Underapplication in an Akan Language Game[1]

Kwasi Adomako

Department of Akan-Nzema Education
College of Languages Education
University of Education, Winneba

knyantakyi78@gmail.com

ABSTRACT

This paper discusses the phenomenon of underapplication of palatalization in a Pig Latin game in Akan, a Niger-Congo (Kwa) language. Akan Pig Latin (henceforth APL), which is popularly known in Akan as Megesege, is a language game played usually by Akan youth. The game is played by appending the velar consonant /g/ to the right of every vowel in the input word or phrase and then copying the vowel of the base syllable to form a CV structure. Whenever the base syllable contains /i, ɪ, e/ or /ɛ/, the manipulation performed by the game creates a palatalizing environment, in which a velar segment is followed by a front vowel. In regular Akan phonology, such sequences tend to undergo the process of palatalization. This paper provides evidence to show that in the forms produced by APL, palatalization fails to apply in the expected contexts. The underapplication of palatalization is accounted for within the framework of Optimality Theory. It is argued that the process is blocked by a high-ranking OCP constraint that bans adjacent [Coronal] segments in neighboring syllables.

Keywords: Underapplication, Akan Pig Latin, OT, palatalization, language game

About the author: Kwasi Adomako is a Senior Lecturer in the Department of Akan-Nzema Education, College of Languages Education, University of Education, Winneba, Ghana. He holds MPhil in Theoretical Linguistics from the University of Tromsø, Norway. He is presently a PhD candidate at the Department of Linguistics, University of Ghana, Legon. His research interests include Akan loanword, reduplication, Akan morphology and language games.

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1. Introduction

Language games are cross-linguistically common alternative languages that have been studied by numerous researchers, including Haas (1957, 1959, 1969), Sherzer (1970, 1976, 1985), De Camp (1970), Conklin (1956, 1959), Laycock (1972), Baghemil (1988), Miner (1992), Kenstowicz (1981), Yip (1982), and others. While a number of language games used to be popular among the youth in many Akan communities, the phenomenon has received little scholarly attention, apart from a general overview in the work by Agyekum (1996, 2009) and in a description of phonological processes in one such game by Adomako (2015).

This paper focusses on the application of a single phonological process, palatalization, in a version of Akan Pig Latin (henceforth APL) popularly known in Akan as the *Megesege*. While palatalization occurs in regular Akan phonology, it has been found to underapply in reduplication and in loanword phonology. The study contributes to the existing body of knowledge of underapplication of Akan palatalization by demonstrating the process also fails to apply to forms manipulated by APL, even though palatalizing environment is regularly created in those forms.

The paper argues that the explanation for the underapplication of palatalization in APL is phonological. It accounts for the failure of palatalization in the framework of Optimality Theory, where it is postulated that in APL forms, palatalization is blocked by a high-ranked OCP constraint that bans adjacent segments specified as [Coronal] that lie in neighboring syllables.

The rest of the paper is organized as follows. Section 2 provides the relevant background on Akan phonology, including its segmental inventories and the contexts in which palatalization processes apply or fail to apply. Section 3 provides a brief overview of Akan language games and introduces the rules of Akan Pig Latin. Section 4 presents the data elicited from fluent users of APL, with a focus on phrases that contain sequences that are expected to undergo palatalization. In section 5, the generalizations made on the basis of the data are formalized within Optimality Theory. Section 6 summarizes the conclusions.

2. Background on Akan phonology

Akan is a Niger-Congo language of the Kwa language family, which is spoken mainly in Ghana and some parts of Côte d`Ivoire,[2] both in West Africa. Its three major dialects are Akuapem, Asante and Fante are spoken in Ghana. The first two dialects together constitute the Twi group. It is estimated that over 40% of Ghana's population of about 24 million people[3] use the language as their L1.

This section presents the aspects of Akan phonology that will be relevant to the discussion of Akan Pig Latin. Basic information on Akan syllable structure and vowel inventory is given in section 2.1. Section 2.2 introduces the process of full palatalization and section 2.3 presents some domains in which this process has been found not to apply.

[2] Abron/Brõ/Bono is one of the minor dialects of Akan which is also spoken in Côte d'Ivoire.
[3] The Population and Housing Census conducted in 2010 recorded a population of about 24.7 million people living in Ghana (GSS 2012: 1).

2.1 Syllable structure and vowel inventory

In terms of syllable structure, Akan is an open-syllable system. The only permitted syllable types are CV, V, CrV and S, the latter standing for a syllabic consonant ([m̩], [n̩], [r̩] or [w̩]). The CrV syllables are derived from underlying CVrV sequences, in which the first vowel, specified as [+high, -ATR], is deleted in the surface representation. This can be illustrated with such native Akan words as /sɪɹa/ 'visit' and /fɪɹɛ/ 'call', which are realized a the surface level as [sɹa] and [fɹɛ], respectively.

Akan has ten phonetic vowels in its vocalic system, which is presented below in (1). The vowels are listed in pairs distinguished by their ATR (Advanced Tongue Root) specification. The leftmost vowel in each pair is specified as [+ATR], while the rightmost one is [-ATR].

(1) Akan vowel chart

	Front	Central	Back
High	i, ɪ		u, ʊ
Mid	e, ɛ		o, ɔ
Low		æ, a	

As can be seen from the vowel chart in (1), Akan has four front vowels, /i, ɪ , e, ɛ/. These vowels usually trigger palatalization of the preceding (non-nasal) velar and glottal segments, changing underlying /k, g, h, w/ into surface [ʨ, ʥ, ɕ, ɥ], respectively. The details of this process are the focus of the next section.

2.2 Palatalization in Akan

Palatalization as a phonological process in Akan has attracted scholarly attention from many Akan phonologists over several centuries (e.g. Koelle 1854; Christaller 1933; Welmers 1946; Schachter & Fromkin 1968; Mensah 1977; Boadi 1988; Dolphyne 2006; Abakah 2012; among others). Boadi (1988) distinguishes two types of palatalization in Akan, namely, partial palatalization and complete or full palatalization, both applying before front vowels.[4] Boadi defines full palatalization as "a synchronic or diachronic consonantal shift towards the palatal region" (1988: 3). In this process, the primary articulation of the target consonant changes in the surface form. The segments affected by full palatalization are velar /k, g, w/ and glottal /h/. Before front vowels, they are realized as palatal [ʨ, ʥ, ɥ] and [ɕ], respectively. This is illustrated in (2).

(2) Full palatalization in Akan

	UR	SR	Gloss
a.	hɪta	ɕɪta	spread abroad
b.	hɪɹa	ɕɪɹa	bless
c.	gina	ʥinã	stand
d.	kɪ	ʨɪ	catch
e.	gɪdi	ʥidi(e)	faith/belief

Although full palatalization has been argued to be an active process in Akan, there are some

4 For detailed discussions of partial palatalization and the other types of palatalization in Akan, see Abakah (2012).

domains where it may fail to apply. Cases of the so called *underapplication* of palatalization in Akan are discussed in the following section.

