fa d'Ambô behaves differently in relation to the other Creole languages spoken in the Gulf of Guinea. Santome, Lung'Ie and Angolar invariably have /k/ as a reflex of the proto-phoneme *k, but Fa d'Ambô presents /k/ and [x] as a reflex of *k. Although Bandeira (2017) defines the velar fricative as one of the reflexes of *k, the status of such consonant is not consensual in the consonantal inventory of Fa d'Ambô, an issue we discuss in **The Plosive /k/ in Fa D'Ambô** section below.

¹ The Proto-Creole of Gulf of Guinea (PGG) is a protolanguage that emerged in STP during the first phase of its colonization, a period during which socio-historical, geographical, and demographic conditions were favorable “for rapid creolization” (BANDEIRA, 2017, p. 118). The consolidation of different groups of PGG speakers led to the emergence of four distinct daughter languages. Fa d'Ambô is spoken on the Ano Bom Island, and Lung'Ie is a language used on the Príncipe Island. The fugitive slaves, in turn, formed a maroon community, distancing themselves from the capital and building their own community, the Angolar community, where the Angolar language emerged. Finally, Santome or Forro, spoken in the capital, is the daughter language of PGG that remained in the same locus of emergence as the proto-language (BANDEIRA, 2017).

² In this regard, Bandeira (2017) states, furthering the studies of Caldeira (2007) and Araujo *et al.* (2013), that during the 16th century, Ano Bom had scarcely or no presence of the Portuguese language. In general, for long periods, the overseer and his personal guard corresponded to the only Portuguese citizens on the island. Then, during the transition from the 17th to the 18th century, not only did the last Portuguese citizen representative leave the island, but the slaves began to prevent the entry of immigrants in Ano Bom in the consecutive years, whether they were colonizers or not (BANDEIRA, 2017).

The Plosive /k/ in Fa d'Ambô

The consonant inventory of Fa d'Ambô is, according to Bandeira (2017), composed of sixteen phonemes, as shown below, except for the velar fricative /x/.

Chart 1 – Consonant inventory of Fa d'Ambô

	Labial	Alveolar	Palatal	Velar
Plosive	b p	d t		g k
Fricative	v f	z s		(x)
Nasal	m	n		
Lateral Approx.		l	ʎ	
Approximant	w		j	

Source: Adapted from Bandeira (2017, p. 140).

Chart 1 shows that the velar fricative /x/ is represented in parenthesis because of ongoing discussions about its phonological status, as there is no agreement in the literature regarding its classification as a phoneme (BARRENA, 1957; SEGORBE, 2007; ARAUJO *et al.*, 2013; BANDEIRA, 2017). On the one hand, Bandeira (2017) states that the fricative [x] cannot be considered a phoneme since it varies with /k/. For the author, although the production of [x] is not conditioned to a specific context, it is possible to hypothesize that /k/ began competing with the consonant [x] over time. Without this variation, it would culminate in a change during this time (BANDEIRA, 2017). Thus, synchronously, the velar stop /k/ is performed as [k], but it can also be produced as the fricative [x], suggesting that this phone was possibly introduced by Fa d'Ambô speakers in a later period of formation and branching of PGG (BANDEIRA, 2017).

On the other hand, Araujo *et al.* (2013) admit /x/ as a phoneme of the language and emphasize that this fricative, among the languages of the Gulf of Guinea, is found only in Fa d'Ambô. The authors point out that, even though the segment /x/ is also attested in Spanish, the official language of Ano Bom, there is no evidence to support the fricative as a result of a Spanish influence on Fa d'Ambô, since (i) the etyma containing /x/ are not cognates of etyma carrying the same Spanish phoneme, and (ii) etyma of Spanish origins, such as [x]uan, are nativized, being performed as [z]uan in Fa d'Ambô (ARAUJO *et al.* 2013).

Barrena (1957), in his Ano Bom grammar published in 1957, but written at the end of the 19th century, also defends the existence of two phonemes, as, according to the author, /k/ and /x/ are not in free variation or in a complementary distribution and occur within the same sound environments (BARRENA, 1957). Finally, Segorbe (2007) incorporates the velar fricative as part of the Fa d'Ambô phonological inventory. In

his grammar, it is possible to verify the occurrence of /x/ and /k/ in the same sound contexts forming minimal pairs such as /kama/ [ka'ma] ‘to burn’ and /xama/ [xa'ma] ‘to remove the scales off fish.’ Although some minimal pairs can be inferred in that study, which apparently justifies the establishment of /k/ and /x/ as phonemes of Fa d’Ambô, Segorbe (2007) points out that, in some words, the velar plosive varies with the velar fricative, as in [ka'fe] ~ [xa'fe] ‘coffee,’ the latter being a rare form. Such possibility of variation is in accordance with the argumentation of Bandeira (2017), which argues the sole existence of /k/ in the Fa d’Ambô phonological inventory, since “in many analyzed items, it is possible to observe a variation between two phones” (BANDEIRA, 2017, p. 239).

Bandeira (2017) diachronically addressed this problem through a phonological reconstruction of the PGG, performed by analysis of cognate sets obtained by data collection of the four daughter languages, and proposed that, in the proto-language, there were two velar stop consonants, *k and *g, observed in onset, word-initial, and word-medial positions. The author concluded this by comparing the reflexes of the four Creole languages of the Gulf of Guinea, which present systematic correspondences, as shown in Chart 2.

Chart 2 – Reflexes of velar plosives in PGG

PGG	Santomé	Fa d’Ambô	Lung’le	Angolar
*k	k	k/x	k	k
*g	g	g	g	g

Source: Bandeira (2017, p. 279).

On the one hand, in the Fa d’Ambô phonology proposed by Segorbe (2007) and Bandeira (2017), the authors assume the spirantization of the velar plosive as a linguistic variation that did not result in changes (BANDEIRA, 2017). On the other hand, Bandeira (2017) analyzed this issue in a diachronic view and stated that, in the reconstruction of the proto-form *k, there was a phonological alteration in Fa d’Ambô speciation, thus considering /x/ one of the reflexes of *k (BANDEIRA, 2017). Such conclusion allows stating that, in the recent phonology of Fa d’Ambô, *k may have been weakened and transformed into /x/ according to part of the data, while it remained /k/ in other items. In this case, spirantization could be a consequence of a phonological change. Such conclusion explains reflexes of *k in Fa d’Ambô. However, it does not explain the synchronic variation Segorbe (2007) and Bandeira (2017) pointed out.

