Playing with Language:
Three Language Games in the Gulf of Guinea

Ana Lívia Agostinho
Universidade Federal de Santa Catarina

Gabriel Antunes de Araujo
University of Macau; Universidade de São Paulo

We present a description and an analysis of three related language games in Africa’s Gulf of Guinea: Fa d’Ambô’s Fa do Vesu, Lung’le’s Faa di Vesu, and São Tomé and Príncipe Portuguese’s P-language. We show how these language games can be used to investigate the linguistic features of their main languages and as learning resources for second language learners. First, we defend the common origin of these language games and that they emerged from contact with Portuguese settlers’ Língua do Pê’s varieties. Second, we discuss phonological issues, such as syllable structure, focusing on the loci of onglides, offglides, syllabic nasals, and word prosody. Finally, we discuss how these ludlings can help speakers, learners, and linguists perceive phonological properties as well as the contribution of describing and analyzing language games for language documentation.

1. Introduction

The aim of this text is to present a description and an analysis of three related language games in two African endangered Portuguese-based creoles, Fa d’Ambô (FA) and Lung’le (LI), and São Tomé and Príncipe’s Portuguese (PSTP). We will show how these language games can be used to investigate linguistic features and as learning resources. Among the languages of the Gulf of Guinea, there are four Portuguese-lexified creoles with a shared origin: Santome or Forro (ISO code 639-3: 2007 cri), Angolar (aoa), Lung’le or Principense (pre), and Fa d’Ambô (fab). The first three languages are spoken in the Democratic Republic of São Tomé and Príncipe, where they have national status (Agostinho 2015, 2016; Bandeira et al. 2019; Ferraz 1979; Gunther 1973; Lorenzino 1998; Maurer 1995; Schuchardt 1888; Zamora 2010). Fa d’Ambô is spoken on the islands of Annobón and Bioko in the Republic of Equatorial Guinea (Zamora 2010). These four vernaculars emerged in the 16th

1We are grateful to Stuart Davis, Michael Becker, and Larry M. Hyman for the discussions of the data presented in this paper. We also thank two anonymous reviewers for their comments and suggestions. Ana Lívia Agostinho thanks São Paulo Research Foundation (FAPESP; grant 2011/06107-6), Brazilian National Council for Scientific and Technological Development (CNPq; grant 200519/2019-0), Programa de Pós-Graduação em Linguística from Universidade Federal de Santa Catarina, and University of Macau. Gabriel Antunes de Araujo thanks the University of Macau (grant SRG-2019-00153-FAH), Universidade de São Paulo, and CNPq (grant 310465/2016-5).

2Codes for the representation of names of languages – Part 3: Alpha-3 code for comprehensive coverage of languages. See https://www.iso.org/standard/39534.html.
century and are the result of contact between the Portuguese settlers and African
slaves, speakers of Benue-Congo languages. Currently, the four languages, though
related, are unintelligible to each other. Furthermore, Portuguese has been the official
language of São Tomé and Príncipe since 1975 and is presently spoken by more than
98% of the population (Araujo 2020). Fa d’Ambô is a regional language, widely
spoken in Annobón, despite Spanish being the official language of Equatorial Guinea.

During fieldwork in the Gulf of Guinea, three language games were identified:
one in Portuguese, one in FA, and one in LI, all related to the Portuguese Língua
do Pê (P-language). Therefore, we will discuss these three ludlings. According to
Laycock (1972: 61), “A ludling is […] the result of a transformation or series of
transformations acting regularly on an ordinary language text, with the intent of
altering the form but not the content of the original message, for purposes of conceal-
ment or comic effect”. Bagemihl (1988) argued that language games are alternate
languages that exist alongside natural languages, manipulating their natural struc-
ture. Davis (1993: 1980) also posited that “these fairly widespread language play
phenomena alter the phonological forms of words to disguise what they are”. Ad-
ditionally, Bagemihl (1995) characterized ludlings as linguistic systems that utilize
various forms of non-concatenative (and occasionally concatenative) morphological
manipulation. Thus, a ludling shares almost all of its linguistic domains with its host
language except for the morphologic domain, for which it has an alternate.

Language games are a “fairly widespread language play phenomenon” (Camp-
bell 2020; Davis 1993). They are semantically empty, which means that a string of
language games shares the same meaning as their equivalent in the regular language.
Additionally, Bagemihl (1995: 697) stated that language games are quantitatively but
not qualitatively different from natural language processes. Language games may be
used as evidence for phonological concepts such as the syllable and the position of
elements within the syllable (Araujo & Agostinho 2014; Botne & Davis 2000; Camp-
bell 2020; Davis 1993; Davis & Hammond 1995; Vaux 2011). Furthermore, Sherzer
(1970: 253) noted that “a linguist operating with a sociolinguistic perspective is con-
cerned with many uses of language, including such phenomena as linguistic play and
linguistic games”. According to him, “these phenomena are of interest not only to the
anthropologist studying the place of speaking in a culture but also to the linguist in-
states that “[m]ore research on ludlings in general is in fact needed” while questioning
how “diphthongs and long vowels [are] treated in iterative infixing ludling”. We also
provide an analysis of the anchor points targeted by the games, which further shows
that the set of anchor points within this type of ludling is restricted (Vaux 2011).
However, the LI game shows two different anchor points that can be targeted simul-
taneously. Therefore, this paper contributes to the field of language games, specifically
centering the phonology of infixing ludlings.