2.3 Underapplication of full palatalization in Akan

The term *underapplication* was first used by Wilbur (1973) in her work on reduplication to describe a situation whereby a general phonological process does not apply in a reduplicated form even though its structural description is met. The term was later extended to other situations in which a phonological process unexpectedly fails to apply, including interaction with other phonological processes (McCarthy 1999), exceptionality, non-derived environment blocking, restriction to certain classes or levels (Baković 2011) and loanword phonology (Pons-Moll 2012, Adomako 2013). The lack of full palatalization in Akan has been observed in several of these environments. These are discussed in turn in the following subsections.

2.3.1 Underapplication in reduplication

One of the classic examples of underapplication in Wilbur's (1973) dissertation is the lack of palatalization in Akan reduplication. In Akan verb reduplication, used to encode iterative or distributive meaning, a verb stem is prefixed with a CV[5] syllable in which C is equal to the initial consonant of the stem and V is a [+high] vowel that agrees with the first vowel of the stem in terms of rounding and root advancement. Some examples are given in (3).

(3) CV reduplication in Akan (Schachter & Fromkin 1968: 157)

	Stem	Gloss	Reduplicated form
a.	síʔ	stand	sì-síʔ
b.	sɛ́ʔ	resemble	sɪ̀-sɛ́ʔ
c.	sáʔ	cure	sɪ̀-sáʔ
d.	sóʔ	seize	sù-sóʔ
e.	sɔ́ʔ	light	sʊ̀-sɔ́ʔ

If the stem-initial consonant is /k, g, h/ or /w/ and the following stem-initial vowel is [-round], CV reduplication creates a sequence that meets the structural description of full palatalization. However, as shown in (4), the reduplicant surfaces with a non-palatal consonant.

(4) Underapplication of palatalization in CV(N) reduplication

	Stem	*Gloss*	*Reduplicated form*	*Ungrammatical form*
a.	káʔ	bite	kɪ̀-káʔ	*tɕɪ-kaʔ
b.	háẃʔ	pester	hɪ̀-háẃʔ	*ɕɪ-hawʔ
c.	háḿ	hold breath	hɪ̃̀ǹ-hãḿ	*ɕɪ̃n-hãm[6]
d.	gáḿ	hold tightly in arm	gɪ̃̀ǹ-gãḿ	*dʑɪ̃n-gãm

[5] It is worth noting that in the reduplication of CVʔ verb base, the glottal stop is not copied in the reduplicant as seen in (3) and later on in (4).
[6] The examples in (4c) and (4d) are mine. Those in (4a) and (4b) are found in Schachter & Fromkin (1968: 166).

2.3.2 Underapplication in loanwords

Until recently, underapplication of full palatalization in Akan had only been noticed in verb reduplication. However, McCarthy et al. (2012) mention in passing that in loanwords discussed by Adomako (2008), sequences of velars followed by front vowel also fail to undergo palatalization. More examples are provided by Adomako (2013), who shows that in English loanwords such as those in (5), an epenthetic front vowel used to repair the syllable structure does not trigger palatalization of the preceding velar, as would be expected in the general phonology of Akan.

(5) Underapplication of palatalization in Akan loanword adaptation (Adomako 2013: 181)

	Source	*Gloss*	*Loan*	*Ungrammatical form*
a.	[kɪk]	kick	kiki	*kitɕi
b.	[kʊk]	cook	kuki	*kutɕi
c.	[keɪk]	cake	ke:ki	*ke:tɕi
d.	[si:k]	seek	siki	*sitɕi
e.	[lɪk]	lick	lɪkɪ	*lɪtɕɪ

2.3.3 Underapplication in native vocabulary

Lack of palatalization in the expected context can also be observed in some native Akan words. For example, in $C_1V_1C_2V_2$ morphemes where C_1 is a velar consonant and V_2 is a front vowel C_1 fails to palatalize when the C_2 is a coronal consonant. This can be illustrated by words such as *kita* 'hold' or *kɛntɛn* 'cane basket'. The lack of palatalization in this context has been attributed to a ban on sequences of [Coronal] segments in adjacent syllables (McCarthy & Prince 1995: 342ff). This interpretation is supported by the observation that in monosyllabic CV words, velar consonants preceding front vowels invariably undergo palatalization.

3. Language games in Akan

Language games, also referred to as play-languages, speech disguise, secret languages, backward languages, ludlings or argot (Laycock 1972; Baghemil 1988, 1995; Davis 1993), can be defined as a "language play phenomenon in which phonological forms of words are systematically altered so as to disguise what they are" (Davis 1993: 1980). Language games serve to fulfill communicative purposes and functions, such as reinforcing group identity and social cohesion (Agyekum 2009: 73), delineating social groups and subgroups (Sherzer 1976: 34) and concealing gossip or vulgar language. In this section, I present a brief overview of language games used among the Akan people in Ghana and then discuss the forms and rules of a specific language game, which I refer to as Akan Pig Latin.

3.1 Types of language games in Akan

According to Agyekum (2009), "speech play is a universal concept, but its structure, form, rules and socio-cultural contexts vary from culture to culture" (2009: 48). He identifies several types of speech play among the Akan people including puns, riddle, tongue twisters, verbal dueling contest, mnemonic devices, Pig Latin, etc., the use of which demonstrates the speaker's language competence and communicative artistry. He notes that language games used to be pervasive in the Ashanti Region of Ghana few decades ago but are now disappearing due to urbanization and preference of other pastimes such as watching TV or playing computer games (2009: 79)

3.2 Akan Pig Latin: Forms and rules

The focus of the present paper is an infixing game, popularly known as *Megesege*. Following Agyekum (2009), the game will be referred to as Akan Pig Latin (APL). The game consists in inserting a certain string of segments after each syllable of the original word. Adomako (2015) identifies five common varieties of the game among Asante Twi players. The varieties, listed in (6), differ in terms of the quality of the inserted segments. The names of the variety are based on the result of the application of the game to the phrase *mese* 'I say…'.

(6) Varieties of the APL

	Name	*Inserted string*
a.	Megesege/mekeseke	-gV-/-kV-
b.	Mepresepre	-prV-
c.	Mesteseste	-stV-
d.	Mesesese	-sV-
e.	Megsesegse	-gsV-

The present study focusses on the first, and most popular, variety, *Megesege*, since the manipulation effected by the game results in the creation of sequences that meet the structural description of full palatalization. In this version of the game, a syllable of the form [gV] is appended to the right of every vowel of the input word or phrase. The quality of the vowel following the velar stop is identical to the input vowel to which it is appended. The rule of the game could be expressed using the formulation shown in (7), adapted from Agyekum (2009:61).

