Tanulmány

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On Three -rb- Language Games in Arabic

Abstract

Three language games in Arabic involving the addition of the consonant cluster -rb- are analyzed. In a Yemeni Arabic game used in Hadramaut (HG), /aarb/ is systematically added after the onset of the stressed syllable of every word. In a Jordanian Arabic game (JG), /irb/ or /urb/ is added after the onset of the first syllable of each word. The variation in the vowel is a result of assimilation to a following rounded vowel. In a Meccan Arabic game (MG), a /VVrb/ template is added after the onset of the stressed syllable of every word. The quality of the long vowel is determined by the vowel in the stressed syllable. Reference is made to different models used in the discussion of language games. Hayes's (1989) syllable-infixing approach is used to discuss the HG and JG. McCarthy's (1982) template-insertion model and Botne and Davis's (2000) segment-imposition approach are shown to be insufficient for a proper analysis of the MG. Abu-Abbas's (2009) templatic-imposition approach is used to handle the MG providing evidence for this approach.
Keywords: language games, imposition, Arabic

1   Introduction

A language game is a mode of communication based on a normal language, or a base language, but with systematic alterations that make the language game incomprehensible to those who do not speak it though they might speak the base language. Accordingly, the study of language games is of importance to social linguists, who seek to uncover the social motivations behind the invention and use of such forms of speech disguise or secret languages. A language game marks membership of a group, provides a pastime, and ensures secrecy when performing a certain activity (Walter 2002).

Language games are also of interest to phonologists, who seek to analyze the structure of these secret languages and how they are formulated. Furthermore, the structure of language games provides an insight into the structure of the base language. The rule-governed behaviour of the language game is a reflection of either the deep or surface structure of the base language.

This paper is phonologically, rather than socially, oriented. It seeks to discuss three language games in Arabic which involve the use of the cluster -rb- in a variety of ways. Differences as well as similarities between the three language games are discussed. It will be shown that the HG and JG are cases of syllable-infixing language games as discussed by Hayes (1989), while the MG resists previous accounts, namely McCarthy's template-insertion approach (1982) and Botne and Davis's segment-imposition model (2000). The game will by

analyzed using Abu-Abbas's templatic-imposition model (2009). A brief sociolinguistic note is provided in section 5.

1.1   *Review of literature*

Language games in which the phonological composite of words is systematically disguised have been extensively documented for typological comparisons. The two most common types of language games entail the transposition of phonological constituents (usually syllables) and the addition of phonemes at one or more locations within the word (Botne and Davis 2000: 319). In transposition-type games, syllables are moved from one place to another within the word, providing evidence for the reality of the syllable as a phonological unit and the nature of syllabification in a given language. The initial and final syllables or the final two syllables may be transposed, as in Tagalog (1) and the *kinshingelo* game[1] in Sanga (2) respectively[2].

(1)   Tagalog   [Conklin 1956]
         kapatid   ⟶   tidpaka   'sibling'
(2)   Sanga   [Kenstowicz and Kisseberth 1979]
         óbé múkwèètù twááyáá kú múkólá   ⟶   béó mútùùkwè yáátwáá kú múlákó
            'Toi, mon compagnon, viens avec moi à la rivière!'
            'You, my friend, come with me to the stream!'

Language games that involve the addition of phonemes are of two categories. In the first, phonemes are added to different parts of the word. Such games are called insertion-type games as in Hausa, German, and Indonesian, (3-5 respectively):

(3)   Hausa   [Alidou 1997]
         tsíntsíyáa   ⟶   dá-tsín-dà-tsìi-dà-yáa   'broom'
(4)   German   [Pound 1963]
         knabe   ⟶   kná-bi-bé-bi   'boy'
(5)   Indonesian [Pound 1963]
         kasakóla   ⟶   kasakol-árk-a   'school'

The insertion may be a prefix as in Hausa, a suffix as in German, or an infix as in Indonesian to one or more syllables within a word. The infix is usually after a syllable onset or between moras. The second category involves the insertion of a CV-template after a particular vowel or even each vowel in the word. The inserted consonant is usually prespecified, while the vowel results from the spreading of the preceding vowel. Examples of such language games are found in Hungarian [Pound 1963] and Spanish [Davis 1993], as shown in (6) and (7) respectively:

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[1]   In this game the final two syllables are permuted except for the prosodic features of length and tone. This language game is provided as evidence for an independent tonal tier. In the example cited, length is marked by doubling the vowel, acute and grave accents represent high and low pitch, and an acute-grave sequence indicates a falling contour (Kenstowicz and Kisseberth 1979: 167).