All data on FA used in this paper was collected by Ana Lívia Agostinho and Alfredo Christofoletti in
Annobón Island in 2012. The data from LI and PSTP were collected by Ana Lívia Agostinho in 2014 and
2016 during field trips in Príncipe and São Tomé.
The two most common types of language games, as pointed out by Botne and Davis (2000), are the transposition of phonological constituents (usually syllables) and the addition of phonemes at one or more locations within the word. In this paper, we will concentrate on this second type, such as the one found in Portuguese, which features language games with templatic morphology, called Língua dos Pês (Ps-language) in Portugal and Língua do Pê (P-language) in Brazil. In this game, a [-pV] syllable is inserted after or before a syllable, while the stress falls on each non-ludling syllable (see §2 for details). As Portuguese is the lexifier language of FA and LI, the language games found in these languages are related through their shared linguistic features and history.

This paper is organized as follows. In §2, we present evidence that shows for the first time that there is a related P-language in PSTP that is different from those varieties found in Portugal or Brazil. In §3, we analyze the language games in LI and FA. Following, in §4, we discuss some phonological issues in LI and FA for which language games made resolution possible. §5 highlights the possibilities of using language games as pedagogical tools and instruments for improving linguistic analysis and language acquisition. In §6, we present some final remarks.

2. Língua do Pê in São Tomé and Príncipe Portuguese

There are related language games in European and Brazilian Portuguese that are played by children and are usually learned from other children or from their family. Adults only seem to speak them with children, so language games can be seen as an instance of “age grading” (Chambers 2003). Bagemihl (1995) argues that ludlings have a “small speaker population, and uncertain acquisitional process”. Simultaneously, ludlings can have a wide range of functions, such as language disguise and mere language play (Frazier & Kirchner 2011). In Portugal, a ludling called Língua dos Pês (Ps-language) inserts a [-pV] ludling syllable after each syllable, while the stress falls on each non-ludling syllable. In Brazil, in turn, there are three varieties of Língua do Pê (P-language), as described by Abaurre (1979) and Guimarães and Nevins (2009),⁴ one of which is also found in Portugal:

(1) Base Língua do Pê, Variety 1 Brazil⁵ Gloss
   a. si.ˈda.de si.pi.da.pa.de.ˈpe ‘city’
   b. fe.ˈlis fe.pe.lis.ˈpis ‘happy’

Base Língua do Pê, Variety 2 Brazil Gloss
   a. si.ˈda.de pe.si.pe.da.pe.ˈde ‘city’
   b. fe.ˈlis pe.fe.pe.ˈlis ‘happy’

Base Língua do Pê, Variety 3 Brazil Gloss
   a. si.ˈda.de si.pi.da.pa.de.ˈpe ‘city’
   b. fe.ˈlis fe.pe.li.ˈpis ‘happy’

⁴We adapted the data provided by the authors to the IPA.
⁵This variety is also found in Portugal.
In short, variety 1 inserts a harmonic syllable beginning with a bilabial unvoiced consonant and a copied rhyme [-pV(C)] after each syllable and stresses each ludling syllable. In this game, the target is the rhyme, i.e., the nucleus and the coda altogether. Variety 2 inserts an unstressed ludling [pe-] syllable to the left of each syllable, while the stress remains as in the original. The ludling syllable is aligned to the left of the foot. Additionally, variety 3 inserts a harmonic syllable [-pV] after each syllable, where V is a copy vowel. Different from variety 1, in this ludling, the material in the original coda is attached to the inserted syllable, and each new syllable is stressed. Varieties 1 and 3 align the stressed ludling syllable to the right of the foot, while variety 3 alone targets the nucleus, moving the coda constituents to the game syllable. In São Tomé and Príncipe’s Portuguese, we documented the following variety of Língua do Pê.

<table>
<thead>
<tr>
<th>Base</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. si.'da.de</td>
<td>si.pi.da.'pa.de</td>
</tr>
<tr>
<td>b. fe.'lis</td>
<td>fe.pe.li.'pis</td>
</tr>
</tbody>
</table>

This ludling inserts CV(C) syllables with [p] as an onset and a copy vowel (copied from the left syllable) as the nucleus, [-pV], after every syllable that is not an unstressed final syllable. Thus, the game targets every syllable minus the final unstressed one as anchor points (Vaux 2011). Therefore, the rhyme is seen as a unit, whereas it is copied, and all the material in the coda is moved to the new syllable.

<table>
<thead>
<tr>
<th>Base</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 'ga.to</td>
<td>ga.'pa.to</td>
</tr>
<tr>
<td>b. 'mar</td>
<td>ma.par</td>
</tr>
<tr>
<td>c. ka.'fe</td>
<td>ka.pa.fe.'pe</td>
</tr>
</tbody>
</table>

As can be seen from the data in (2) and (3), São Tomé and Príncipe’s Portuguese language game is very similar to the Brazilian variety 3. The only difference between the Brazilian variety 3 shown in (1) and PSTP is that in the latter, the final unstressed syllable does not carry a ludling syllable (3a).

3. Language games in the Gulf of Guinea creole languages: Fa do Vesu and Faa di Vesu

In this section, we will discuss a language game in FA called Fa do Vesu and a game in LI called Faa di Vesu, literally meaning ‘verse language’. We will consider the word-prosodic system of both languages as having a privative H/Ø tone system, in which the /H/ is culminative and non-obligatory, as proposed by Agostinho and Hyman (2021) for LI, incorporated through stress-to-tone alignment in the words of Portuguese origin. One of the main evidences for this analysis is that long vowels

---

6The transcription of Língua do Pê does not account for the variation of the final unstressed vowels in Portuguese; therefore, we transcribed it as [e, o].