(7) $V_{\alpha} \rightarrow V_{\alpha}\ g\ V_{\alpha}$

Adomako (2015: 9) argues that the manipulation involved in APL does not take place in one fell swoop but rather has to be decomposed into a number of steps. These are (a) basic syllabification of the input word, (b) attaching the voiced velar stop [g] to each of the syllables, and (c) copy epenthesis to the right of those velar stops. The procedure is illustrated in (8), using as input a schematic form in the CVCV shape and the word [kòfi] 'Kofi' (personal name).

(8) Phonological and morphological steps in Megesege

Input	/CV_1CV_2/	/kòfí/
a. Basic syllabification	C_1V - CV_2	kò - fí
b. g-affixation	CV_1g - CV_2g	kòg - fíg
c. Copy epenthesis	$CV_1g\ V_1$ - $CV_2g\ V_2$	kògò - fígí
Output	[$CV_1g\ V_1$ - $CV_2g\ V_2$]	[kògò - fígí]

Language games of this type, in which a string of segments is infixed and iterated in the base word, have been observed in many languages of the world, e.g. Cuna (Sherzer 1976), Tigrinya (Baghemil 1988), varieties of Spanish (so called Jerigonza games; Piñeros 1998), Hausa (Yu 2008) or French (Krämer & Vogt 2018). The games may differ in terms of the quality of the infixed segments (e.g. -rV- in Cuna, -pV- or -ʧ- in Jerigonza, -dV- in Hausa, -fV- in French), the locus of affixation (after each input syllable in Akan, Cuna Tigrinya and Colombian Jerigonza but before each syllable in Hausa, French and Peruvian Jerigonza) and others.[7]

It has been argued that language games can provide insight into the phonological system of the language (e.g. Scherzer 1970, Guimarães & Nevins 2013). As will be shown in the following section, this is true for Megesege, as the language game sheds light on the nature of full palatalization in Akan.

4. Palatalization in Megesege

In this section, it will be shown that full palatalization fails to apply in certain contexts in forms manipulated by the game. Before the data is presented in section 4.2, the methodology of data collection will be outlined in section 4.1.

4.1 Methodology

This subsection discusses the tools used to gather data for the present study. I will discuss the participants, the stimuli, the data collection technique, and method of data analysis.

4.1.1 Participants

The data were elicited from two participants, selected for this project because of their high proficiency in the use of the game and because of their consistent use of APL in all their conversations with each other. The two participants were brothers. Both are native speakers of the Asante Twi dialect of Akan and have been brought up in urban settlements in the Ashanti Region of Ghana, where they claim APL is still played among the youth. One participant was a 24-year old final-year student pursuing a BA programme in Twi Education at the Department of Akan-Nzema Education, University of Education, Winneba. His younger brother was an 18-year-old high school student.

[7] For a recent typology and analysis of infixing language games, see Krämer & Vogt (2018).

4.1.2 Stimuli

For the purposes of this study, around 200 sentences were constructed. 100 of them contained approximately 250 existing Akan words with front vowels. Such words created a palatalizing environment when manipulated by the game. Appending /g/ and copying a front vowel to its right creates a sequence that meets the structural description of full palatalization: a velar stop followed by a front vowel.

4.1.3 Procedure

The sentence stimuli were given to the respondents in the regular Asante Twi dialect. The participants were asked to manipulate the sentences using the *Megesege* game and repeat each output sentence three times; the first repetition was uttered in ordinary casual speech, while the last two repetitions were made slowly. The responses were digitally recorded using a Praat sound recorder, with 44.1 kHz and 16 bit (mono). The elicitation took place at the Ajumako Campus of the University of Education, Winneba.

4.1.4 Data analysis

The collected data were analysed using Praat software (Boersma & Weenink 2014). The recordings were manually segmented into words, syllables and individual segments and labelled on a Praat text grid. Sample segmentation, using the sentence *dʑina hɔ* 'stand there!' manipulated into [dʑigi-naga hɔgɔ] is shown in Diagram 1.

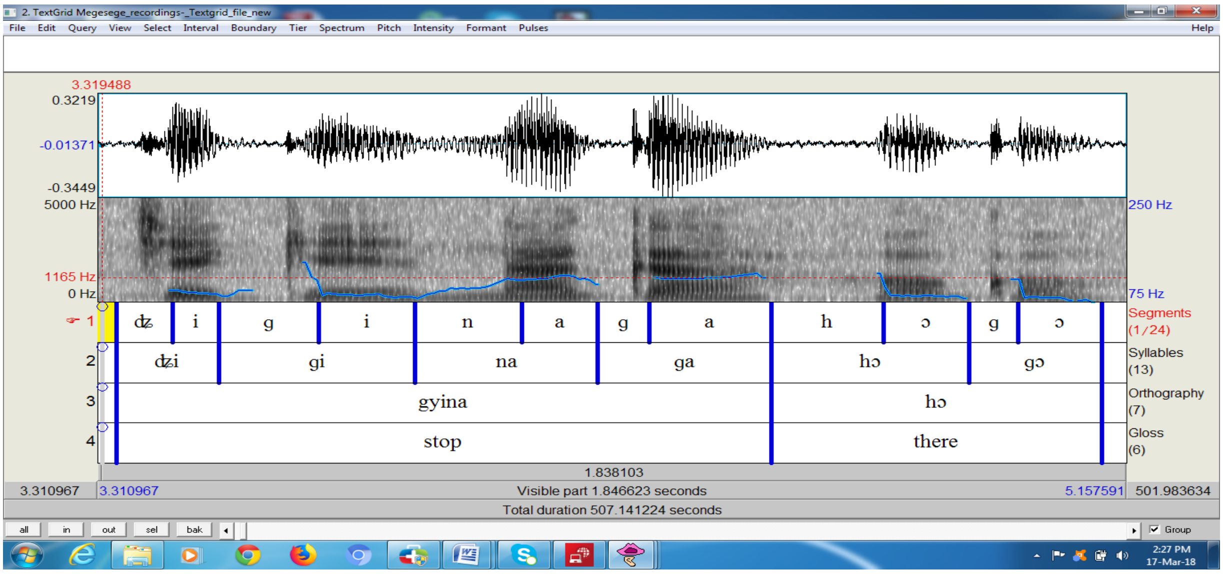

Diagram 1: Spectrogram of the manipulation of *dʑina hɔ* [dʑigi-naga hɔgɔ]

Segments in the palatalizing environment were inspected auditorily and visually to assess whether palatalization had or had not applied. In the example shown above, the first and second consonant, [ʥ] and [g], have different formants. The former begins with a silent gap, followed by turbulent noise characteristic of affricates, suggesting that palatalization had applied. In the latter, the silent gap is followed by a burst but no aperiodic frication noise, indicating that the consonant had resisted palatalization. The distribution of palatalized and non-palatalized segments in the elicited data is presented in the following section.