[2]   For a typological survey of language games, refer to Pound (1963), Laycock (1972), Bagemihl (1988), and Davis (1993). Most examples used in this paper are cited in Botne and Davis (2000).

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| (6) | soha | ⟶ | so-vo-ha-va | 'never' |
| (7) | grande | ⟶ | gra-fa-nde-fe | 'big' |

1.2 Language games in Arabic

Language games in Arabic have been well documented. Hijaazi and Moroccan Arabic, in particular, have been extensively researched. Language games in these two varieties have been used as evidence for the reality of the triliteral root consonants to native speakers (al-Mozainy, 1982). Games based on consonant permutation only involve permutation of the root consonants while affixes remain in their original positions, as shown in (8):

(8)   Root-consonant permutation in Hijaazi Arabic[3]

a. difaʕ-na	b. iħtaram	c. darras-na
daʕaf-na	iħtimar	dassar-na
fidaʕ-na	irtiħam	raddas-na
faʕad-na	irtimaħ	rassad-na
ʕafad-na	imtaraħ	sadder-na
ʕadaf-na	imtaħar	sarrad-na
'we paid'	'to respect'	'we taught'

Al-Mozainy (1982) provides explanation for the differences in the vowels in (8a). These differences do not affect the overall use of the language game.

Other language games have been reported as well: in Lebanese Arabic, /za/ is prefixed to the word while Iraqi Arabic prefixes /sV/, where the vowel is determined by the following syllable (Pound 1963). Burling (1970) documents a Cairene Arabic language game in which the syllable /tin/ is infixed within the nucleus of the penultimate syllable.

2 Three -rb- language games

In the literature on Arabic language games, there are two language games reported that involve the use of the consonant cluster -rb- in different ways. A third -rb- language is introduced by the authors of this paper.

2.1 The Yemeni language game

Walter (2002) documents a language game in Hadramaut, Yemen, where /aarb/ is invariably inserted before the stressed vowel of each word. Data in (9) exemplify, where the stressed vowel is underlined:

(9)   /aarb/ infixing in the HG

	a. saʕ<u>ii</u>d	saʕaarb<u>ii</u>d	'Said'
	b. muk<u>a</u>lla	muk<u>aa</u>rballa	'Mukalla'

---

[3]   The voiced and voiceless pharyngeal fricatives are symbolized by a /ʕ/ and /ħ/ respectively.

These are the only two examples provided by Walter (2002). Her interest is more in the functions of the game rather than its phonological structuring. Based on her analysis of the game, data in (10) are provided by the authors of this paper after native speakers of Yemeni Arabic have been consulted for lexical accuracy:

(10)   More data on /aarb/ infixing in the HG
      a. maalak   maarbaalak   'your money'
      b. samiin   samaarbiin   'fat'
      c. muluuk   mulaarbuuk   'kings'
      d. balad   baarbalad   'country'
      e. baladna   balaarbadna   'our country'
      f. malik   maarbalik   'king'

This game is a classic example of phonemic-insertion games as analyzed by Hayes (1989). /aarb/ is infixed before the vowel with primary stress. The consonants are pre-specified and so is the vowel. The phonetic content of the base word does not influence the phonetic content of the infix.