Aiming to collaborate with this discussion, we analyze below possible synchronic and phonological environments that might determine the distribution of the velar plosive opposed to the velar fricative. The question is whether we are facing a free variation, an allophony, or two distinct phonemes neutralized in a specific context.

Analysis Corpus

The corpus of this study comprises lexical items of Fa d'Ambô collected from previous works on the phonological analysis of this language. The words were collected from the grammar *Gramática Descritiva del Fa d'ambô de Segorbe* (2007) and the PhD thesis of Bandeira (2017). While we used the data extracted from Segorbe's grammar (2007) above all for the phonotactic description of the velar plosive and the fricative and for the investigation of the synchronic phonological status of the velar fricative, we used the set of cognates collected by Bandeira (2017) for the analysis of spirantization as a process of linguistic change that may corroborate the condition of the velar fricative as a phoneme.

For the analysis of synchronous data, we collected 270 words (SEGORBE, 2007) transcribed in the grammar with [k] and/or [x]. We aim to examine the phonetic behavior of such segments, verifying the possibility of establishing oppositional pairs that support the status of the velar fricative as a phoneme. Furthermore, based on these lexical items, we investigate an eventual systematization of the alternation between [k]~[x] aiming to clarify the context and the domain of a possible synchronous process of neutralization.

Additionally, to include diachronic evidences that can legitimize the proposed discussion of the phonological status of the velar fricative, we also work with 108 sets of cognates comprising items belonging to the basic lexicon of the four PGG daughter languages (BANDEIRA, 2017). All words comprising this set contain the velar fricative and/or the plosive as a reflex correlated to a lexical proto-form (BANDEIRA, 2017). At this stage, we intend to analyze whether the spirantization of *k into [x] constitutes a sound change that proves the entrance of the velar fricative in Fa d'Ambô, thus indicating the implications of such diachronic process in the synchronic phonological inventory of Fa d'Ambô specifically in relation to the statute of the velar fricative as a phoneme.

The phonological characterization of target segments and the representation of the phenomenon are based on autosegmental phonology (GOLDSMITH, 1976, 1990) and feature geometry (CLEMENTS; HUME, 1995; CLEMENTS, 1996). Adopting a non-linear theoretical framework, we assume that the phonological representation of segments is given by different tiers that enable a hierarchical organization of features and autosegments. Therefore, having discussed the phonotactic aspects of [k] and [x] in Fa d'Ambô, we propose a chart that indicates which features are relevant for the segmental characterization of such sounds.

Finally, it should be noted that one of the sources of data collection, the *Gramática Descritiva del Fa d'ambô* by Segorbe (2007), though corresponding to one of the first and few instrumentalizations of this language, has a limited number of data and contains some imprecise delimitations in relation to nasality, vowel duration, and the stress system. This may be a limitation to the analysis proposed here. Consequently, and being restricted to the impossibility of a fieldwork in Ano Bom Island, this study was conducted within such limitations. In order to minimize possible biases resulting

from these obstacles, we also use other phonological descriptions, such as that of Araujo *et al.* (2013), Araujo and Agostinho (2014), and Bandeira (2017).

Phonological Statute of the Velar Fricative in Fa d'Ambô

In this section, we examine some linguistic traits related to the use of the velar plosive and fricative in Fa d'Ambô. We consider synchronic (SEGORBE, 2007) and diachronic (BANDEIRA, 2017) data that can foster the debate about the phonological status of the velar fricative in Fa d'Ambô (SEGORBE, 2007; ARAUJO *et al.*, 2013; BANDEIRA, 2017). In the section **Phonotactic distribution and the variation between /x/ and /k/**, we first describe some phonotactic synchronic aspects of [k] and [x]. Then, in the section **The spirantization of *kPGG >> x FA**, we examine spirantization as a process of diachronic change responsible for the establishment of the velar fricative identified in the speciation of Fa d'Ambô in relation to its ancestor language, the Proto-Creole of Gulf of Guinea.

Phonotactic distribution and the variation between /x/ and /k/

Based on 270 lexical items extracted from the descriptive grammar of Segorbe (2007) and the reconstructed phonology by Bandeira (2017), we verified that the velar fricative can be synchronously compared to the velar plosive through the selection of minimal pairs, as in (1), or through analogous pairs, as in (2).

- (1) a. /k/ [ka'ma] 'to burn'
b. /x/ [xa'ma] 'to remove the scales off fish.'

- (2) a. /k/ [ke'se] 'to forget'
b. /x/ [xe'le] 'to believe'
c. /k/ ['kada] 'each'
d. /x/ ['xata] 'letter'

The data in (1) suggest, at first, that both the plosive and the fricative must be defined as distinct phonemes, since /x/ can be opposed to /k/. However, when we focus on the next segmental context, we note that such distinction in the lexical items analyzed in the corpus will be only detected if the next segment is [a], or if the subsequent vowel is [e], thus configuring, in the latter case, an example of analogous pair. These contexts may be henceforth limited to support the status of /x/ and /k/ as distinct phonemes in Fa d'Ambô. Furthermore, according to Segorbe (2007) and Bandeira (2017), there are data in which there is oscillation between [k]~[x], indicating that such consonants

may vary when followed by the low vowel [a]. Some examples collected by Segorbe (2007) are presented in (3).

- (3) a. [ka'ma]~[xa'ma] 'to burn'
b. [kabɛ'la]~[xabɛ'la] 'to break/finish'
c. [ka'ba:du]~[xa'ba:du] 'broken; finished'
d. [ka'fɛ]~[xa'fɛ] 'coffee'

As shown in (3.a), the minimal pairs [ka'ma] 'to burn' and [xa'ma] 'to remove the scales off fish' presented in (1) become homonymous due to the variation between [k]~[x]. Distinctly, the data in (3.b-d), even though they do not neutralize the opposition between plosive and fricative velar consonants by voicing, given that Segorbe (2007) did not present minimal pairs that justify the establishment of homonymy, indicate that [k] can be produced as [x] in some words. However, although the variation between [k]~[x] is synchronously described in Fa d'Ambô (SEGORBE, 2007; BANDEIRA, 2017), it is not attested in all lexical items. There may be a certain sound environment that triggers the alternation and/or there may be even a specific domain for its occurrence. Some data in which the variation between the velar fricative and plosive is not verified can be seen in (4).