4.2 Results and discussion

In playing the game, all words or morphemes in phrasal or sentential constructions in the regular grammar are segmented into individual syllables and a [gV] affix is appended to each base syllable.[8] In this section, I look at the failure or non-application of palatalization in different contexts in the manipulated sentential constructions with focus on simple sentences. For ease of exposition, different contexts in which palatalization underapplies will be discussed separately. I will first focus on affixed syllables and then on base syllables.

The data in this section are organized as follows. The first line in the 'APL form' column on the left is the phonetic realization of the stimulus sentence. Below is the phonetic transcription of the manipulated form elicited from the participants. A translation is given in the third line. The 'Expected form' column on the right-hand side provides the realization that would be expected if palatalization applied in the manipulated forms. Throughout the paper, the syllables under discussion are marked in bold.

8 In what follows, the term 'base syllable' will be used to refer to those syllables in the output form to which the [gV] affix ('affix syllable') is appended.

4.2.1 Non-palatizable base syllable, underapplication in the affix syllable

The stimuli sentences discussed here contain words without sequences of /k, g, w/ or /h/ followed by front vowels, hence palatalization in base syllables is not expected. However, whenever the base syllable contains a front vowel, the game manipulation creates a palatalization context in the affixed syllable. As shown in (9) below, palatalization fails to apply in these syllables.

		APL form	Expected form
(8)	a.	ɔ̀ɹɪ̀tʊ́ m̀mɪ̀ɹɪ̀ká	
		[ɔ̀gɔ̀-ɹɪ̀gɪ̀-túgú mɪ̀gɪ̀-ɹɪ̀gɪ̀-kágá]	*[ɔgɔ-ɹɪʥɪ-tugu miʥi-ɹiʥi-kaga]
		‘S/he is running’	
	b.	jɛ́ŋ̀kɔ́ hɔ́ bì	
		[jɛ̀gɛ̀ǹ-kɔ́gɔ́ hɔ́gɔ́ bìgì]	*[jɛʥɛn-kɔgɔ hɔgɔ biʥi]
		‘Let’s also go there’	
	c.	nɪ̃̀ hʊ̃́ ásɛ́ḿ ábà	
		[nɪ̃̀gɪ̃̀ hʊ̃́gʊ̃́ ágá-sɛ́gɛ́ḿ ágá-bàgà]	*[nɪʥɪ hʊgʊ aga-sɛʥɛm aga-baga]
		‘An issue about him/her has arisen’	
	d.	mã̀tí nɪ̃̀ hʊ̃́ ásɛ́ḿ	
		[mã̀gã̀-tígí nɪ̃̀gɪ̃̀ hʊ̃́gʊ̃́ ágá-sɛ̀gɛ̀m̀]	*[maga-tɪʥɪ nɪʥɪ hʊgʊ aga-sɛʥɛm]
		‘I have heard about him/her’	
	e.	mɪ̃̀pɛ̀ sɛ́ mɪ̃́bá	
		[mɪ̃̀gɪ̃̀-pɛ̀gɛ̀ sɛ́gɛ́ mɪ̃́gɪ̃́-bàgà]	*[mɪʥɪ-pɛʥɛ sɛʥɛ mɪʥɪ-baga]
		‘I want to come’	
	f.	mɪ̃̀ǹnɪ̃́ḿ nʊ̃̀	
		[mɪ̃̀gɪ̃̀-nɪ̃́gɪ̃́ḿ nʊ̃̀gʊ̃̀]	*[mɪʥɪ niʥim nʊgʊ]
		‘I don’t know him/her’	
	g.	ɔ̀jɛ̀ màdã́ḿfʊ̀	
		[ɔ̀gɔ̀ jɛ̀gɛ̀ màgà-dã́gã́ḿ-fʊ̀gʊ̀]	*[ɔgɔ jɛʥɛ maga dagam fʊgʊ]
		‘S/he is my friend’	

4.2.2 Palatalization in the base syllable, underapplication in the affix syllable

The following set of examples shows forms in which palatal segments before front vowels are found in the base syllable. The base syllables in examples (9a–d) contain the labial-palatal fricative [ɥ], those in (9e–g) contain the palatal fricative [ɕ], while those in (9h–l) contain the palatal affricates [ʨ] and [ʥ]. As discussed in Section 2.2, before front vowels, these segments can be derived by the rule of full palatalization from /h, w, k/ and /g/, respectively. When the game affix is added to these base syllables, the affixed syllable surfaces with a velar stop. In other words, palatalization takes place in the regular phonology but fails in similar contexts in the manipulated form.

(9) APL form — Expected form

a. ɥèí jɛ̀ mì títɕ̧à

[ɥègèì jɛ́gɛ́ mìgì tígí-tɕ̧àgà] — *[ɥeʥ̧ei jɛʥ̧ɛ miʥ̧i tiʥ̧i-tɕ̧aga]

'This is my teacher'

b. ɥìsá æ̀dᶣìàní nʊ́

[ɥìgì-ságá àgà-dúgú jàgà-nígí nʊ̀gʊ̀] — *[ɥɪʥ̧ɪ-saga aga-dugu jaga-nɪʥ̧ɪ nʊgʊ]

'Masticate the food'

c. òɥìá nʊ́ ɹìpùé

[ògò-ɥìgì-ágá nʊ́gʊ́ ɹìgì-púgú-jégé] — *[ogo-ɥiʥ̧i-aga nʊgʊ rɪʥ̧ɪ-pugu-jeʥ̧e]

'The sun is rising'

d. mìɹìɥɛ́ǹ èfíé nʊ́

[mìgì-ɹìgì-ɥégéń jègè-fígí-jégé nʊ̀gʊ̀] — *[mɪʥ̧ɪ-rɪʥ̧ɪ-ɥɛʥ̧ɛn jeʥ̧e-fiʥ̧i-jeʥ̧e nʊgʊ]

'I am watching over the house'

e. ɕ̧ì ɲ̀ɥí!ɹá nʊ́

[ɕ̧ìgì ɲ̀ɥígí-ràgà nʊ́gʊ́] — *[ɕ̧ɪʥ̧ɪ nɥiʥ̧i-raga nʊgʊ]

'Burn the weed'

f. ɕ̧ɛ̀ wàtáàdíɛ́ nʊ́

[ɕ̧ɛ̀gɛ̀ wàgà-tágá-dígí-jɛ́g̲ɛ́ nʊ̀gʊ̀] — *[ɕ̧ɛʥ̧ɛ waga-taga-dɪʥ̧ɪ-jɛʥ̧ɛ nʊgʊ]