    The infix targets the stressed syllable in each word. Otherwise, data in (9) would have surfaced as in (11) had the game targeted the initial syllable and as in (12), had it targeted the final syllable:

(11)   Targeting the initial syllable
      a. saʕiid   saarbaʕiid
      b. mukalla   maarbukalla

(12)   Targeting the final syllable:
      a. saʕiid   saʕaarbiid
      b. mukalla   mukallaarba

Stress is assigned based on syllable structure of the game word. The stressed syllable in the root word may change according to the new syllable structure on the game word as shown in (10 d-f) where the long vowel of the infix is stressed rather than the short vowel of the root.
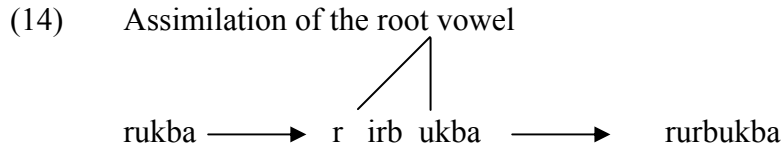
2.2   The Jordanian language game

Fieldwork by the authors conducted in 2008, yielded a language game involving the addition of either /irb/ or /urb/ after the onset of the initial syllable in every lexical word. /urb/ is used only when the initial syllable has a rounded vowel. In (13) stressed syllables are underlined.

(13)   /irb/-/urb/ insertion the JG
      a. salaam   sirbalaam   'peace'
      b. rimaal   rirbimaal   'sand'
      c. raakib   rirbaakib   'passenger'
      d. qiima   girbiima   'value'
      e. qaamuus   qirbaamuus   'dictionary'
      f. rukba   rurbukba   'knee'
      g. suuri   surbuuri   'Syrian'

h. xuj<u>uu</u>l	xurbuj<u>uu</u>l	'horses'
i. mur<u>ii</u>b	murbur<u>ii</u>b	'suspicious'

In (13 a-e), /irb/ is inserted after the onset of the initial syllable while in (13 f-i), /urb/ is inserted in the same position due to the presence of a rounded vowel in the initial syllable. The fact that /irb/ is inserted when the vowel in the initial syllable is anything but a rounded vowel suggests that /urb/ is a result of a regressive assimilation process between the root vowel and the vowel of the infix as shown in (14):

(14)   Assimilation of the root vowel

rukba ——⟶ r irb ukba ——⟶   rurbukba

The insertion targets the initial syllable irrespective of stress and the stressed syllable in the root word remains stressed in the language game.

   Similar to the HG, this game is a classic example of phonemic-insertion games as analyzed by Hayes (1989). However, three major differences distinguish between the two games. On the one hand, the location of the inserted material is different. While the HG inserts before the vowel of the stressed syllable, the JG inserts before the vowel of the initial syllable irrespective of stress. On the other hand, stress rules in the HG operate post the insertion. The syllable structure of the game words determines the location of the stressed syllable. In the JG, the stressed syllable of the root word remains stressed in the game word. Finally, while in the HG the phonetic content of the root does not affect the infix, rounded vowels in the initial syllable in the JG spread to the infix.

2.3   The Meccan game

The third /-rb/ language game is documented by Bakalla (2002) in Meccan Arabic where a long vowel followed by /rb/ is inserted before the stressed syllable of each word. The phonetic content of the long vowel results from vowel spreading, as shown in (15):

(15)   /VVrb/ addition in the MG

a. f<u>ii</u>l	fiirb<u>ii</u>l	'elephant'
f<u>uu</u>l	fuurb<u>uu</u>l	'beans'
g<u>aa</u>l	gaarb<u>aa</u>l	'he said'
b. <u>a</u>ħmad	aarb<u>a</u>ħmad	'Ahmad'
qurʔ<u>aa</u>n	qurʔ<u>aa</u>rbaan	'Koran'
h<u>i</u>na	hiirb<u>i</u>na	'here'
c. aħt<u>a</u>ram[4]	aħt<u>aa</u>rb<u>a</u>ram	'he respected'
altag<u>aa</u>h	altag<u>aa</u>rb<u>aa</u>h	'he found it'
g<u>aa</u>balu	gaarb<u>aa</u>balu	'he met him'

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[4]   The opaque stress in this word is not addressed by Bakalla. This pattern, I believe, is opaque since the initial vowel in the word is epenthetic and stress avoids stressing epenthetic vowels.