- (4) a. ['xama] 'fish scale'
b. ['xala] 'face'
c. ['ka:xa] 'miserly'
d. [bu:'ka] 'shipwreck'

By comparing the items in (3) to the data in (4), we can hypothesize that the variation occurs in unstressed syllables, since in words as ['xama] 'fish scale' and [bu:'ka] 'shipwreck' Segorbe (2007) did not point to any other phonemic possibilities, except for [x] and [k], respectively. The alternation between such velar consonants could be thereby triggered in the data presented here in [a] in unstressed syllables. To investigate the possibility of syllabic prominence acting as the domain of application of such variation, we analyze the data in which [k] and [x] precede [a] in different stress positions within the word. We highlight, based on the study of Segorbe (2007), when the possibility of variation is verified. The results are shown in Chart 3.

Chart 3 – Variation between [k]~[x] indicated by Segorbe (2007) – Tonicity.

<i>Context</i>	<i>Exemple</i>	<i>Gloss</i>
<i>Pretonic</i>	[<u>ka</u> 'fɛ]~[<u>x</u> a'fɛ]	'coffee'
	[<u>x</u> a'ta]	'captain'
<i>Post-tonic</i>	[ka'lakata]	'percussion instrument'
	['an <u>x</u> ala] ~ ['an <u>x</u> a]	'crab'
<i>Unstressed final</i>	['mu:s <u>ika</u>]	'music'
	['bo <u>x</u> a]	'mouth'
<i>Stressed</i>	['k <u>a</u> da]	'each'
	['x <u>a</u> ba]	'goat'

Source: Authors' elaboration.

By analyzing the items that contain [k] or [x], the data in Chart 3 indicate that, in the analyzed corpus, the only favorable environment to the variation of [k]~[x] was the pretonic one, since the plosive does not vary with the fricative in other unstressed positions or even in the stressed syllable in the data presented by Segorbe (2007). This conclusion is reinforced by expanding the number of words observed, as shown in Chart 4.

Chart 4 – Variation between [k]~[x] indicated by Segorbe (2007) - Pretonics: word-initially and word-medially.

	[ka]	Gloss
<i>Word-initially</i>	[<u>ka</u> 'fɛ]~[<u>x</u> a'fɛ]	'coffee'
	[ka'ma]~[xa'ma]	'to burn'
	[<u>ka</u> 'lakata]	'percussion instrument'
<i>Word-medially</i>	[pisk <u>a</u> 'do]~[pis <u>x</u> a'do]	'fisherman'
	[bus <u>ka</u> 'do]	'provocative person'
	[fuk <u>a</u> 'mêtu]	'drowning'

Source: Authors' elaboration.

Chart 4 shows that the alternation between the velar plosive and the fricative occurs word-initially and word-medially. This suggests that, when present, the variation between [k]~[x] is triggered by [a] in pretonic syllables. Furthermore, not all data, in this context, presents such an alternation, given that items such as [ka'lakata] 'percussion instrument,' [ka'dɛ:nu] 'notebook,' [kala'ba:] 'Nigerian,' [ka'kau] 'cocoa,' [fuka'mêtu] 'drowning,' among others, are not identified with [x] by Segorbe (2007), demarcating the optionality of the variation [k]~[x] in the examined corpus.

Also according to the data presented by Segorbe (2007), we verified that the oscillation between one form or another is always established in relation to [k] because the data transcribed as [x], contrary to the words that contain the plosive, did not present a second possibility of transcription in which [x] is replaced by [k]. Some items containing [xa] are shown in Chart 5.

Chart 5 – Production of [x] by Segorbe (2007) - Tonicity.

	[xa]	Glosa
<i>Pretonic</i>	[<u>x</u> a'la]	'to shut up'
<i>Post-tonic</i>	-----	-----
<i>Unstressed final</i>	['fa <u>x</u> a]	'knife'
<i>Stressed</i>	['x <u>a</u> su]	'miserly'

Source: Authors' elaboration.

Chart 5, as well as Chart 3, shows that, regardless of the stress of the syllable [xa], there is no data indicating the possibility of /x/ alternating with [k]. The existence of contexts in which the sound change [x] → [k] is not verified in this direction demonstrates that the plosive is neutralized as a fricative through a process of spirantization: /k/ → [x].

Even though spirantization can be attested based on the directionality of the variation between the plosive and the fricative, it is not sufficient to argue for the determination of the phonemic status of /x/ in Fa d'Ambô. In some varieties of Brazilian Portuguese, for example, /t/ can be produced as [tʃ], without [tʃ] being conceived as a phoneme in the Portuguese language, despite such a phoneme being performed in sparse contexts. It does not seem, however, to be the case of /x/ in Fa d'Ambô, as there are data indicating that spirantization is not attested and the velar fricative is fully produced, as can be seen in stressed syllables and unstressed final syllables. Such behavior is a possible indication that such phones are not in complementary distribution in the Fa d'Ambô phonological system, although they vary in some words, for this reason corresponding to two phonemes of the language that can alternate or not.

To assess the plausibility of this hypothesis and to determine the contexts in which variation is possible, we evaluate the behavior of [k] and [x] in other sound environments. The distribution of lexical items, according to the vowel quality and the syllabic tonicity in which [k] and [x] are inserted, is shown in Chart 6.³

³ (i) Stressed syllables - ['kisu] 'to discharge,' ['keke:] 'look alike,' ['kɛxa:] 'to complaint,' ['kada] 'each,' ['kɔ'la] 'prisoner work,' ['koma] 'how,' ['kulu] 'dark,' ['xama] 'fish scale,' ['xɔxɔ] 'cormorant,' ['xola] 'glue,' ['xuntulu] 'against.' (ii) Unstressed syllables - [ki'li] 'spoon,' [ke'se] 'to forget,' [kɛ'ledu] 'creed,' [ka'ma] 'to burn,' [kɔ'ral] 'coral,' [kɔ'kjoko] 'branch,' [ku'lu] 'raw,' [boxi'a] 'to wrap up,' [xe'le] 'to believe,' [xɛj'ta] 'to warm up,' [xa'ma] 'to remove the scales off fish,' [xɔxɔ'la] 'to dare,' [xo'le] 'to run,' [xuz'ga] 'to judge.'