'Put on your cloth'

g. ɕ̧ì èdᶣìá nʊ́

[ɕ̧ìgì jègè-dùgù-jágá nʊ̀gʊ̀] — *[ɕ̧ɪʥ̧ɪ jeʥ̧e-dugu-jaga nʊgʊ]

'Burn the tree'

h. ʥìnà hɔ́

[ʥìgì-nàgà hɔ́gɔ́] *[ʥiʥi-naga hɔgɔ]

'Stand there!'

i. ʥì nàásɛ́ḿ nʊ́ dí

[ʥìgì nàgà-sɛ́gɛ́ḿ nʊ́gʊ́ dìgì] *[ʥɪʥɪ naga-sɛʥɛm nʊgʊ diʥi]

'Believe in what s/he says'

j. kòfí pɛ̀ ʥìmíí
[kògò-fígí pɛ̀gɛ̀ ʥìgì-mígíí] *[kogo-fiʥi pɛʥɛ ʥiʥi-miʥii]
'Kofi likes fooling'

k. ʥìnì wàní jíé
[ʥìgì-nìgì wàgà-nígí jígí-jègèì] *[ʥɪʥɪ-nɪʥɪ waga-niʥi jiʥi-jeʥei]
'Fix your eye on the target well'

l. mìtɕìɹì ŋ̀ká!tíɛ́
[mìgì-tɕìgì-ɹìgì ŋ̀kàgà-tígí-jɛ̀gɛ̀] *[miʥi-tɕiʥi-ɹiʥi ŋkaga-tɪʥɪ-jɛʥɛ]
'I'm allergic to groundnut'

4.2.3 Underapplication in the base syllable

Recall from Section 2.3 that there are instances where palatalization fails to apply in the regular phonology of Akan. One such instance, discussed in Section 2.3.3., concerns native Akan words containing a sequence in $C_1V_1C_2V_2$ such that C_1 is a velar consonant, V_1 is a front vowel and C_2 is a coronal consonant. The lack of palatalization in this case has been attributed to an OCP restriction that prohibits [Coronal] segments in adjacent syllables. Thus, when such forms are manipulated by the *Megesege* game, the velar consonant C_1V_1 in the base syllable is expected to undergo palatalization since it is now separated from C_2 by the affix syllable. However, as shown in (10) below, this is not what happens. Forms that fail to undergo palatalization in the regular sentences continue to resist palatalization in the manipulated forms. Thus, APL seems not to lift the ban that prevents palatalization in those bases. This is shown for the velar stop in examples (10a–d) and for the glottal fricative in examples (10f–g).[9]

(10) APL form Expected form

a. mìkìtà sìká nʊ̃́ bì
[mìgì-kìgì-tágá sìgì-kágá nʊ́gʊ́ bìgì] *[miʥi-tɕiʥi-taga siʥi-kaga nʊgʊ biʥi]

'I am holding/having some of the money'

[9] Note that as in the previous examples, palatalization also underapplies in the affix syllable. However, these syllables are not marked in bold. This is done in order to draw attention to the exceptional base syllables.

b. mɪ̀ wɔ̀ kɛ̀tɛ́
[mɪ̀gɪ̀-wɔ̀gɔ̀ kɛ̀gɛ̀-tɛ́gɛ́] *[mɪʥɪ-wɔgɔ ʨɛʥɛ-tɛʥɛ]

'I have a mat'

c. kìtà mú
[kìgì-tàgà múgú] *[ʨiʥi-taga mugu]
'Hold it'

d. kɪ̃̀ŋkã̀ŋ ŋ̀ŋwʊ̃́mã́ nʊ̃́
[kɪ̃̀gɪ̃̀ŋ-kã̀gã̀ŋ ŋwʊ̃́gʊ̃́-mã́gã́ nʊ̃̀gʊ̃̀] *[ʨɪʥɪn-kagan ŋwʊgʊ-maga nʊgʊ]
'Read the book'

e. kòfí hĩ̀ní pʊ̃́nʊ̃́ nʊ̃́
[kògò-fígí hĩ̀gĩ̀-nĩ̀gĩ̀ pʊ̃́gʊ̃́-nʊ̃́gʊ̃́ nʊ̃̀gʊ̃̀] *[kogo-fiʥi ɕiʥi-niʥi pʊgʊ-nʊgʊ nʊgʊ]

'Kofi opens the door'

f. æ̀hɪ̃̀nã́ nʊ̃́ ábɔ́
[àgà-hɪ̃̀gɪ̃̀-nã́gã́ nʊ̃́gʊ̃́ ágá-bɔ̀gɔ̀] *[aga-ɕiʥi-naga nʊgʊ aga-bɔgɔ]

'The pot is broken'

g. nɪ̃̀ hʊ̃́ jɛ́ nʊ̃̀ hɪ̃̀nɪ̃̀
[nɪ̃̀gɪ̃̀ hʊ̃́gʊ̃́ jɛ́gɛ́ nʊ̃̀gʊ̃̀ hɪ̃́gɪ̃́-nɪ̃̀gɪ̃̀] *[nɪʥɪ hʊgʊ jɛʥɛ nʊgʊ ɕɪʥɪ-nɪʥɪ]
'His/her body itches him/her'

4.2.4 Underapplication in the base syllable with non-syncopated [ɪ]

As noted in the Section 2.1, Akan surface syllable inventory contains syllables in the [CrV] shape. In footnote 3, it is suggested that those syllables are derived from underlying /CɪrV/ sequences. The [-ATR, +high] vowel, present in slow or emphatic speech, is syncopated at the surface level in casual speech. As will be shown in (11), the vowel resists syncope in forms manipulated by the game. Consequently, the manipulation of an input form in the shape [CrV] results in an output form with two base syllables and two affix syllables, [Cɪgɪ-rVgV], rather than *[CrV-gV]. When the consonant in the [CrV] sequence is a velar stop i.e. *k* or *g*, the resurfacing [-ATR, +high] vowel creates a palatalizing environment in the first base syllable and its copy – in the first affix syllable. However, palatalization fails to apply. This is illustrated below.[10]

(11) APL form Expected form
a. mɪ̃̀ kɪ́á ǽnɪ̃́ áʥɪ̀
[mɪ̃̀gɪ̃̀ kígí-lágá ágá-nɪ̃́gɪ̃́ ágá-ʥɪ̀gɪ̀] *[mɪʥɪ ʨɪʥɪ-laga aga-niʥi aga-ʥɪʥɪ]
'My soul is satisfied/pleased'

[10] As in the examples in (11), only the base syllables in which palatalization underapplies are marked in bold.