Like the HG and unlike the JG, the MG targets the stressed syllable. However, while the HG involves the insertion of an infix where the vowel and consonants are pre-specified for phonetic content, the MG differs in that only the consonants /-rb/ are pre-specified for phonetic content. The quality of the long vowel preceding the consonants is determined by the vowel in the stressed syllable. The games also differ in stress assignment. In the HG, stress is assigned based on the structure of the game word while in the MC, like the JG, the stressed syllable of the root word remains stressed in the game. Data in (15) are repeated in (16) and (17) using the rules of the HG and JG, respectively.

(16) HG

    a. fiil   faarb<u>ii</u>l   'elephant'
        fuul   faarb<u>uu</u>l   'beans'
        gaal   gaarb<u>aa</u>l   'he said'
    b. aħmad   <u>aa</u>rbaħmad   'Ahmad'
        qurʔaan   qurʔaarb<u>aa</u>n   'Koran'
        hina   h<u>aa</u>rbina   'here'
    c. aħtaram   aħt<u>aa</u>rbaram   'he respected'
        altagaah   altagaarb<u>aa</u>h   'he found it'
        gaabalu   gaarb<u>aa</u>balu   'he met him'

(17) JG

    a. f<u>ii</u>l   firb<u>ii</u>l   'elephant'
        <u>fuul</u>   furb<u>uu</u>l   'beans'
        <u>gaal</u>   girb<u>aa</u>l   'he said'
    b. <u>a</u>ħmad   irb<u>a</u>ħmad   'Ahmad'
        qurʔ<u>aa</u>n   qurburʔ<u>aa</u>n   'Koran'
        h<u>i</u>na   hirb<u>i</u>na   'here'
    c. aħt<u>a</u>ram   irbaħt<u>a</u>ram   'he respected'
        altag<u>aa</u>h   irbaltag<u>aa</u>h   'he found it'
        g<u>aa</u>balu   girb<u>aa</u>balu   'he met him'

The MG is of special interest since the quality of the long vowel is determined by the vowel in the stressed syllable. It will be shown that Hayes's (1989) syllable-infixing approach, McCarthy's (1982) template-insertion model and Botne and Davis's (2000) segment-imposition approach fall short of accounting for the facts in the MG. Alternatively, Abu-Abbas's (2009) Templatic-imposition approach is used to handle the MG providing evidence for this approach.

3 Previous accounts

3.1 *Syllable affixing*

In the syllable infixing approach to language games, a pre-specified phonetic content is inserted in various, language dependent, positions within the word. The phonetic content may be a single segment, usually a consonant, or a consonant followed or proceeded by a vocalic gesture. The location of insertion varies but usually makes reference to syllable structure. Examples of such language games were introduced earlier in section 1.1.

The HG discussed earlier is accounted for by making reference to this approach since the consonants /-rb/ and the long vowel /aa-/ are pre-specified for their phonetic content. The insertion takes place before the stressed vowel of each word. The JG is also analyzed is a case of syllable affixing where /-irb/ is inserted before the vowel of each word. The vowel of the inserted affix assimilates to a rounded vowel in the first syllable of the word as explained in 2.2.

The MC, however, cannot be analyzed as a case of syllable insertion. The quality of the vowel is not pre-specified for phonetic content. It acquires its quality from the vowel in the following stressed syllable.

3.2   Template insertion

The traditional analysis of the MG discussed in 2.3 would suggest an insertion of the template /VVrb/ where the consonants are pre-specified for phonetic content and the quality of the vowels realized by a spreading process of the following vowel (McCarthy 1982) as shown in (18) and (19) for /gaabalu/ and / fuul / respectively.

(18)   Template insertion for /gaabalu/

gaabalu ⟶ g VVrb aabalu ⟶ gaarbaabalu   'he met him'

(19)   Template insertion for /fuul/

fuul ⟶ f VVrb uul ⟶ fuurbuul   'beans'

Although this approach seems to account for the data under investigation, a theoretical problem emerges. Neither the structure of the template nor the insertion site is specified by the approach. In (18) and (19), the template is analyzed as being a long vowel followed by the consonants /-rb/ inserted *before* the stressed vowel with regressive vowel spreading satisfying the vocalic melody of the inserted template. However, an equally viable argument can be provided where the template inserted is /rbVV/ *after* the stressed vowel with progressive vowel spreading to satisfy the vocalic melody of the inserted template, as can be seen in (20) and (21) for /gaabalu/ and /fuul/ respectively.