Chart 6 – Distribution of [k] and [x] according to the foregoing vowel and syllable stress – Data from Segorbe (2007).

Vowel	<i>Stressed</i>		<i>Pretonic</i>	
	[k]	[x]	[k]	[x]
i	['kisu]	----	[ki'li]	[boxi'a]
e	['keke:]	----	[ke'se]	[xe'le]
ɛ	['kɛxa:]	----	[kɛ'ledu]	[xɛj'ta]
a	['kada]	['xama]	[ka'ma]	[xa'ma]
ɔ	['kɔʎa]	['xɔxɔ]	[kɔ'ral]	----
o	['koma]	['xola]	[ko'kʝoko]	[xo'le]
u	['kulu]	['xuntulu]	[ku'lu]	[xuz'ga]

Source: Authors' elaboration.

Considering the seven oral vowels identified in Fa d'Ambô (BANDEIRA, 2017), we note that, in Segorbe's grammar (2007), [k] and [x] can occur as an onset preceding any oral vowel. When considering tonicity, conversely, [coronal] vowels are not identified in stressed syllables if the previous consonant corresponds to [x]. This constraint is partially extended to long vowels, as long as part of the restrictions also occurs in relation to [coronal] vowels, as shown in Chart 7.⁴

Chart 7 – Distribution of [k] and [x] according to the foregoing long vowel and syllable stress – Data from Segorbe (2007).

Vowel	<i>Stressed</i>		<i>Pretonic</i>	
	[k]	[x]	[k]	[x]
i:	['ki:zu]	----	[ki:'ʎa]	----
e:	[xa'ke:]	----	['pɔke:]	[xe:'se]
ɛ:	['kɛ:tu]	[indulu'xɛ:sja]	[kɛ:'ta]	----
a:	['ka:xa]	['xa:ni]	[ka:'to:]	[xa:'sɛ]
ɔ:	[mindʒi'kɔ:dʒi]	['xɔ:nta]	[kɔ:'ladu]	[xɔ:'da]
o:	[bis'ko:to]	['xo:nde]	[ko:'ko]	[xo:'xoso]
u:	['ku:su]	----	[ku'lu]	----

Source: Authors' elaboration.

⁴ (i) Stressed syllables - ['ki:zu] 'cheese,' [xa'ke:] 'persimmon,' ['kɛ:tu] 'quiet,' ['ka:xa] 'cashier,' [mindʒi'kɔ:dʒi] 'to wait,' [bis'ko:to] 'biscuit,' ['ku:su] 'cross,' [indulu'xɛ:sja] 'indulgence,' ['xa:ni] 'meat,' ['xɔ:nta] 'account,' ['xo:nde] 'when.' (ii) Unstressed syllables - [ki:'ʎa] 'to create,' ['pɔke:] 'because,' [kɛ:'ta] 'quiet/settle down,' [ka:'to:] 'bigaro,' [kɔ:'ladu] 'colored,' [ko:'ko] 'coconut,' [xe:'se] 'to grow,' [xa:'sɛ] 'shorts,' [xɔ:'da] 'to cut,' [xo:'xoso] 'neck'.

Chart 7 shows the distribution of [k] and [x] in relation to long vowels. While [k] is predicted when preceding all long vowels, [x] is restricted to [e:], [ɛ:], [a:], [ɔ:], and [o:]. None of the high and long vowels is thus preceded by plosive or fricative velar consonants in either tonic or pretonic syllables. The [coronal] middle vowels oscillated in relation to the stress and the production of [x] instead. Therefore, [xe:] could be observed only in an unstressed syllable, whereas [xɛ:] was detected in a stressed syllable. In this respect, data presenting the combination between the velar fricative and the previous middle long vowel are rare. For [xe:], for example, the only identified form was [xe:'se] 'to grow,' while items containing the sequence [ke:] were more numerous in the corpus: [xa'ke:] 'khaki,' [ke'ke:] 'to be similar,' ['pɔke:] 'because,' [ʃke:'ve] 'to write,' among others. This similar behavior evidences [xe:], as observed in the data, only in [indulu'xɛ:sja] 'indulgence' and in the future time suffix [sa'xɛ:] (SERGOBE, 2007).

The data shown in Chart 6 and the items in Chart 7 are not able to support the allophony between /k/ and [x] to the detriment of the phonological status of /x/. Even if there is no lexical item for a given context, it is not possible to identify a systematic behavior that corroborates an allophonic relationship between [k] and [x]. The absence of ['xe], [xɛ] and ['xi] in Chart 6 could suggest that, when it is followed by a [coronal] vowel in a stressed syllable, the velar fricative must be produced as a plosive. This does not explain why [ke], [kɛ] and [ki] are produced in unstressed syllables, since [x], as a /k/ allophone in a complementary distribution, would be the expected phone in such environment, whereas [k] would only be produced in stressed syllables. Furthermore, distinctly from the variation between [ka]~[xa] in word-initially pretonics, there is no mention in previous works on Fa d'Ambô (SEGORBE, 2007; ARAUJO *et al.*, 2013; BANDEIRA, 2017) that [k] and [x] may vary in a same word, or in relation to the syllabic position occupied by the sequence [kV] and [xV], where V is equivalent to a non-low vowel.

The same reasoning can be applied to the data shown in Chart 6. Such items do not support a complementary distribution relation. Thus, [xe:] cannot be an allophone of [ke:] because both are identified in unstressed syllables, and [xɛ:] is not an allophone of [kɛ:] because both forms are possible in stressed syllables. This fact, on the one hand, added to the non-occurrence of [k] and [x] preceding the high vowels [i:] and [u:], does not constitute evidence for arguing an allophonic relation between the velar plosive and the fricative in Fa d'Ambô. On the other hand, it does not refute the possibility that /x/ and /k/ are distinct phonemes in that language and, as different phonemes, have a distinct syllabic distribution, justifying the gaps in some combinations.