b. wàká nĩ̀ tɛ́kɹ̀ɛ̀mã̀
[wàgà-kágá nĩ̀gĩ̀ tɛ́gɛ́-kìgì-lɛ́gɛ́-mã̀gã̀] *[waga-kaga nɪʥɪ tɛʥɛ-ʨɪʥɪ-lɛʥɛ-maga]
'He has bitten his (own) tongue'

c. àkwæ̀sí tì ŋ̀kɹ̀ã̀ǹ
[àgà-kʷàgà-sígí tìgì ŋ̀kìgì-làgã̀ǹ] *[aga-kʷaga-siʥi tɪʥɪ ŋʨɪʥɪ-lagan]
'Akwasi lives in Accra'

d. mæ̀hũnṹ kɹ̀áʨí nʊ̃́
[màgà-hũgṹ-nṹgṹ kìgì-lágá-ʨígí nʊ̃̀gʊ̃̀] *[maga-hugu-nugu ʨɪʥɪ-laga-ʨɪʥɪ nʊgʊ]
'I have seen the gentleman'

e. pàpá jí jɛ̀ gɹ́ámʊ̃̀
[pàgà-págá jígí jɛ̀gɛ̀ gígí-lágá-mʊ̃̀gʊ̃̀] *[paga-paga jiʥi jɛʥɛ ʥɪʥɪ-laga-mʊgʊ]
'This man is giant'

4.2.5 Generalizations

On the basis of the data presented in Sections 4.2.1–4.2.3, a number of generalizations about the application of full palatalization can be made. First, the velar stop in the affix syllable systematically fails to apply before front copy vowels [i, ɪ, e, ɛ], contrary to what would be expected from the regular phonology of Akan. Second, palatalization fails to apply in base syllables even when they are separated from the blocking environment (a following syllable beginning with an alveolar consonant) by the affix syllable. Third, palatalization is not triggered by the [-ATR, +high] vowel that is normally syncopated in regular speech but resurfaces in the manipulated forms. In the following section, I provide a formal account of underapplication of palatalization in APL couched within the framework of Optimality Theory.

5. Formal analysis

To formalize the analysis proposed in this paper, I employ the generative framework of Optimality Theory (henceforth OT; Prince & Smolensky 1993; McCarthy & Prince 1994, 1995). In OT, phonological patterns are thought to be accounted for by a set of universal violable constraints, which are organized in a hierarchical order called a ranking. Languages may differ in the way constraints are ranked.

I will assume two broad constraint types. *Markedness constraints* penalize marked surface structures: certain combinations of features within a single segment, across segments, or in specific prosodic positions. *Faithfulness constraints*, as defined in McCarthy & Prince's (1995) Correspondence Theory, evaluate two elements of a phonological representation that stand in a relation of *correspondence*. The definition of this relation is provided in (12)

(12) Correspondence (McCarthy & Prince 1995: 262; emphasis in the original)
Given two strings S_1 and S_2, **correspondence** is a relation *R* from the elements of S_1 to those of S_2. Elements $\alpha \in S_1$ and $\beta \in S_2$ are referred to as **correspondents** of one another when $\alpha R \beta$.

Faithfulness constraints require similarity along a certain dimension between correspondents. In the model proposed by McCarthy & Prince (1995), correspondence is established between elements of the input and the output (I-O correspondence) and a base and a reduplicant (B-R correspondence). However, correspondence has since then been extended to pairs of elements belonging to the same output form (Kitto & de Lacy 1999) or different output forms, for example a base and a truncated form (Benua 1995).

Specific markedness constraints will be introduced in the following sections, where I show how the patterns described above can be generated. I will begin in Section 5.1 with an OT analysis of APL manipulation of input forms. This will be followed in Section 5.2 with a discussion of full palatalization in OT. In section 5.3, it will be shown how the two interact, yielding underapplication. I focus the analysis in section 5.3 on only underapplication in the base syllable.

5.1 Generating APL forms in Optimality Theory

Recall that the rules of the game stipulate a systematic addition of a [gV] syllable to every segmented syllable of an existing word. This means that the number of elements in the output form is larger than in the input. Such a manipulation violates $\text{Dep}_{\text{I-O}}$, an Input-Output faithfulness constraint that penalizes epenthesis, defined in (13).

(13) $\text{Dep}_{\text{I-O}}$ (McCarthy & Prince 1995: 264)
Every segment of the output has a correspondent in the input.
(Prohibits phonological epenthesis.)

Since $\text{Dep}_{\text{I-O}}$ is violated in the attested output forms, this constraint must be outranked by a higher-ranked markedness constraint, which mandates an increase in the number of segments. I suggest that the responsible constraint is $\text{Morpheme}_{\text{APL}}{\geq}\sigma\sigma$, a templatic constraint specific to the APL game that places a minimality restriction on the output of the game, demanding that each morpheme in the manipulated form be minimally equal to a disyllable. The formulation of the constraint given in (14) follows Kager's (1999: 21) constraint on the shape of truncated forms.

(14) $\text{Morph(eme)}_{\text{APL}}{\geq}\sigma\sigma$ (adapted from Kager 1999: 21)
A manipulated morpheme minimally equals a disyllable

The interaction of the two constraints is illustrated in Tableau 1 with an evaluation of the input word [mɪ] 'I'. The faithful candidate (a), containing a single syllable, is eliminated due to its violation of $\text{Morpheme}_{\text{APL}}{\geq}\sigma\sigma$. The second candidate, in which a [gɪ] syllable is inserted, satisfies $\text{Morpheme}_{\text{APL}}{\geq}\sigma\sigma$ at the cost of two violations of $\text{Dep}_{\text{I-O}}$. However, since the latter constraint is ranked lower, candidate (b) emerges as optimal. Candidate (c) demonstrates that the violation of $\text{Dep}_{\text{I-O}}$ has to be minimal. Although the trisyllabic candidate does satisfy $\text{Morpheme}_{\text{APL}}{\geq}\sigma\sigma$ by being longer than a single syllable, the insertion of the third syllable incurs superfluous violations of $\textsc{Dep}_{\text{I-O}}$.

Tableau 1: Satisfaction of minimality requirements by syllable insertion

/mɪ/ 'I'	$\textsc{Morph}_{\text{APL}} \geq \sigma\sigma$	$\textsc{Dep}_{\text{I-O}}$
a. mɪ	*!	
b. ☞ mɪ.gɪ		**
c. mɪ.gɪ.gɪ		***!*

Note that the optimal output can in certain situations be trisyllabic. This is, for example, the case when input morphemes of the CVN shape are manipulated. The optimal output retains the syllabic nasal, showing the effect of $\textsc{Max}_{\text{I-O}}$, a constraint against deletion defined in (15)

(15) $\textsc{Max}_{\text{I-O}}$ (McCarthy & Prince 1995: 264)
Every segment of the input has a correspondent in the output.
(No phonological deletion.)

The operation of the constraint is illustrated in Tableau 2 with an evaluation of the input form [kʷã́ń] 'way, vacate'. Both candidates (a) and (b) include an additional [gV] syllable but candidate (a), in which the input nasal is absent, additionally violates $\textsc{Max}_{\text{I-O}}$.[11] This violation is unnecessary in the sense that it does not bring about an improvement in terms of any higher-ranked constraints.