7Words of African origin and non-nominal words can be all-Ø (cf. Agostinho & Hyman, 2021).
contrast within the same syllable in both languages (modified from Agostinho & Hyman 2021):

(4) Protoform     Fa d’Ambô    Lung’le    Phonetic       Gloss
      (cf. Bandeira 2017) output
a. *plɛ.tu     peɛ.tu     peɛ.tu     [pɛːtu]       ‘black’
b. *per.tu     peɛ.tu     peɛ.tu     [pɛːtu]       ‘close’

Long vowels can have phonetic rising or falling tones depending on the position of the H, and are the result of consonant cluster simplifications from the proto-creole of the Gulf of Guinea (cf. Agostinho & Hyman 2021; Bandeira 2017; Traill & Ferraz 1981). According to Agostinho and Hyman (2021), “since CVV and CVV are contrastive and synchronically unpredictable, the location of the H tone must be marked underlingly”⁸. Speakers of both languages are aware of this contrast, and it can also be seen in the language game outputs (see examples 5h-i for FA and 8c-d for LI).

3.1 Fa do Vesu (Annobón Island) FA is a Portuguese-based creole language spoken mainly on Annobón Island and also in Bioko, Equatorial Guinea, where Spanish is the official language. Fang (fan) is the mother tongue of 85% of the population (Eberhard et al. 2019) in Equatorial Guinea. Bube (bvb) is also widely spoken in Bioko, where Pichi (fpe; an English-based creole) serves as a lingua franca (Steien & Yakpo 2020). However, speakers of Fa d’Ambô are usually bilingual in Spanish and generally are not speakers of other African languages.

From its discovery until 1778, Annobón Island was a Portuguese colony (Araujo et al. 2013). Following, from 1778 until 1968, Annobón belonged to Spain, and since its independence in 1968, it has been part of Equatorial Guinea. Although the Portuguese colonization of the island of Annobón Island was inconsistent, linguistic and cultural factors – one represented by FA and ceremonial languages and the other by Christian culture – are unequivocal proof not only of the relationship between these elements and the Portuguese world but also of the survival of characteristics specific to Portuguese culture on Annobón Island (Araujo et al. 2013). The authors have shown that studying the languages of Annobón Island is an opportunity to increase understanding of creole languages in general, the origin of the Gulf of Guinea Proto-Creole, and the preservation mechanisms of semi-crystallized varieties in particular.

The language game in FA is used among children and the speakers are very proficient, being able to hold conversations and tell stories in Fa do Vesu. As described by Araujo and Agostinho (2014), the language game in FA inserts CV(C) syllables with [p] as the onset and a copy vowel as the nucleus [-pV]. This [-pV] is inserted after the syllable of the base, except for word-final toneless syllables, where the insertion is optional. Whenever there is a coda in the base, it will appear as a coda only in the inserted syllable, as in PSTP’s ludling. The tone falls on the inserted syllable that follows the original H. Thus, the variation in the term nóvu ‘new’, which can be realized

⁸We will not address the issue of whether these languages also have metrical constituency.
as *nopóvu* or *nopóvupu* in Fa do Vesu (5a), is only possible in regular words with penultimate H (cf. Araujo & Agostinho 2014). Otherwise, no variation is possible, as in (5b). Thus, Fa do Vesu’s iterative infixation targets all syllables but is optional for the final syllable if it does not have an H (see Yu 2007 for similar cases). The H is an anchor point (Vaux 2011), as there is no variation with the final H.

(5) Base Ludling Gloss
---
a. nóvu nopóvu(pu) ‘new’
b. amú apamupú 1SG
c. nó póró 1PL
d. sàngì sapángì(pì) ‘blood’
e. xabál xapabápál ‘horse’
f. wáŋ wapáŋ ‘one’
g. xáŋ xapáŋ ‘house’
h. pečtu pepecutu(pu) ‘black’
i. pečtu pepecutu(pu) ‘close’
j. ᱞda ᱞpudapa ‘to walk’

Thus, words with final H, like *amú* 1PS, can only be realized as *apamupú* in the ludling; otherwise, the H would be allocated either in an inserted syllable that does not follow the original H syllable, *apámu*, or kept in the original syllable, *apamú*, which is also ungrammatical. Araujo and Agostinho (2014: 277) have shown that in cases like (5i), where there is a word that contains a syllabic nasal [ŋ] without a place of articulation, an epenthetic vowel will be inserted only in the ludling syllable and not in the syllabic nasal syllable itself. All syllabic nasals will have their own ludling syllable. The syllabic nasal will always be [ŋ] because it will assimilate the place of articulation of [p], the ludling consonant. That being said, it is ungrammatical to have an [ŋ] before a [p] or a non-realization of a ludling syllable (*ŋ pundapá, *ŋdapá*). This explanatory insight was only possible with the help of the ludling.

Fa do Vesu offers evidence for the rhyme constituent when it makes coda elements visible to the application of the game (CVC → CV.pVC), copies long vowels (CVV → CV.pVV), pairs onglides within the onset (CGV → CGV.pV) and offglides within the coda (CVG → CV.pVG), and does not allow syllabic nasals to form syllables without proper resyllabification (N → NpV; Araujo & Agostinho 2014). Long vowels maintain their tonal contrast in the language game (5h-i). Because FA is a language spoken in a former Spanish colony, one may suggest that some related Spanish language games could be the origin of Fa do Vesu. Although Annobón was a Spanish colony after 1778, Araujo and Agostinho (2014: 280) demonstrated that Fa do Vesu must be related to Portuguese’s Língua do Pê, variety 3. Indeed, a Portuguese connection dates back to the time when Annobón was a Portuguese colony, from its discovery up until 1778. Further, Spain was only officially present in the colony after 1871 (Arlindo 2006). Nevertheless, Fa do Vesu is quite different from a similar

---

*Varies with xádı́ŋ.*

Language Documentation & Conservation Vol. 15, 2021
Spanish game called Jerigonza, which is structurally related to P-languages. Piñeros (1998) describes Peruvian, Colombian, and Costa Rican Jerigonza as follows:

(6)  Jerigonza Spanish play language (Piñeros 1998: 67)
Word: es.col.tor 'sculptor'
Peruvian  [tʃa.es.tʃa.kul.tʃa.ˈtor]
Colombian  [es.pe.kul pu.ˈtor.po]
Costa Rican  [e.pes.ku.pul.ˈto.por]

Following Araujo and Agostinho (2014: 268–269) and the examples in (6), the Peruvian variant inserts a syllable [tʃa-] before each syllable. This pattern is like Brazil’s Língua do Pê 2 but differs in the syllable that is inserted and the unchanged stress position. The Colombian variant inserts a harmonic [-pV] with a copy vowel after each syllable of the base. Only the nuclear vowel quality is copied. The template is similar to Brazil’s Língua do Pê 1, but coda is not copied. The Costa Rican variant inserts a [-pV] syllable with a copy vowel after each syllable, and the coda of the original syllable is attached to the unstressed ludling syllable. In all Spanish Jerigonza varieties, ludling syllables are always unstressed (Piñeros 1998: 98). The Colombian variant regards the nucleus as a target, while the Costa Rican variant considers the nucleus and the coda, moving it to the ludling syllable. Both in Portuguese P-language games and in Spanish Jerigonza, the stress may be allocated on the right or on the left edge of the foot, however in Portuguese, a ludling syllable may be stressed. In Spanish, as well as in Brazilian Portuguese variants 1 and 3, the harmonic vowel is copied from the vowel in the syllable to its left.

Table 1. Jerigonza patterns, based on Piñeros (1998).

<table>
<thead>
<tr>
<th></th>
<th>Inserted syllable</th>
<th>Alignment</th>
<th>Copy vowel</th>
<th>Stress</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peruvian</td>
<td>[tʃa-]</td>
<td>left</td>
<td>no</td>
<td>non-ludling syllable</td>
<td>syllable</td>
</tr>
<tr>
<td>Colombian</td>
<td>[-pV]</td>
<td>right</td>
<td>yes</td>
<td>non-ludling syllable</td>
<td>nucleus</td>
</tr>
<tr>
<td>Costa Rican</td>
<td>[-pV]</td>
<td>right</td>
<td>yes</td>
<td>non-ludling syllable</td>
<td>nucleus, move coda to ludling syllable</td>
</tr>
</tbody>
</table>

Thus, São Tomé and Príncipe’s P-language and Annobón’s Fa do Vesu share a common origin, and both emerged from contact with varieties of Língua do Pê, likely from Portugal. According to Araujo and Agostinho (2014), Fa do Vesu is structurally related to dialect 3 of Brazil’s Língua do Pê, and this connection can be traced to the time when Annobón was a Portuguese colony, given that the Brazilian variants of Língua do Pê also have an old Portuguese heritage.

10The consonant varies from p/t/k, as stated by (Piñeros 1998).
In sum, Fa do Vesu differs from Spanish language game varieties because it has prominence in the ludling syllable (see examples in 6). Additionally, FA and LI are genetically related, as Portuguese is the lexifier language of the Proto-Creole of the Gulf of Guinea. Moreover, LI has had no significant contact and is not currently in contact with Spanish, which prevents suggesting a Spanish origin for these games in the language cluster altogether. There is also no evidence of significant contact between LI and another language that might have brought the game. More evidence for this claim will be provided in the next section.

3.2 Faa di Vesu (Príncipe Island) LI is a Portuguese-based creole language spoken on Príncipe Island, São Tomé and Príncipe. The LI language game has two rules:

(7) Language game in Lung’Ie (Agostinho & Hyman 2021): Insert a CV syllable with [p] as the onset and a copied vowel as the nucleus
i. after a syllable bearing an H in the base (the [-pV] syllable bears the H tone);
ii. word finally (optional for words with an H).

Thus, LI has two anchor points (see Vaux 2011) for the realization of the ludling: the syllable with an H and the last syllable. The same speaker can use each rule at a time or combine them. However, using rule (7i) by itself is the most common result in our data in words with an H. Additionally, like the ludling found in FA, if there is a coda in the regular word, it will appear as a coda in the inserted syllable; that is, the consonant in the coda will be moved to the ludling syllable (8b). The H will then fall on the inserted syllable as well.

Faa di Vesu also offers evidence for the rhyme constituent when it makes coda elements visible to the application of the game (8b), copies long vowels while deleting one mora of the original vowel and maintains the tone pattern on long vowels\(^\text{11}\) (8c-d), pairs onglides within the onset (8e) and offglides within the coda (8f), and does not allow syllabic nasals to form syllables without resyllabification (8g). Additionally, Faa di Vesu ignores the other consonants in complex onsets (8h). Here, we present examples with only rule (7i):

(8)

<table>
<thead>
<tr>
<th>Base</th>
<th>Ludling</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. vɛ́</td>
<td>vɛpɛ́</td>
<td>‘old’</td>
</tr>
<tr>
<td>b. gɔ́ʃto</td>
<td>gopőʃto</td>
<td>‘taste’</td>
</tr>
<tr>
<td>c. paátu</td>
<td>papaátu</td>
<td>‘plate’</td>
</tr>
<tr>
<td>d. pɛ́ɛtu</td>
<td>pɛpɛ́ɛtu</td>
<td>‘close’</td>
</tr>
<tr>
<td>e. wɔ́ɔ</td>
<td>wɔpɔ́</td>
<td>‘moment’</td>
</tr>
</tbody>
</table>

\(^{11}\)Since the language has a weight-to-tone requirement, long vowels need an H in one of their morae. Therefore, when the H is shifted to the ludling syllable, the original CVV has to be shortened (see Agostinho & Hyman 2021).