According to Viaro and Guimarães-Filho (2007), it is common to some linguistic structures to be more recurrent than others in languages. In Brazilian Portuguese (PB), for example, the authors report that not all vowels are productive for forming a CV syllable, given that, while [ʎõ] was not found in a corpus formed by 150,875 words, [kõ] is equivalent to "58% of CV syllables with [õ]" (VIARO; GUIMARÃES-FILHO, 2007, p. 33). Although the palatal lateral is less productive in relation to other consonants in BP, not being found in some syllabic combinations, this factor is not an argument

capable of discarding /k/ as a phoneme of Portuguese. For this reason, it is possible that the gaps identified in Charts 6 and 7 are consequences of an unbalanced distribution of [k] and [x] in face of different vowel qualities. Also, this behavior does not exclude the hypothesis that we are dealing with two distinct phonemes in Fa d'Ambô.

Summarily, due to the methodological issues imposed by the limitation of the corpus, the analysis of synchronic data of Fa d'Ambô emphasizes a paradox in delimiting the phonological status of the velar fricative in this language. Few are the minimal pairs that support the opposition between /k/ and /x/, and even when they are found, these pairs are circumscribed to a specific sound environment and, therefore, can generate homonymy by neutralizing such phones. This factor does not constitute a substantial argument to define the velar fricative as a phoneme in Fa d'Ambô. On the contrary, except for the alternation between [ka]~[xa], no systematicity was observed to ensure a complementary distribution between the plosive and the fricative, which discards a relation of allophony. Finally, the possibility of a freely neutralization between the velar plosive and the velar fricative is also not supported by data, since the alternation [kV]~[xV], where V refers to a non-low vowel, was not attested in the analyzed items, neither in stressed nor in unstressed syllables.

The establishment of the phonological status of /x/, therefore, proves to be a complex issue that demands not only access to a larger number of spontaneous speech data, but also expresses the pertinence of the analysis of controlled speech data. Therefore, to solve this issue empirically, it is necessary to expand the corpus and assess controlled contexts, as well as sociolinguistic factors. This expansion is important to verify whether the variation of [k] into [x] occurs only in a specific context, if the neutralization between such segments can be detected indiscriminately and/or due to independent variables, and if in fact we are dealing with two distinct phonemes.

Despite the aforementioned limitations, we assume, in this study, the existence of /x/ as a phoneme of Fa d'Ambô. Thus, although we agree that it is necessary to expand the corpus for the development of the arguments presented in this section, we assume that the scarcity of minimal pairs that distinguish /k/ from /x/ is not a determining argument to rule out the possibility that such sounds are distinct phonemes in Fa d'Ambô, since in the data with which we work, even though scarce, the opposition does exist. Additionally, when we change the focus from the sound opposition to the analysis of /x/ in contrast to other voiceless fricatives of the language, we identify more minimal and analogues pairs that corroborate the phonemic status of the velar fricative, as shown in Chart 8.

Chart 8 – Minimal and analogous pairs with fricatives /x/, /s/ and /f/ in Fa d’Ambô.

	/x/	/s/	/x/	/f/
<i>Atonic</i>	[xa'ma] ‘to take the scales off the fish’	[sa'ma] ‘to call’	[xa'la:] ‘to shut up’	[fa'la] ‘to grab’
	[xo'solo] ‘nodule’	[so'solo] ‘hippopotamus’	[xo:'lo] ‘earthworm’	[fo:'lo:] ‘to deflower’
	[xo:'da] ‘to wake up’	[so:'da] ‘only’	['xa:ta] ‘class’	['fa:ta] ‘to sin’
<i>Tonic</i>	['xala] ‘face’	['sala] ‘room’	['xa] Mode Particle	['fa] ‘to speak/to talk’
	['xalu] Typical food	['salu] ‘salt’		
	['xa] Mode Particle	['sa] ‘to bake’		

Source: Authors’ elaboration.

Assuming /x/ as a phoneme, we verify that the oscillation between [k] ~ [x], characterized by the spirantization of the plosive, corresponds to a neutralization phenomenon in Fa d’Ambô. Neutralization is a process by which two or more phonemes, opposed within a specific sound environment, no longer present phonemic contrast in another environment. Then, the oscillation between /k/ and /x/ results from the loss of contrast between these two phonemes, as /k/ can be neutralized into [x] before [a] in pretonic syllables.

To summarize, based on the discussion of this section, the arguments that validate the phonemic status of /x/ are synthesized below (i - x).

- (i) there are minimal and analogous pairs that, although rare, are capable of delimiting the opposition between /k/ and /x/;
- (ii) there are opposing pairs that define the phonemic status of /x/ in relation to /s/ and /f/;
- (iii) /x/ and /k/ occur in many identical contexts of vowel and stress;
- (iv) /k/ can be neutralized into [x] before the low vowel [a] in pretonic syllables;
- (v) however, there is no neutralization of /x/ into [k] in the same context;
- (vi) /k/ remains as a plosive in stressed syllables regardless of the next segmental context;
- (vii) and /x/ remains as a fricative in stressed and unstressed syllables regardless of the following sound environment;
- (viii) a sound regularity that explains the absence of some combinations with [x] and [k] as a result of a complementary distribution process could not be identified;
- (ix) the variation [kV]~[xV], where V equals a non-low vowel, was not attested neither in a stressed nor in an unstressed position;
- (x) the CV combination between [x] and [k] and the vowels of Fa d’Ambô is asymmetric, indicating that not every CV syllable is equally productive in the language (VIARO; GUIMARÃES-FILHO, 2007). Thus, the gaps identified

in relation to [xe:], [xu:], [xi:], among other CV structures, suggest that such syllables are not as common as [ke:], [ku:], [ki:]. That is, the gaps do not indicate allophonic relations, but reflect the productivity of each combination.