(20)   /rbVV/ insertion for /gaabalu/

gaabalu ⟶ gaa rbVVbalu ⟶ gaarbaabalu

(21)   /rbVV/ insertion for /fuul/

fuul ⟶ fuu rbVV l ⟶ fuurbuul

Syllables with short vowels favor the /VVrb/ over /rbVV/ insertion as shown in (21) and (22), respectively, for the word /hina/.
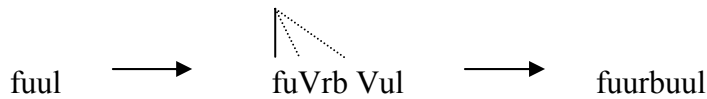
(21)   /VVrb/ insertion

hina ⟶ hVVrb i na ⟶ hiirbina   'here'

(22)   /rbVV/ insertion

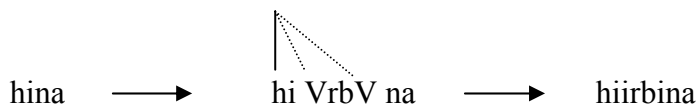hina ⟶ hi rbVV na ⟶ *hirbiina   'here'

Insertion of /rbVV/ generates the wrong game word in (22).

However, a third type of template may be suggested that generates the correct game words for all the data. It could be argued that /VrbV/ is inserted after the first mora of the stressed syllable as shown in (23-24) for /fuul and hina/:

(23)   /VrbV/ isertion for /fuul/

fuul ⟶ fuVrb Vul ⟶ fuurbuul

(24)   /VrbV/ insertion for /hina/
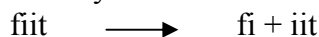
hina ⟶ hi VrbV na ⟶ hiirbina

The structure and insertion site are thus fatal shortcoming of the template-insertion approach to such language games.

3.3   Segment imposition

To avoid the complication outlined above, Botne and Davis (2000: 320) make a novel distinction between insertion-type games and imposition-type games. They argue that in imposition-type games, a consonant articulation is imposed on the prosodic peak of the vocalic gesture. The imposed consonant splits the vocalic gesture into two vowels. Each of these vowels will belong to a different syllable creating what Fujimura (1979), Fujimura and Lovins (1982), and Clements (1988, 1990) analyze as two demisyllables[5]. The demisyllable, according to Fujimura (1979), Fujimura and Lovins (1982), is a gestural/acoustic notion. The first demisyllable is made up of the initial consonant(s) plus the vocalic peak and reflects the transition from the beginning of the syllable into the vowel steady state. The second demisyllable is made up of the vocalic peak plus any syllable final consonant(s), and reflects the transition out of the steady state vowel. Accordingly, the two demisyllables in the English word /feet/ are shown in (25):

(25)   Demisyllables in the word 'feet':
        fiit ⟶ fi + iit

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[5]   For the advantages of demisyllables in the discussion of imposition-type games, refer to Botne and Davis (2000).

An imposition-type game would impose a consonant between these two demisyllables.

Botne and Davis further divide languages into syllable-prominent and mora-prominent languages. In the former, consonant imposition splits the vocalic peak, which may be the first or second mora of a diphthong. Consider, for example, the Spanish language game in (26) where the imposed consonant /f/ splits the first part of the diphthong in (23a, b) while it splits the second part of the diphthong in (26c). The difference is that in (26a, b), the peak of the diphthong is the initial part while it is the second part in (26c).

(26)   Spanish f-imposition
      a. hoi ⟶ hofoi   'today'
      b. baile ⟶ bafailefe   'dance'
      c. fʋe ⟶ fʋefe   'went (3rd pers.)'

On the other hand, mora-prominent languages involve an imposition of a consonant on every mora in the syllable. Such is the case in Japanese, where /b/ is imposed on every mora of the diphthong in the word /hai/ 'yes' as exemplified in (27).