\(^{12}\)Final H tones can be deleted in Lung’Ie (cf. Agostinho & Hyman 2021), so examples such as (8a, d-e) can be realized as all [L] with a final fall or flat.
f. diẕjtu diẕp̱jtu ‘eighteen’
g. ṇ̱ mpu lSG
h. ḟ̱nj ki ḟ̱np̱jki ‘new’

In (9), we present examples adapted from Agostinho and Hyman (2021) where rules (7i) and (7ii) can be applied by themselves (9a–b) or at the same time (9c–e). In toneless words, only rule (7ii) can apply (9f–h).

(9)  

<table>
<thead>
<tr>
<th>Base</th>
<th>Ludling</th>
<th>Gloss</th>
<th>Rules</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. fólogo</td>
<td>topólogo, fologo</td>
<td>‘breath’</td>
<td>(7i), (7ii)</td>
</tr>
<tr>
<td>b. áriba</td>
<td>apariba, aribapa</td>
<td>‘herb’</td>
<td>(7i), (7ii)</td>
</tr>
<tr>
<td>c. idintji</td>
<td>idipintji</td>
<td>‘teeth’</td>
<td>(7i) and (7ii)</td>
</tr>
<tr>
<td>d. pêsugu</td>
<td>pepêsugupu</td>
<td>‘peach’</td>
<td>(7i) and (7ii)</td>
</tr>
<tr>
<td>e. fšjšari</td>
<td>fšpšfaripu</td>
<td>‘match’</td>
<td>(7i) and (7ii)</td>
</tr>
<tr>
<td>f. mutambu</td>
<td>mutambupu</td>
<td>‘trap’</td>
<td>(7ii)</td>
</tr>
<tr>
<td>g. igigu</td>
<td>igigupu</td>
<td>‘smoke’</td>
<td>(7ii)</td>
</tr>
<tr>
<td>h. akara</td>
<td>akarapa</td>
<td>‘fried banana’</td>
<td>(7ii)</td>
</tr>
</tbody>
</table>

Hence, the variation found in LI differs from that of FA, although there is some overlapping. In FA, only the final toneless ludling syllable is optional, whereas in LI, a H-Ø-Ø (9a–b, d–e) word can never have a ludling syllable after the penultimate syllable, and a Ø-H-Ø (9c) cannot have a ludling syllable after the antepenultimate syllable. In the next section, we will present a phonological analysis and then focus on some phonological evidence highlighted by the application of the games. Afterwards, we will discuss data from similar language games in the Gulf of Guinea.

4. Phonological issues for the creole languages of the Gulf of Guinea

Language games are commonly used as evidence for phonological issues, such as the position of elements in the syllable and the actual concept of syllable (Botne & Davis 2000; Davis 1993; Davis & Hammond 1995) and word prosody (Hombert 1986; Yu 2007). According to Vaux et al. (2007), it is possible to find language games in most languages, and they are often of linguistic interest; therefore, Vaux et al. suggest looking for them during fieldwork. Yu (2007: 206) holds that “the issue of tonal assignment [in language games] must also be examined in more detail”. Thus, in this section, we will discuss Fa do Vesu and Faa di Vesu data concerning the following issues in FA and LI: the position of the glides in the syllable, syllabic nasals, nasalized vowels, and word-prosodic systems.

The following scheme shows the syllabic structure of the ludlings (adapted from Agostinho 2015, 2016):

13H tone words seem to lose their H tone when only rule (ii) is applied. However, more data is needed in order to make a substantial claim regarding this process.
The examples in (11) also show words with a coda (a–b), offglides (c), onglides (d), and syllabic nasals (e) in the ludling in FA:

(11) Fa d’Ambô

<table>
<thead>
<tr>
<th>Base</th>
<th>Ludling</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. xabá</td>
<td>xapabápá</td>
<td>‘horse’</td>
</tr>
<tr>
<td>b. sáŋgi</td>
<td>sapáŋgi</td>
<td>‘blood’</td>
</tr>
<tr>
<td>c. xáj</td>
<td>xapáj</td>
<td>‘house’</td>
</tr>
<tr>
<td>d. wáŋ</td>
<td>wapáŋ</td>
<td>‘one’</td>
</tr>
<tr>
<td>e. ndá</td>
<td>mpundapa</td>
<td>‘to walk’</td>
</tr>
</tbody>
</table>

Furthermore, the examples in (12) show words with a coda (a–b), offglides (c), onglides (d), and syllabic nasals (e) in the ludling in LI:

(12) Lung’Ie

<table>
<thead>
<tr>
<th>Base</th>
<th>Ludling</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. góʃ</td>
<td>gopóʃ</td>
<td>‘taste’</td>
</tr>
<tr>
<td>b. súŋ</td>
<td>supúŋ</td>
<td>‘sir’</td>
</tr>
<tr>
<td>c. séj</td>
<td>sepéj</td>
<td>‘six’</td>
</tr>
<tr>
<td>d. we</td>
<td>wepe</td>
<td>‘to go’</td>
</tr>
<tr>
<td>e. ŋ</td>
<td>mpu</td>
<td>1SG</td>
</tr>
</tbody>
</table>

Examples (11a-b) and (12a-b) show that when there is a coda in the base, it will appear as a coda in the inserted ludling syllable, as shown in (10).