We conclude, then, that Fa d'Ambô has three velar phonemes, two plosives /k/ and /g/ (BANDEIRA, 2017), and one fricative /x/, as shown in Chart 9.

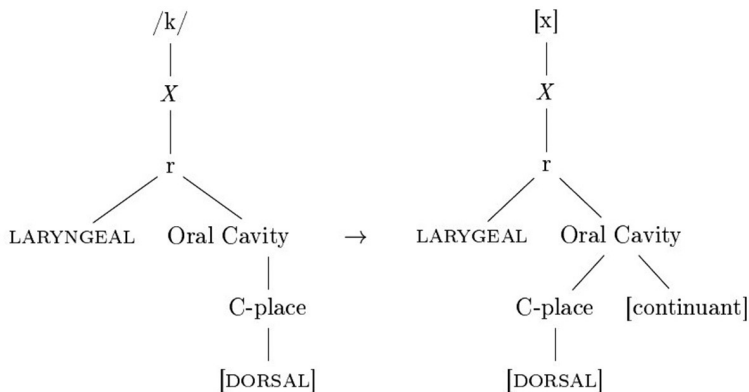
Chart 9 – Velar Consonants in Fa d'Ambô.

Licensed Features	x	k	g
<i>Place of Articulation</i>			
[continuant]	+	-	-
[DORSAL]	+	+	+
<i>Laryngeal Node</i>			
[voice]	-	-	+

Source: Authors' elaboration.

As elucidated by Chart 9, velar plosives are not valued for the [continuant] feature and are distinguished by the [voiced] feature. The neutralization of /k/ into [x] can be then explained by the association of the [+continuant] feature in its configuration, as represented in Figure 1.

Figure 1 – Geometry representing the neutralization of /k/ into [x] in Fa d'Ambô.



Source: Author's elaboration.

Supported by the geometry represented in Figure 1, we found that the neutralization of /k/ into [x] arises from the association of the [+continuant] feature with the class node of the oral cavity, causing /k/ to be spirantized and, as a result, produced as [x]. The

reverse process, however, was not observed. Therefore, [xa'ma] ‘to remove the scales off fish’ was verified only in this form, corroborating the existence of the phoneme /x/ in the language and delimiting the process as a neutralization whose target is /k/ (/k/ → [x]).

According to *Bandeira (2017)*, the velar fricative is a sound that distinguishes Fa d’Ambô from its sister languages and even from its ancestor language, the Proto-Creole of Gulf of Guinea. Thus, we can hypothesize that spirantization is also a diachronic phenomenon and corresponds to one of the processes responsible for the speciation of Fa d’Ambô. It is then possible that spirantization, in addition to characterizing the neutralization of the velar plosive in the synchronic data of Fa d’Ambô, may correspond to a process of sound change during the speciation of the language, resulting in the establishment of /x/ in the Fa d’Ambô phonological inventory.

The spirantization of *kPGG >> x FA

By reconstructing the proto-phonemes of the Proto-Creole of Gulf of Guinea, *Bandeira (2017)*, using the historical-comparative method, attested the existence of *k in onset (*BANDEIRA, 2017*). According to the author, the reconstruction of *k is justified by the systematic correspondences between *k and /k/ in Santome (ST), Lung’Ie (LI), and Angolar (AN), and between *k and /k~/x/ in Fa d’Ambô, whereas in this language “the velar plosive consonant *k varied to a fricative but also to velar consonant /x/” (*BANDEIRA, 2017, p. 280*), as shown in Chart 10.

Chart 10 – Reflexes of *k in Santome (ST), Fa d’Ambô (FA), Lung’Ie (LI) and Angolar (AN) (*BANDEIRA, 2017*).

PGG	ST	FA	LI	AN	Gloss
*kaso	[ka'so]	[xa'so]	[ka'so]	[ka'eo]	‘dog’
*kabila	['kabila]	['xaba]	['kaba]	[ka'kaba]	‘goat’
*kore	[ko'le]	[xo'le]	[ko're]	[ko'le]	‘to run’
*kurtu	['kutu]	['ku:tu]	['kutu]	['kutu]	‘short’
*kae	['kje]	['kae]	['kje]	['kje]	‘to fall’

Source: Author’s elaboration.

Chart 10 shows that *k has the velar plosive as a reflex, a correspondence attested in data from the four daughter languages (k = k = k = k), or even a velar fricative, as seen in Fa d’Ambô (k = x = k = k). As only Fa d’Ambô differs from the other languages, it is possible to assume that there was a sound change characterized by the lenition of *k throughout the development of this language and, therefore, the velar fricative did not constitute a proto-form of the PGG.

Considering *k as a proto-phoneme of PGG and using the sets of cognates shown in Chart 10, we infer that spirantization, in addition to being synchronously attested, is one of the diachronic processes responsible for promoting the change of *k PGG into /x/ FA during the course of the formation of Fa d’Ambô. The regularity of this phenomenon can be seen in relation to different vowel qualities (Chart 11).

Chart 11 – Sound correspondences between *k PGG » /x/-/k/ FA

	V			v:		
	*k PGG	/x/ FA	Gloss	*k PGG	/x/ FA	Gloss
i	*kĩNta fêla	[ˈkĩta ˈfêla]	‘Thursday	----	----	----
e	*kele	[xeˈle]	‘to believe’	*klese	[xeˈse]	‘to grow’
ɛ	*keNta	[xẽˈta]	‘to heat’	----	----	----
A	*kasu	[ˈxasu]	‘miserly’	*karni	[ˈxa:ni]	‘meat’
ɔ	*kəbɔ	[ˈxəbɔ]	‘hole’	*kɔrdɔ	[ˈxɔ:dɔ]	‘rope’
o	*kore	[xoˈle]	‘to run’	*klosu	[ˈxo:su]	‘core’
u	*kuru	[ˈkulu]	‘dark’	*klupa	[kuˈpa]	‘to blame’

Source: Adapted from Bandeira (2017).