(27)   Japanese b-imposition

Word	Demi-moras	b-imposition
hai	h a a i i	habaibi

Accordingly, the segment-imposition approach would suggest the imposition of the consonants /-rb-/ on the stressed vowel of each syllable. This approach, however, cannot account for the long vowel which is present in all game words regardless of the duration of the vowel in the root word. This scenario is exemplified in (28) where imposition takes place on the first mora, in (29) with imposition on the second mora, and in (30) where the stressed syllable features a short vowel (demi-syllables are separated by a hyphen).

(28)   /-rb-/ imposition on the first mora

	Demi-syllables	/-rb-/ imposition	
fuul	fu-uul	*furbuul	'beans'

(29)   /-rb-/ imposition on the second mora

	Demi-syllables	/-rb-/ imposition	
fuul	fuu-ul	*fuurbul	'beans'

(30)   /-rb-/ imposition on short vowels

	Demi-syllables	/-rb-/ imposition	
hina	hi-i na	*hirbina	'here'

4   Template imposition

To avoid the problems discussed above, I will follow Abu-Abbas (2009) in his analysis of a language game in Jordanian Arabic called 'Birds Language' (BL). His approach is based on Botne and Davis's segment-imposition approach but departs from their analysis in suggesting that instead of imposing a consonant articulation on the vocalic gesture, BL involves an imposition of a bimoraic template on the first mora of each syllable. This bimoraic template has /z/ as its onset. This consonant is followed by two unspecified moras. Then the first step

would be splitting the first mora of each syllable into two and then imposing the bimoraic template. The two moras of the imposed syllable must be phonetically realized except phrase finally. The first mora is automatically satisfied as a result of the imposition process. If the second mora is not satisfied, the onset of the following syllable spreads and fills this empty mora creating a geminate.

Application of this game involves a complex mapping of a bimoraic template headed by /z/ to a necessarily heavy syllable. This implies that the first step in the application of this game is preparation of the input so that each word is strictly made up of heavy syllables. If this scenario is not readily available in the input, i.e. in the presence of CV syllables, the Onset (O) of a following syllable is pulled so that it becomes coda of the preceding light syllable. This does not happen if the CV syllables are word final since there is no following consonant to pull. This is exemplified in (31) for data from Jordanian Arabic using BL.

(31)   Application of BL: step one

ʔa.ka.la	⟶	ʔak	kal	la			'ate'
qaa.la	⟶	qaa	la				'said'
mak.ta.bon	⟶	mak	tab	bon			'an office'
saam.mon	⟶	saam	mon				'posonous'
ʔin.ti.maa.ʔo.na	⟶	ʔin	tim	maa	ʔon	na	'our belonging'

Crucial to the creation of heavy syllables in this game are onsets preceded by light syllables. Thus, the argument is that the creation of heavy syllables starts by seeking the onset of each syllable in the original word. If an onset is preceded by a CV syllable, that onset spreads regressively and becomes coda of the light syllable creating a heavy syllable, as shown in (32a, b) for /ʔa.ka.la/ and /ʔin.ti.maa.ʔo.na / respectively:
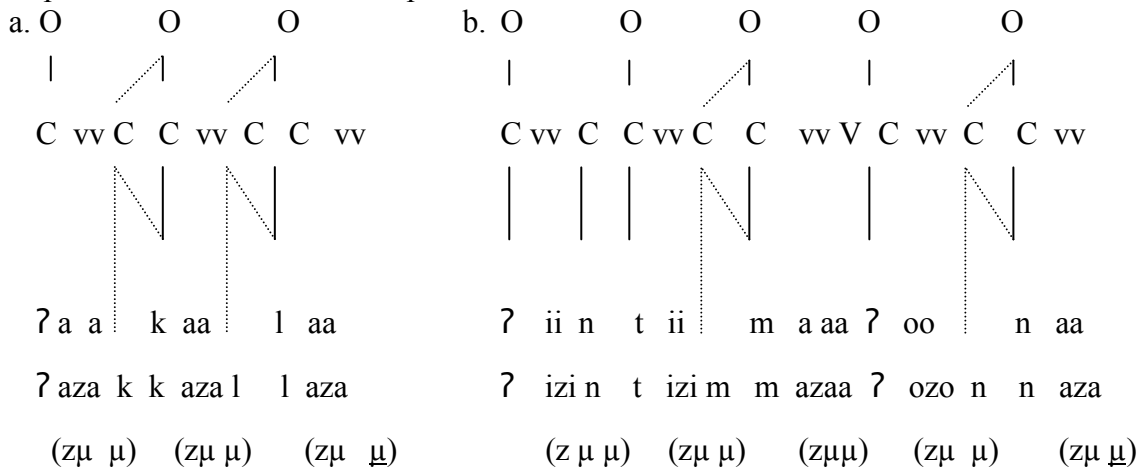
(32)   Creating heavy syllables:

Before the bimoraic template is imposed, the first mora of each syllable must be split into two demi-syllables. The onset of the imposed bimoraic template, i.e. /z/ is now onset to every heavy syllable in the word, except in final position, where syllables headed by /z/ may be light.

Then the first mora of the template is automatically satisfied by the imposition process since /z/ is necessarily followed by the second part of the vowel previously split by the process (the split vowel is written in lower case letters). The second mora is satisfied either by the presence of a long monophthong or a diphthong in the original word, i.e. a CVV syllable, or when the original syllable is closed by a coda consonant, i.e. CVC. If the original syllable is open with a short vowel, i.e. CV, the second mora of the imposed template is satisfied by the spreading of the onset from a following syllable unless the CV syllable is word final, in

which case the second mora is left empty. This is shown in (33), where the empty moras are underlined:

(33)   Imposition of the bimoraic template:

To recap, CV syllables in BL require spreading of a following onset creating cases of gemination as shown in (34):

(34)   CV syllables

Word	Demi-syllables	zµµ-imposition
ʔakala	ʔa a ka a la a	ʔazaµ kazaµ lazaµ

After the imposition of the bimoraic template, the second and fourth syllables have unrealized moras. These are filled by a spreading process of the following consonant, producing the desired output /ʔa.zak.ka.zal.la.za/. The second mora of the final syllable cannot be filled by the spreading process from a following consonant because no such consonant exists. The second mora is thus left empty.

On the other hand, CVV syllables do not require consonant spreading since the second mora of the imposed template is satisfied by the long vowel, as exemplified in (35):

(35)   CVV syllables

Word	Demi-syllables	zµµ-imposition
naam	n aa a m	nazaam

The spreading rule is not needed since the imposition of the bimoraic template takes place on the first mora and thus splitting the first syllable into /na/ and /aa/. The two moras of the imposed template are filled by the two vowels, producing /na/ and /zaa/.

Consonant spreading is also inactive in the presence of closed syllables. If a word has a closed syllable like /bad.la/ meaning (a suit), the second mora of the imposed template is satisfied by the coda consonant of the first syllable. The resulting word would thus be /ba.zad.la.za/ as shown in (36).

(36)   CVC syllables

Word	Demi-syllables	zµµ-imposition
badla	ba ad la a	bazadlazaµ

More complex syllables are unproblematic as well. CVCC syllables satisfy the bimoraic template straightforwardly, as shown in (37) for /bard/ meaning 'cold'.

(37)   CVCC syllables
       <u>Word</u>   <u>Demi-syllables</u>   <u>zμμ-imposition</u>
       bard   baard   bazard

4.1   Template imposition and the MG

The templatic imposition approached can be extended to account for the MG. In BL, a bimoraic template headed by /z/, i.e. (zμμ) is imposed on the vocalic melody of every syllable. In the absence of a long vowel to satisfy the second mora, the consonant from a following syllable fills in the empty mora creating a geminate. In the MG, however, a bimoraic template closed by /rb/, i.e. (μμrb) is imposed on the vocalic melody of the stressed vowel. The empty mora is satisfied by vowel spreading as shown in (38a-d) for /fuul/, /hina/, /altagaah/, and /gaabalu/ respectively.