The issue of whether nasalized vowels are phonemic in FA and in other Gulf of Guinea languages has been addressed before (Agostinho 2015, 2016; Agostinho et al. 2020; Balduino et al. 2015; Maurer 2009; Zamora 2010). Our argument is in favor of a phonetically nasalized vowel followed by a nasal consonant (/VN/), contrary to a phonological nasal vowel (/Ṽ/). Therefore, this is an argument for a coda analysis of the nasal consonant. If there were phonological nasal vowels, we would expect *sēpēgi ‘to eat’ and *sēpū ‘sir’ in examples (11b) and (12b), whereas the nasalization can only occur in the ludling vowel, as in sapūŋgi and supūŋ. Thus, the vowel nasalization in (11b,d) and (12b) is phonetically triggered by a nasal coda within the same syllable that can optionally nasalize the ludling vowel.⁴ As evidenced by the examples in (11a-b) and (12a-b), the nasal codas in the base are not nasalized in the ludling.

⁴See Agostinho et al. 2020 for further discussion.
Playing with Language: Three Language Games in the Gulf of Guinea

by Araujo and Agostinho (2014), ludling words like xapáj ‘house’ and sepéj ‘six’ are an argument for a coda analysis of the offglide concerning the position of the glides in the syllable. If the glides were part of the nucleus, we would have *xaipáj/seipéj or *xaipáj/seipé instead. The offglides behave like codas, as they become part of the inserted syllable. The fact that the offglide demonstrates the same behavior as a coda consonant is an argument for analyzing it as part of the coda. As for the onglides, examples such as wapán ‘one’ and wɛpɛ ‘to go’ are arguments for an onset analysis (Araujo & Agostinho 2014: 273), as onglides behave like consonants in the second position of an onset (i.e., they are not copied in the ludling syllable). Otherwise, the results would be *wapwán and wɛpɛ.

Additionally, the syllabic nasal is phonemic in FA and LI and is interpreted as a full syllable in both languages, as can be seen from the examples in (11e) and (12e), where the syllabic nasal has its own ludling syllable: mpundapa and mpu. Hence, the language games discussed here have highlighted the psychological reality of the syllable as a phonological unit for the informants because they are able to manipulate this type of complex information. Simultaneously, it has allowed the interpretation of the complexities of the Fa do Vesu and Faa di Vesu syllable features, such as the statute of long vowels, onglides and offglides, and syllabic nasals and nasal consonants in the coda, corroborating Araujo and Agostinho (2014). Freitas (2017: 72) also argued that the syllable is intuitively identified by speakers and cited an example of university students using a syllable and not a segment as the main unit when asked to parse a word into unities. This shows that the preferable unity for the segmentation of speech is the syllable and not segments (Freitas 2017: 72). According to Vaux (2011: 737), there is “ample evidence from repetition and attention studies that both children and adults are generally aware of the syllable phonotactics of their language”. Many studies (Friederici & Wessels 1993; Hildum & Brown 1956) have shown that children and adults can distinguish between phonologically allowed and not allowed syllables in their native languages. Additionally, Hombert (1986: 234) argued that language game data can provide linguistic evidence for the psychological reality of the syllable. In our data, it is clear that the speakers could manipulate the syllable constituents, which is also an argument for the syllable as a psychological reality; in other words, it constitutes external persuasive evidence for an abstract unit (see Kiparsky 2018) being recognized and manipulated by the speakers in ludlings of this type.

Based on our field experience, one successful methodology of syllable parsing is to ask the informant to clap once on every unit of a word. This technique is commonly used with children during language acquisition and to develop phonological awareness (Yopp & Yopp 2000). We applied this technique during fieldwork with the Portuguese-based Gulf of Guinea creoles, and it was clear that the informants recognized the syllable as a unit – even those who were illiterate or those with very little schooling. Additionally, according to Vaux (2011: 724), language games play a key role in how a phonological system is acquired, which is one of the main questions of the field of phonology:

15 An investigation on how language games vary across all age groups is beyond the scope of this paper.
The question of how a phonological system is acquired lies at the very heart of phonological theory. Language games have a key role to play in this domain, because they enable us to investigate acquisitional questions on humans of all ages in a fairly straightforward manner, they allow for experimental control of the data and the acquisition process in ways that are not possible with natural acquisition, and they make it possible to present learners with significantly more impoverished sets of primary linguistic data than is possible in natural acquisition settings. (Vaux 2011: 724)

We have shown that Fa do Vesu and Faa di Vesu reveal a relationship between the nuclei and coda of the syllable because these are the elements that are manipulated into the ludling syllable (Agostinho 2015, 2016; Araujo & Agostinho 2014). Therefore, we propose that the syllables in LI and FA are binary with rhyme, which consists of dividing a syllable into the onset and rhyme, where the latter is divided into the nuclei and coda in turn, as seen in (13):

(13)

Using the data from the language games, we propose that the structure of the phonological syllables in LI and FA should be represented by the scheme proposed by Agostinho (2015, 2016) for LI, as follows:

(14)
The nucleus can also be filled by a syllabic nasal at the beginning of a word. In this case, there can be no other elements in the syllable, and the structure is as follows:

(15) $\sigma$

Nuclei

N

LI word-prosodic system has been analyzed in several different ways. Gunther (1973) considered the LI as a three-tone language, Traill and Ferraz (1981) classified it as a free pitch-accent language, Maurer (2009) described it as a H/L tone language, Agostinho (2015, 2016) analyzed it as a mixed system of tone and stress, and Agostinho and Hyman (2021) propose a privative culminating non-obligatory H/O system.

We can observe that rule (7i) applies in words with an H (16a–d), whereas rule (7ii) applies word finally in (16e–g). In toneless words (16d–f), there is no variation, as only rule (7ii) can apply.