From the 108 sets of cognates collected and organized by Bandeira (2017), we observe systematic correspondences between *k and /x/, which support the lenition of the plosive into fricative. In contrast to the PGG proto-forms proposed by Bandeira (2017), in the lexical items of Fa d’Ambô we note that, except for *kĩNta fêla » [ˈkĩta ˈfêla] ‘Thursday,’ *kuru » [ˈkulu] ‘dark,’ and *klupa » [kuˈpa] ‘to blame,’ *k is spirantized during the speciation of Fa d’Ambô, generating /x/ in the phonological system of this language. As a consequence, spirantization promoted the sound change of *k into /x/ without it culminating in a complete substitution of one form for the other, since as discussed above in the section **Phonotactic distribution and the variation between /x/ and /k/** and shown in Chart 8, both /k/ and /x/ are attested in the phonological inventory of Fa d’Ambô.

Diachronically, spirantization is a possibly remote phenomenon to the deletion of the liquid consonants *r and *l and the consequent compensatory lengthening in Fa d’Ambô (BANDEIRA, 2017). This is because /x/ may precede both short and long vowels. Compensatory lengthening is a phenomenon triggered by the deletion of a segment that has its temporality conserved in tier X as a result of the temporal lengthening of one of the adjacent tautosyllabic segments (WETZELS, 2007).

In Fa d’Ambô, such process is analyzed by Bandeira (2017). According to the author, vowel lengthening works as a strategy to repair the timing of syllables that have the liquid eliminated, a process that results in the establishment of long vowels in the speciation of Fa d’Ambô (BANDEIRA, 2017). This interpretation is in accordance with the data in Chart 11, whereby we verify that the items in Fa d’Ambô carrying v: are

associated with a proto-form that presents *r or *l as the second element of a complex onset or as a coda, as exemplified by *karni » ['xa:ni] ‘meat’ and *klese » [xe:'se] ‘to grow.’ Thus, it is not possible to conjecture that the plosive maintenance on items such as *klupa » [ku:'pa] ‘fault’ (see Chart 11) is related to the presence of *l as the second segment of a complex onset in PGG, because, even in proto-forms presenting the consonant cluster *kl, /x/ is identified as a reflex in Fa d’Ambô.

Considering items such as *kinta fEla » ['kīta 'fela] ‘Thursday’, *kuru » ['kulu] ‘dark,’ and *klupa [ku:'pa] ‘to blame,’ as well as the possibility of the structures *CCV and *CVC of PGG constituting an obstacle for spirantization, as these syllables had already been modified before the application of the process in question, we assume that spirantization may have been underprivileged due to the quality of the subsequent vowel, avoiding items whose contiguous vowel is high. This fact would be in accordance with the discussion presented in the section **Phonotactic distribution and the variation between /x/ and /k/** because it explains part of the gaps found in the synchronic distribution of the syllables [xi] and [xu] (see Chart 6), which are attested only in a few data, and the syllables [xi:] and [xu:] (see Chart 7), not verified in the analyzed corpus. Furthermore, this can still be reiterated when we analyze the few data with [xu] identified in the sets of cognates established by Bandeira (2017) as opposed to the reconstruction proposal of the PGG in Chart 12.

Chart 12 – Sound correspondences between *k PGG and /x/ FA

	*k PGG	/x/ FA	Gloss
u	*buka	[xu'a]	‘to search’
u	*roNka	[lõxu'a]	‘to snore’

Source: Bandeira (2017).

In the sets of cognates, words with the syllables [xi], [xi:] or [xu:] were not attested, but there are two items that present [xu]: [xu'a] ‘to seek’ and [lõxu'a] ‘to snore.’ By comparing these words with their respective protoforms, we observe that spirantization possibly occurred before other internal changes that affected [xu'a] ‘to seek’ and [lõxu'a] ‘to snore.’ The item *buka » [xu'a] ‘to search’ thus suggests that first there was the spirantization *ka » xa, only for a later apheresis of *b, and, finally, metathesis of *x. The sequence [xu], in this case, is the outcome of a series of processes and not only a direct result of spirantization of *k that was followed by *a in the protoform. Similarly, in *roNka » [lõxu'a] ‘to snore,’ *k is contiguous to *a in the PGG, being spirantized into *x before the epenthesis of [u], which results in the sequence [xu] in Fa d’Ambô.

In summary, the data extracted from cognate sets indicate *u and *i as sound environments that inhibit spirantization in Fa d’Ambô speciation. Such condition reflects in the synchronous productivity of the sequences formed by the velar fricative and high vowels. However, this segmental constraint does not appear to be active in

the synchronic data, and it is common to observe words with a Spanish etymology, therefore incorporated after the development of Fa d’Ambô from the PGG, consisting of [xu], such as [xu’ez] ‘judge,’ without suffering any sound adaptation that breaks such sequence.

Other words of Spanish etymology, according to the data of Segorbe (2007), are incorporated via loanwords with the maintenance of the velar fricative, such as [ɛmba’xada] ‘embassy’ and [ɛmbaxa’do] ‘ambassador,’ suggesting that /x/ composes the phonological inventory of Fa d’Ambô since the fricative is not reinterpreted by speakers as another fricative of the language. According to Paradis (1996 *apud* BANDEIRA, 2013), loanword adaptation is governed by the phonological rules of the language into which the word is incorporated. Therefore, if /x/ was not part of the Fa d’Ambô phonological structure, it would be expected that this phone be adapted in some way, which is not the case here. For this reason, although the emergence of /x/ cannot be attributed to the Spanish influence on Fa d’Ambô (ARAUJO *et al.*, 2013), the words of the Spanish etymology integrated via loanword after the Fa d’Ambô speciation conserve the /x/.

The data discussed in Charts 11 and 12 suggest that even though spirantization configured a relatively regular change in the development of Fa d’Ambô, it was not applied in all words of languages whose context was favorable. In Chart 13, among the set of cognates analyzed, we list all cases in which the plosive was preserved in the corpus.

Chart 13 – Sound correspondences between *k PGG e /k/ FA

*k PGG	/k/ FA	Gloss
*kae	[ka’e]	‘to fall’
*kese	[ke’sɛ]	‘to forget’
*kɛma	[’kama]	‘to burn’
*kuma	[’koma]	‘like’
*kolo	[’kɔl]	‘color’
*iSka	[’i:ka]	‘bait’
*ploke	[’pɔke:]	‘because’
*skɛdu	[’skɛdʒi]	‘left’
*sikleve	[ʃke:’ve]	‘to write’

Source: Bandeira (2017).