(38)   /-μμrb/ imposition in the MG

	Root word	Demi-syllables	/μμrb/ imposition μμrb	Game word	Gloss
a.	fuul	fu-uul	fu uul	fuurbuul	'beans'
b.	hina	hi-ina	hi ina	hiirbina	'here'
c.	altagaah	altaga-aah	altaga aah	altagaarbaah	'he found it'
d.	gaabalu	ga-aabalu	ga aabalu	gaarbaabalu	'he met him'

In (38a-d), the bimoraic template (μμrb) is imposed on the first mora of the stressed vowel creating two demi-syllables which are, /fu-uul/, /hi-i na/, /altaga-aah/, and /ga-aabalu/ respectively. The mora closer to the imposed consonants is automatically satisfied by the vowel of the first demi-syllable while the second mora is subsequently satisfied by autosegmental vowel spreading.

Suggesting the imposition of the bimoraic template on the second mora yields undesired outputs for root words with long stressed syllables as exemplified in (39a-c) for /fuul/, /altagaah/, and /gaabalu/ respectively.

(39)   /-μμrb/ imposition on the second mora

Root word	Demi-syllables	/μμrb/ imposition	Game word	Gloss
		μμrb		
		| |		
a. fuu	fuu-ul	fu u ul	*fuurbul	'beans'
		μμrb		
		| |		
b. altagaah	altagaa-ah	altaga a ah	*altagaarbah	'he found it'
		μμrb		
		| |		
c. gaabalu	gaa-abalu	ga a abalu	*gaarbabalu	'he met him'

4.2   Template-insertion, segment imposition, and templatic imposition

As discussed in Botne and Davis (2000), the template-insertion approach (McCarthy 1982) has several shortcomings. Analysis of the MG within this approach faces two types of problems. First, the structure of the inserted template and second, the location of insertion. There are three possible structures of the template, namely, VrbV, VVrb, and rbVV. The location of insertion may be after or before the stressed vowel with autosegmental spreading working in various directions, or the insertion is after the first mora of the stressed vowel with autosegmental spreading doing the rest of the job.

Since the templatic imposition approach (Abu-Abbas 2009) basically involves a process of imposition, it is in conformity with Botne and Davis's criteria for segment imposition (pp. 328-9). The major difference between the two accounts is the fact that with gestural imposition, autosegmental spreading is rendered obsolete while under the templatic imposition approach, spreading is necessary to account for the vowel lengthening in the game.

5   A final remark

Walter (2002) compares the sociolinguistic differences between the use of the MG and the HG. The HG is seen as a descendent of the MG. Bakalla (2002) states that the existence of MG may reflect the cosmopolitan nature of life in Makkah and its multilingual interaction. Millions flock the holy city for religious purposes throughout the year. The language game functioned as an in-group speech disguise for Meccans to conceal the topic of conversation from the many pilgrims visiting the city. It also reflects an underlying social and generational solidarity amongst the users. Knowledge and use of this game by Meccans was considered by many to be prestigious.

Walter (2002) hypothesizes that the HG was imported to coastal Hadramaut by members of the Seiyid class in Yemen. Hadrami society stratifies into classes of seiyids, tribesmen, peasants and (former) slaves, in that order of relative prestige. The seiyids were by far the most likely to travel to the holy cities and thus import this speech disguise into Yemen. However, the HG shifted socially from a high status in-group marker to a low-status market argot. Today, both games are nearly extinct.

The JG, on the other hand, has not been traced geographically nor investigated socially. Field work by the authors yielded three speakers of the language who thought that they had invented the game. They were rather surprised to learn of very similar games in Mecca and Hadramaut. A more detailed investigation may link this game to the other two in terms of origin and shed more light on the social use of the JG.

6   Conclusion

The major objective of this paper has been to support the notion of templatic imposition-type language games proposed by Abu-Abbas (2009). Evidence from a language game in Meccan Arabic calls for replacing Botne and Davis's segment-imposition with templatic imposition and retaining autosegmental spreading which was rendered obsolete in Botne and Davis's model. Segment imposition may be reanalyzed as an imposition of a monomoraic template. Implications, ramifications, and applications of the proposed model will require further investigations into various types of language games.

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