(16) Base Ludling Maurer’s patterns Agostinho & Hyman’s patterns Gloss Rules

| a. gofo | gopóto | H-H | H-Ø  | ‘taste’ (7i) |
| b. álima | apálima | H-H-L | H-Ø-Ø | ‘soul’ (7i) |
| c. òoro | okóroko | H-H-H | H-Ø-Ø | ‘mouse’ (7i) |
| d. udúdu | udepédu | L-H-H | Ø-Ø-Ø | ‘finger’ (7i) |
| e. mutambu | mutambupu | L-L-L | Ø-Ø-Ø | ‘trap’ (7ii) |
| f. igigu | igigupu | L-L-L | Ø-Ø-Ø | ‘smoke’ (7ii) |
| g. ñ̃g̃g̃ | ñ̃g̃g̃g̃ | L-L-L or H-H-H | Ø-Ø-Ø | ‘under-developed child’ (7ii) |

Observing the tonal patterns from Maurer (2009) in (16a–d), it is clear that the leftmost H is ‘special’ compared to the others, as it is the only one that can receive a ludling syllable in all of our data. Examples (16e–g) show that when no H is present, the ludling syllable is inserted word-finally. Additionally, example (16g) shows variation in Maurer’s pattern and behaves like (16e–f) in the game. In this sense, the

---

16This is the only example in which the speaker adds a [-kV] ludling syllable in our data.
language game in LI is evidence for a culminative tone system and does not support a fully specified tone system analysis. Example (16g) also supports a privative analysis in which Ø has no pitch target and can be realized as [L-L-L] or [H-H-H] in isolation (Agostinho & Hyman 2021).

Therefore, the language games presented in this paper can be used as arguments for many phonological issues in FA and LI, providing evidence for syllabification, syllable structure, and a word-prosodic system. We defend the games as crucial for showing that the syllables in these languages have a rhyme that is ramified, as they may manipulate its internal structure, differentiating the nucleus and coda. Additionally, the games indicate that the onglides are in the onset, and the offglides are part of the coda of the syllable (see (14)). Further, they show that nasal vowels are not phonological and are the result of a sequence of an oral vowel plus a nasal consonant in the coda. Last, the language games suggest that the syllabic nasal is phonological, as it was interpreted as one syllable and not a pre-nasalized consonant or complex onset.

5. Linguistic documentation and schooling

In this section, we will discuss the case of LI, as it is the only creole language from São Tomé and Príncipe that is taught in schools. The teaching of LI is restricted to schools in the autonomous region of Príncipe. Although confined to the Príncipe Island, there is a growing interest in the language as a symbol of identity for Principe’s ethnic inhabitants. São Tomé and Príncipe’s National Assembly approved the actual administrative political status of Principe Island in 1994 (Agostinho 2015). Since then, Principe Island has become an autonomous region. Nevertheless, in recent years, there has been a strong association between being an ethnic Principense (inhabitant of Principe Island) and speaking LI. Thus, while the Principe regional government supports the idea of a language-related ethnicity, the central government is less enthusiastic about promoting such a division. Therefore, the motivation for a linguistic revitalization of LI is to make the language an expression of Principe identity, producing a ‘national language’ for the island aligned to its relationship with Principe identity and with the regional government’s linguistic planning and policy efforts in Principe (see Agostinho et al. 2016 for a detailed account).

Agostinho (2015) stated that LI is an endangered language that has no monolingual speakers and is spoken by about 200 people with varying levels of competence who are usually over sixty years old. According to Agostinho et al. (2016), LI is in danger of extinction, but attitudes toward the language have become positive in recent years, suggesting a potential reversal of the language shift. The authors also claim that teachers and students relate the language to their cultural identity based on data collected on the island, in which a connection was reported between the language and the land and family as well as the language being a historical asset of the

17 The tone patterns from Maurer (2009) can be easily explained by the fact that LI shows a late phonetic realization of the H peak and that the H can spill over to the next syllables in the phonetic implementation (see Agostinho & Hyman 2021). In other words, Günther’s (1973) and Maurer’s (2009) data presents a phonetic description rather than a phonological analysis.
group. For students, LI functions as a way to distance themselves from São Tomé and other countries and as an affirmation of an identity.

As pointed out by Agostinho (2015, 2016), even among the fully competent speakers of LI, the language used in their daily lives is predominantly Portuguese. Therefore, Pinho (2008) argued that minority language speakers may have a positive attitude toward their own language, even though they may not want to pass it on to their children for reasons such as feelings of inferiority (comparing it to the official language), alleged interference in learning the majority language, and prejudices related to ‘accent’. However, Fishman (2006) argued that minority languages should be considered as a nation’s natural resources, essential for its linguistic and cultural enrichment, which function as a differential in the face of globalization. Speakers have reported that parents and grandparents spoke in LI, but children, in extreme cases, would suffer physical and psychological abuse if they did not respond in Portuguese (Agostinho et al. 2016). The people that suffered these abuses relate them to their parents and grandparents, who claimed that they would not learn ‘proper’ Portuguese if they spoke LI. However, according to Garret (2008), even if a language is perceived by its speakers as inferior to the official language, it can also serve as a symbol of its identity. This seems to be the case for LI. Even though the language is at serious risk of rapid extinction, the Principense community still connects it to their identity. This relationship is also very common among young people who do not speak or understand the language.

Despite this, the linguistic planning of minority languages is problematic in general, primarily due to issues related to the officialization, maintenance, and standardization, especially when these languages co-exist in multilingual and diglossic contexts. Moreover, these languages, with few exceptions, do not have a written tradition, which makes standardization from a preexisting model difficult and increases the possibility of authorial orthographies. The situation of Príncipe Island is particularly complex due to the very existence of LI as a minority member in an environment with speakers of Portuguese (in this case, a majority language that often marginalizes minority languages, leading to their abandonment and further extinction), other creoles (Kabuverdianu, Santome, and Angolar), and its own endangerment situation (Agostinho 2015, 2016).