Tableau 2: APL manipulation of a CVN morpheme

[kʷã́.ń] 'way'	$\textsc{Morph}_{\text{APL}} \geq \sigma\sigma$	$\textsc{Dep}_{\text{I-O}}$	$\textsc{Max}_{\text{I-O}}$
a. kʷã́-gã́		**	*!
b. ☞ kʷã́-gã́.ŋ̩		**	

What still remains to be accounted for is the quality of the affixed segment. Looking at the consonant first, recall that the affixed syllable invariably begins with the voiced velar [g]. I assume that in Akan, [g] is the unmarked segment. This can be expressed using a hierarchy of constraints that penalize various features, such as the one shown in (16).[12]

[11] Note that the ranking of of $\textsc{Max}_{\text{I-O}}$ cannot be established on the basis of this evaluation, so its position in Tableau 2 is arbitrary. Candidate (a) would be selected as optimal over candidate (b) irrespective of the ranking of $\textsc{Max}_{\text{I-O}}$ because it *harmonically bounds* it: both candidates have identical violations of other constraints but candidate (b) has an additional one.

[12] I adopt Clements & Hume's (Clements 1989; Hume 1992, 1996; Clements & Hume 1995), *Unified Feature Theory* model of feature geometry, in which the same articulator features (Labial, Coronal, and Dorsal) can be used for both consonants and vowels, thought they are linked to distinct organizational nodes: C-Place in consonants and V-Place for vowels. Velar consonants and back vowels are specified as [Dorsal], while palatal and alveolar consonants, as well as front vowels, are specified as [Coronal].

(16) Consonant markedness hierarchy for Akan APL
*C-Place(Lab), *C-Place (Cor), *[+nasal] » *C-Place(Dor)

The velar consonant, specified as [Dorsal], violates the lowest-ranked feature markedness constraint. Consequently, inserting [g] is less costly than inserting a bilabial or coronal segment. To ensure that those less marked consonants are allowed to surface when they are present in the underlying form, the markedness constraints have to be outranked by $\text{Ident}_{I\text{-}O}$(F), a faithfulness constraints that requires that corresponding input and output segments be identical in terms of a certain feature. Crucially, the constraint, defined in (17) is blind to epenthetic segments, which do not have input correspondents. This allows the effect of the constraint hierarchy in (16) to emerge.

(17) $\text{Ident}_{I\text{-}O}$(F) (McCarthy & Prince 1995: 264)
Output correspondents of an input [αF] segment are also [αF].

The interaction of the markedness hierarchy with $\text{Ident}_{I\text{-}O}$(F) is illustrated in Tableau 3 with a repeated evaluation of the APL manipulation of the word [mɪ] 'I'.[13] This time, the considered candidates differ in terms of their consonantal quality. In candidate (a), the appended syllable begins with a bilabial nasal. As a result, the candidate incurs two violations of *C-Place(Lab): one for the consonant in the base syllable and one for the affixed consonant. In candidate (b), where the affixed consonant is [g], one violation of *C-Pl(Lab) is exchanged for one violation of *C-Pl(Dor). Because *C-Pl(Lab) is ranked higher, candidate (a) is eliminated. Finally, candidate (c) demonstrates that while replacing the bilabial nasal in the base syllable with a velar stop fully satisfies *C-Pl(Lab), it leads to a fatal violation of higher-ranked $\text{Ident}_{I\text{-}O}$(F), which excludes this candidate.

Tableau 3: Default insertion of [g] in APL

/mɪ/ 'I'	Morph_{APL}≥σσ	$\text{Dep}_{I\text{-}O}$	$\text{Ident}_{I\text{-}O}$(F)	*C-Pl(Lab)	*C-Pl(Dor)
a. mɪ.mɪ		**		**!	
b. ☞ mɪ.gɪ		**		*	*
c. gɪ.gɪ		**	*!		**

Moving to the determination of the quality of the vowel in the appended syllable, recall that in APL, the vowel is copied across the affixed consonant. An OT approach to copy epenthesis has been proposed by Kitto & de Lacy (1999), who argue that the quality of the epenthetic vowel should be enforced by a new type of Identity constraints, sensitive to a 'horizontal' correspondence relation between an epenthetic segments and its base, (18), as opposed to the 'vertical' relation between the input and the output in $\text{Ident}_{I\text{-}O}$(F), defined in (17).

(18) $\text{Ident}_{B\text{-}E}$(F) (Kitto& de Lacy 1999: 182–183)
The epenthetic element and its base have identical values for feature F.

[13] For compactness, only two feature markedness constraints are shown in Tableau 3. The *C-Place (Cor) constraint is satisfied by the three candidates and the violations of *[+nasal] are analogous to the violations of *C-Place(Lab).

However, using this constraint to account for the vowel quality in APL would cause problems elsewhere in the language. In Akan, copy epenthesis is found not only in APL but also in loanword adaptation. Yet as observed by Adomako (2008), the two processes differ. While in APL, a vowel of any quality can be copied, in Akan loanword phonology only non-low vowels can. In instances in which a low vowel is the potential source of copied features, the unmarked high front vowel [ɪ] surfaces instead. Using the same constraint to account for copy epenthesis in loanwords and in APL would make the incorrect prediction that the two processes are identical. Depending on the relative ranking of $\text{Ident}_{B\text{-}E}$(F), we would either predict that in APL, low vowels cannot be copied or that in loanword adaptation, all vowels can. To solve this problem, I propose to extend the Correspondence Theory to relations between the manipulated form and its base, as first suggested by Itô, Kitagawa & Mester (1996: 222ff; see also Borowsky & Avery 2009 and Borowsky 2010). Here, the relevant constraint is $\text{Ident}_{B\text{-}APL}$(F), defined in (19), which requires feature identity between corresponding segments in the manipulated form and the base word.

(19) $\text{Ident}_{B\text{-}APL}$(F)
Corresponding elements in the base form and the APL form have identical values for feature F.

Note that the constraint is violated in the optimal game forms whenever the base consonant is other than [g]. This suggests that $\text{Ident}_{B\text{-}APL}$(F) is ranked lower than the markedness constraints penalizing marked consonantal segments (some of which are listed in 16) but higher than markedness constraints governing the quality of epenthetic vowels. An illustrative fragment of the resulting constraint hierarchy is given in (20).