Chart 13 shows that, even in a lower quantity, *k from PGG remained as plosive in some words of Fa d’Ambô, regardless of the sound environment being favorable to the production of spirantization, as in *kae » [ka’e] ‘to fall’ and in *kolo » [’kɔl] ‘color.’ The vowels following *k are *a and *o. Consonantal encounters composed of

alveolar fricative + velar plosive (sk) seem to favor the maintenance of the velar plosive similarly if the alveolar fricative is not associated with the coda.

In this regard, Bandeira (2017), referring to the *fa do vesu*, a language game of Fa d'Ambô, suggests that /s/ in /sk/ sequences is in another syllable or, at least, not considered as part of the onset, as items such as “[’skwɛla] ‘school’” are changed to “**su.pu.kwe.la**” with the insertion of [u] between /sk/ (ARAÚJO; AGOSTINHO, 2014, p.274). In this context and based on the data in Chart 10, we hypothesize that the sequence *sk may have constituted an unfavorable sound environment for spirantization. Following this reasoning, items such as *skedu » [’skɛdʒi] ‘left’ and *sikleve » [ʒke:’ve] ‘to write,’ in which the apocope of *i is possibly prior to the spelling process, maintain the velar plosive.

The maintenance of *sk in Fa d'Ambô is reflected in the synchronous data of the language. It is common to observe items such as [’ska:ɲi] ‘scorn’ and [skla’ma] ‘to exclaim’ (SEGORBE, 2007). If we focus on data in which the encounter between such segments occurs when the fricative is in coda and the plosive is equivalent to the first element of a simple onset, then the velar fricative [x] is possible, although little attested. The maintenance of the plosive is more common: [desku’da:] ‘to neglect,’ [pas’ke:ve] ‘pen,’ [kiska’belu] ‘small bench,’ [dʒiskatu’ja] ‘problem,’ among others. We thus note that the sequence alveolar fricative + velar plosive, independently of the syllabic licensing of such segments, whether in coda or onset, seems to be a favorable context for the maintenance of the velar plosive, and may not correspond to a change environment in the speciation of Fa d'Ambô.

Such conclusion is reinforced when we observe that the word ‘fisherman’ has two currently possibilities of pronunciation: [pisxa’do] ~ [piska’do] ‘fisherman.’ As demonstrated, [x], in this example, may be the outcome of a synchronic spirantization process in Fa d'Ambô, characterized, as discussed in the section **Phonotactic distribution and the variation between /x/ and /k/**, by the change of /k/ into [x] in pretonic syllables when the following segment is [a]. Words related to [pisxa’do] ~ [piska’do], where /ka/ is in a stressed syllable, do not show such oscillation, as exemplified by [pis’ka] ‘to fish’ and [pis’kadu] ‘fish,’ confirming the maintenance of the velar plosive in case an alveolar fricative precedes it.

Through the analysis of the sets of cognates collected by Bandeira (2017), we assume that spirantization, in addition to being a synchronic phenomenon in Fa d'Ambô, configures a process of change in the speciation of this language. This diachronic phenomenon resulted in the establishment of /x/ in the phonological system of Fa d'Ambô. This phoneme is one of the structural features that distinguishes the language spoken in Ano Bom Island from the other Creole languages in the Gulf of Guinea. However, despite the fact that spirantization enabled the emergence of a new phoneme in Fa d'Ambô, the process was not applied to all items of the PGG along the development of Fa d'Ambô, since some sound environments proved unfavorable to the lenition of *k. For this reason, Fa d'Ambô also maintained /k/ in its inventory, which appears to be more synchronously productive in environments where /x/ is not observed.

Final considerations

In this study, we investigated the phonological status of the velar fricative in Fa d'Ambô through the phonotactic behavior of [k] and [x]. Based on the phonological reconstruction of the Proto-Creole of Gulf of Guinea (PGG) carried out by Bandeira (2017), we found that the process of spirantization of the plosive *k is the phenomenon responsible for altering this protoform in some lexical items of Fa d'Ambô. It becomes /x/, a segment incorporated into the phonological inventory of the language. In such alteration, which is also synchronously productive, it is possible to observe a modification of the manner of articulation of [x] in contrast to *k or [k]. From plosive, it is performed as a fricative, indicating, therefore, the alteration between a less sonorous segment towards a more sonorous one, a phenomenon commonly addressed as consonant weakening.

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BALDUINO, A; BANDEIRA, M. O estatuto fonológico da fricativa velar no fa d'ambô. *Alfa*, São Paulo, v. 65, 2021.

- *RESUMO: Neste artigo, discutimos o estatuto fonológico de /x/ no fa d'ambô (fa), língua crioula de base portuguesa falada em Ano Bom. Mediante a análise de 270 itens lexicais (SEGORBE, 2007) e de 108 conjuntos de cognatos que contrastam o fa d'ambô com o Protocrioulo do Golfo da Guiné (BANDEIRA, 2017), observamos que /x/ pode ter entrado no fa d'ambô em decorrência de um processo de espirantização, demarcado pela lenição de *kPGG em xFA, e que, atualmente, há indícios de que /x/ e /k/ constituem fonemas distintos nessa língua. Com base na distribuição fonotática de /k/ e /x/, observamos a ocorrência de um processo de neutralização em fa d'ambô, em que /k/ é realizado como [x] ao preceder a vogal baixa [a] em sílabas pretônicas, como em [pɪsxa'do] ~ [pɪska'do] 'pescador', porém permanece como oclusiva em sílabas tônicas, como em [pɪs'ka] 'pescar'. A neutralização de /k/ em [x] é, assim, um processo sincrônico do fa d'ambô, sendo caracterizada pela manutenção do traço [dorsal] e pela respectiva associação do traço [contínuo] à oclusiva (CLEMMENTS, 1996), traço responsável pela especificação diacrônica de *k em /x/ e por anular a distinção sincrônica entre /k/ e /x/.*
- *PALAVRAS-CHAVE: Fa d'ambô. Estatuto Fonológico. Língua Crioula de base portuguesa. Espirantização.*

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