One can analyze the case of language policy on Príncipe Island via two main domains: education and media. Schooling is considered by Severing and Weijer (2008) as the most efficient channel in the area of language planning. Since 2009, the language has been taught in schools on Príncipe Island. As such, instructors are elders who still have active knowledge of the language. However, there are no instructors trained to teach the language, and there are no proper didactic materials to support them. Thus, language planning and standardization through the production of language materials would fill a gap in LI grammaticization (Auroux 1992), paving the way for new publications and the growing interest in the language and its promotion as one of the national languages of São Tomé and Príncipe (Agostinho 2015; Agostinho & Araujo 2021).
While the development of teaching materials is crucial to promote language grammaticization, education-science-based training programs for instructors are also critical. In this sense, in Portugal’s clinical context, according to Freitas (2017), psychologists and educators have little knowledge of one’s own language’s syllable structures, which can be extended to the classroom context. Therefore, “the awareness of the relationship between syllable structure and language segments allows teachers to more accurately assess students’ oral and written productions in learning, designing more appropriate didactic intervention strategies to overcome the obstacles arising from the confrontation between oral tradition and mirrored spelling in children’s academic performance” (Freitas 2017: 90–91). In Portuguese, studies have shown the relevance of the relationship between the knowledge of syllable structures and segments (Chambers et al. 2003; Miranda & Matzenauer 2010), which can be successfully explored with the help of language games in a learning environment.

Since 2016, the first author has provided courses to instructors on Príncipe Island based on Agostinho (2015) work. The workshops are meant to teach orthography and how to use a pedagogical method developed with the help of the instructors themselves (Agostinho 2015; Agostinho and Araujo 2021). The discussion presented here can also be used during educational training to help instructors develop phonological awareness or find social interactions in which to use their language games, as not all are completely fluent in LI. The same method can be used in schools together with other materials, which would help the students with their learning and phonological development. Similarly, the ludling can be used by teachers working with small children. Using language games in the LI classroom would also provide a playful environment, as the classes basically consist of vocabulary learning and translation tasks (Agostinho 2015), and the students complain about this type of methodology (Agostinho et al. 2016).

6. Final remarks  We argued that the language games in Fa d’Ambô and Lung’le have a common origin and that they emerged from possible contact with Língua do Pê’s varieties via Portuguese settlers by comparing three language games – Annobón’s variety of Fa do Vesu, Príncipe’s variety of Faa di Vesu, and São Tomé and Príncipe’s variety of Língua do Pê – and corroborating Araujo and Agostinho (2014). This contact occurred before the speciation of the Gulf of Guinea creoles; likely, it was present in the Gulf of Guinea Proto-Creole because Annobón did not have much contact with Portuguese speakers after the beginning of the colonization (Araujo et al. 2013; Arlindo 2006).

We have also shown that language games are a useful tool for linguistic analysis of the syllable and prosodic system. We discussed phonological issues, such as the position of the glides in the syllable, the presence of syllabic nasals, and nasalized vowels. We also showed how different anchor points are targets in the games and

18“(...) a consciência da relação entre estrutura silábica e segmentos permitirá aos professores avaliarem com mais rigor as produções orais e escritas dos alunos, desenhando estratégias de intervenção didática mais adequadas à superação dos obstáculos decorrentes do confronto entre oralidade e ortografia espelhado nos desempenhos acadêmicos das crianças.”
provided an example of two anchor points being targeted simultaneously. In this sense, language games are an important source of linguistic data collection and should be explored by fieldworkers during elicitation with endangered languages.

Concerning Jerigonza, Piñeros (1998) pointed out that the task of decoding the disguised word is made possible by making prominent only those syllables that were originally present in the base. The listener is able to reconstruct the original Spanish word by screening the non-prominent syllables. As we observed in the examples above, this is not true for the language games in the Gulf of Guinea, as the prominent syllable is always the inserted one. In other words, the maintenance of the stressed or high tone in its original place is not essential for the listener to decode Fa do Vesu and Faa di Vesu; therefore, it cannot be the explanation for why the listener can decode this type of language game.

Finally, we have shown that language games are productive tools for learning and perceiving syllabic structures from the user’s point of view as well as from the linguist’s point of view. Thereby, play languages may show educators many specificities of one’s phonology, such as vowel lengthening, nasal consonants, consonants allowed and disallowed in the coda position, etc. (Campbell 2020). Meanwhile, ludlings can be relevant for other purposes of language documentation beyond grammatical description and analysis, as they provide a valuable resource for the documentation of verbal art and other poetic uses of language (Fitzgerald 2017; Woodbury 2015).

The community’s interest in Lung’Ie is growing. Hence, educators and stakeholders are becoming aware of the need for the documentation and conservation of this and other Portuguese-lexified creole languages in São Tomé and Príncipe. Language games and other verbal arts can help these people discover linguistic aspects marginalized in their languages by colonialist attitudes. As stated Fitzgerald (2017), supporting community language goals, revitalization, and training activities regarding verbal arts may offer concrete examples of how a linguist “can make contributions beyond conducting phonological documentation and theoretical analysis” (Fitzgerald 2017: 128). In the case of Lung’Ie, a highly endangered language, we argued that the use of the language game as a pedagogical tool can help the process of documentation and the revitalization of the language alongside other materials.

References


We thank a reviewer for pointing out these references.
Playing with Language: Three Language Games in the Gulf of Guinea


Frazier, Melissa & Jesse Saba Kirchner. 2011. Correspondence and reduplication in language play: Evidence from Tigrinya and ludling typology. (Unpublished manuscript.) (http://www.melfraz.com/ling/TigLudMs.pdf)