(20) Constraint ranking for default [g] insertion and vowel epenthesis in APL[14]
*C-Pl(Lab), … » *C-Pl(Dor) » $\text{Ident}_{B\text{-}APL}$(F) » *V-Pl (Dor), … » *V-Pl(Cor)

The above discussion is summarized with the evaluation of the form [ba] ‘child’ in Tableau 4.[15] Candidate (a), in which the appended syllable is the exact copy of the base syllable fatally violates the markedness constraint penalizing labial consonants and is thus eliminated. In candidate (b), the appended syllable contains the unmarked consonant [g] and the unmarked vowel [ɪ]. While the consonant satisfies the highest-ranked markedness constraints, the vowel quality causes a fatal violation of $\text{Ident}_{B\text{-}APL}$(F). In candidate (c), the consonant in the base syllable is replaced with the unmarked [g]. While this results in the complete satisfaction of *C-Pl(Lab), it violates an even higher-ranked constraint, $\text{Ident}_{I\text{-}O}$(F). As a result, candidate (d), in which the segments in the base syllable are identical to the input, satisfying $\text{Ident}_{I\text{-}O}$(F), emerges as the winner. Even though it violates each of the remaining constraints, those violations are minimal: *C-Pl(Lab) is violated by the labial sound in the base syllable in order to satisfy higher-ranked $\text{Ident}_{I\text{-}O}$(F); in the appended syllable, where $\text{Ident}_{I\text{-}O}$(F) is mute, the consonant is replaced with [g], which satisfies *C-Pl(Lab) but violates the lower-ranked *C-Pl(Dor). The lack of identity

[14] To account for the loanword adaptation pattern, the $\text{Ident}_{B\text{-}E}$(F) constraint defined in (18) would have to be ranked lower than a markedness constraint against low vowels but higher than any constraint against mid, tense or rounded vowels, which in turn would have to be ranked higher than any constraints penalizing the high front lax vowel [ɪ].

[15] For compactness, the two highest-ranked constraints, $\text{Morph}_{APL}\geq\sigma\sigma$ and $\text{Dep}_{I\text{-}O}$ are omitted and only candidates that satisfy them are considered.

between the two consonants causes a violation of low-ranked IDENT$_{B\text{-}APL}$(F). However, another potential violation of this constraint is avoided thanks to the identity of the appended vowel and the base vowel. While this vowel violates some of the markedness constraints on vowel quality, these are ranked too low to matter in the evaluation.

Tableau 4: Default insertion of [g] and copy epenthesis in APL

/ba/ 'child'	IDENT$_{I\text{-}O}$ (F)	*C-PL (LAB)	*C-PL (DOR)	IDENT$_{B\text{-}APL}$ (F)	*V-PL (DOR),
a. ba.ba		**!			*
b. ba.gɪ		*	*	**!	
c. ga.ga	*!		**		*
d. ☞ ba.ga		*	*	*	*

5.2 Full palatalization in Optimality Theory

I assume that the constraint responsible for triggering full palatalization in regular Akan phonology is a markedness constraint that assigns violations for a sequence of a velar consonant followed by a front vowel in the domain of a syllable, defined in (21).[16]

(21) *DOR, CORσ
A sequence of segments of which the first is specified as [Dorsal] and the second is specified as [CORONAL] is prohibited within a syllable.

The constraint can be satisfied by palatalization, that is, by replacing the input velar segments with its palatal equivalent. To enable this process, *DOR, CORσ has to be ranked lower than the constraint that prevents unfaithful mapping between the input and the output, IDENT$_{I\text{-}O}$(F), defined in (17) above. The interaction of these two constraints is illustrated in Tableau 5. The evaluated form is [tɕɪ] 'catch', derived from underlying /kɪ/. The faithful candidate (a) contains a velar consonant followed by a front vowel, in violation of *DOR, CORσ. In the palatalizing candidate (b), this violation is avoided because both segments in the sequence are specified as [CORONAL]. Although the change incurs a violation of IDENT$_{I\text{-}O}$(F), the constraint is ranked lower than *DOR, CORσ and the unfaithful candidate emerges as the winner.

Tableau 5: Full palatalization in regular Akan phonology

/kɪ/ 'catch'	*DOR, CORσ	IDENT$_{I\text{-}O}$(F)	OCP(COR)σ
a. kɪ	*!		
c. ☞ tɕɪ		*	*

[16] Recall that in Clements & Hume's (1995) model of feature geometry, front vowels are specified as [CORONAL] and velars are specified as [DORSAL].

5.3 Underapplication of palatalization

As discussed in Section 4.2., full palatalization systematically underapplies in forms modified by the APL game in three contexts. First, the appended syllable contains the voiced velar consonant [g] even if the copied vowel that follows it is front. Second, palatalization fails to apply in base syllables even when the syllable is separated from the blocking environment (a following syllable beginning with an alveolar consonant) by the affix syllable. Third, palatalization is not triggered by the [-ATR, +high] vowel that is normally syncopated in regular speech but resurfaces in the manipulated forms.

I propose to account for the first type of underapplication by means of an OCP constraint that prohibits adjacent coronal segments that belong to different syllables, defined in (22).

(22) OCPσ(Cor)σ
A heterosyllabic sequence of segments specified as [Coronal] is prohibited.

This constraint will be mute on form such as [tɕɪ] 'catch', evaluated above, because they contain a sequence of coronal segments within the same syllable. However, in APL-manipulated forms, palatalization of the [g] segment would result in a [Coronal] base vowel followed by a [Coronal] palatalized consonant. Thus, ranking OCPσ(Cor)σ higher than the palatalization-enforcing constraint *Dor, Corσ will have no unwelcome effects in the evaluation of simple monosyllabic forms but will block palatalization in the appended syllable in APL. This is shown below with the evaluation of the modified form of /mɪ/ 'I'. Candidate (a) contains a sequence of a velar followed by a front vowel, in violation of the palatalization trigger. However, the satisfaction of this constraint in candidate (b) leads to the creation of a sequence of adjacent [Coronal] segments spanning a syllable boundary [ɪ.dʑ], which fatally violates higher-ranked OCPσ(Cor)σ.

Tableau 6: Underapplication of palatalization in affixed syllables

/mɪ/ 'I'	OCP σ(Cor)σ	*Dor, Corσ	$\text{Ident}_{\text{I-O}}$ (F)	*C-Pl (Lab,Cor)	*C-Pl (Dor)
a. ☞ mɪ.gɪ		*		*	*
d. mɪ.dʑɪ	*!			*,*	

6. Conclusion

This paper has discussed the behavior of velar-front vowel sequences in a version of Akan Pig Latin, popularly termed *Megesege*. It has been shown that such sequences, which undergo the process of palatalization in regular Akan phonology, resist the process in the forms derived by the game in three different contexts in which a palatalizing environment is created. The paper thus contributes to the body of knowledge of underapplication of Akan palatalization, which has so far been only observed in the domain of reduplication and loanword adaptation. The paper has offered an explanation for the failure of palatalization in APL couched within the OT framework. The underapplication has been attributed to a high-ranked OCP[Coronal] constraint that prohibits the co-occurrence of adjacent [Coronal] segments in neighboring syllables.

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