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English Loan Words spoken by Madinah Hijazi Arabic Speakers

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Abstract:
This paper investigates English loanwords phonology in Madin Hijazi Arabic (MHA). A list of about two hundred words was analyzed for phonological changes. It is argued that adaptation of loanwords runs off the systematic phonetic level of representation of the donor language, taking into account the phonetic cues to phonological categories. I will, thus, discuss the phonological changes that occur in English loanwords frequently used by MHD speakers, mainly in syllable structure. MHD speakers rely on those phonological processes such as epenthesis, consonant voicing, vowel change and resyllabification in order to maintain the preferred MHD phonological structures.

Key words: loan words, Phonology, Phonetics, Madinah Hijazi Arabic, Optimality theory.

Introduction

Words borrowed from other languages are treated according to the sound system of the

borrowing language. Loan words whose phonological structure does not fit into the phonology of the borrowing language need to be adapted to fit that phonological system, and consistent patterns of adaptation can be explained by assuming particular rankings of phonological constraints (Prince and Smolensky 1993). In some cases the adaptation patterns follow from the grammar posited on the basis of native language data. In other cases, however, the analysis of loanwords requires us to posit crucial rankings for which the data of the native language provides no evidence. In such cases, the rankings motivated by the loanword patterns may be seen as evidence concerning the default rankings of universal grammar. I will examine several such cases, and will consider their implications for theories of how constraint rankings are learned (Broselow 1999). The adaptation of loan words involves the resolution of often conflicting demands to preserve as much information from the source word as possible while still satisfying the constraints that make the lexical item sound like a word of the recipient language (Kenstowicz, 2003a,b, 2005, 2006, La Charite 2005, Alder 2006, Davidson and Rolf 1996). When English words are adopted by Arabic speakers such phonological changes occur.

Theoretical Background

The analysis in this paper is based on Optimality Theory (Prince and Smolensky 1993, 2004, Rice 2006). Optimality Theory is assigned to underlying forms (inputs) by a general function GEN. There are many ranked and violable syllable structure well-formedness constraints which correctly select the optimal form among many available ones.

The basic syllable structure has been viewed as of the CV type (Jakobson 1962, Clements and keyser 1983, Selkirk 1982, Venneman 1988), according to this statement, Prince and Smolensky (1993:85) stated the following Optimal universal constraints:

1. a. ONSET

Syllables must have an onset.

b. NO-CODA

Syllables must not have a coda.

The constraints in '1' describe what is known as the universally unmarked characteristics of the involved structure.

In addition to the above constraints, Prince and Smolensky (1993) suggest the PARSE and FILL constraints on syllable structure to avoid failure to incorporate segments into syllable structure:

2. a. PARSE

Underlying segments must be parsed into syllable structure.

b. FILL

Syllable positions must be filled with underlying segments.

According to Prince and Smolensky, PARSE and FILL, in '2', are representative of the "faithfulness family of constraints". Their functions are to constrain the relation between structure and input. Moreover, they require that in wellformed syllables, input segments are in a one-to-one correspondence with syllable positions.

McCarthy and Prince (1995, 1999) propose that the constraint FILL and part of what the constraint PARSE to be replaced by DEP and MAX, respectively, and called their theory Correspondence Theory (CT). Correspondence Theory relates representations to one another. Rankable constraints apply to correspondent elements, demanding completeness of correspondence. Correspondent segments are often identical to one another, but identity of correspondents is also enforced by ranking, and, therefore, violable. The proposed constraints are formulated as follows:

3. a. Max-IO

Every segment of the input has a correspondent in the output.

b. DEP-IO

Every segment of the output has a correspondent in the input.

Ranking of constraints, according to McCarthy and Prince (1995, 1999), is language – specific. In a language that allows codas, like MHA, the optimal candidate is (3a); as a result, the NO-CODA constraint would be ranked low in the scale. In languages where MAX-IO is ranked low (3b) would be the optimal one. Finally, in language where DEP-IO is ranked low, candidate (3a) is the optimal.

The analysis of loan words in this paper is based on Optimality Theory central ideas discussed above.

Data Collection

Data in this study was collected from many participants through interviews. The participants included students, family members, some colleagues and friends, all of them were Arabic native speakers of different ages and education levels. The informants were asked to write the English loan words down on paper then pronounce them; after which, they recorded them on tapes. Last, the words were transcribed the way my informants pronounced them.

MHD Syllable Structure

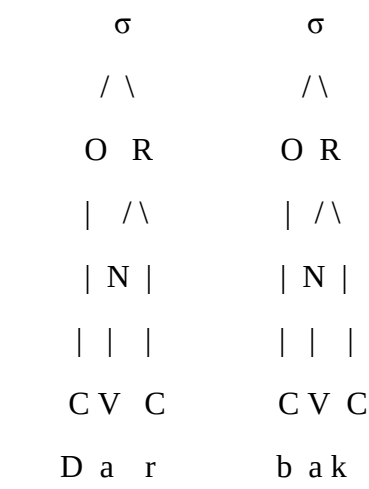
According to Jarrah (1993:56-60), MHD syllables types are as follows:

4.

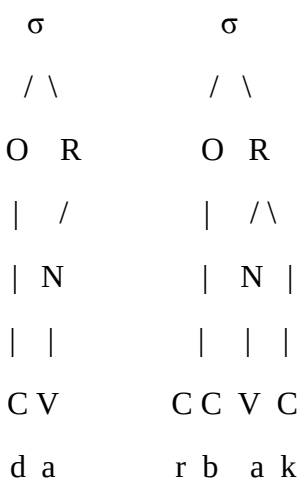
a. CV	**ga**lam	'pen'
b. CVV	**saa**kin	'resident'
c. CVC	ja**mal**	'camel'
d. CVVC	sakaa**keen**	'knives'
e. CVCC	da**rabt**	'I hit'

Jarrah (1993) claims that all syllable types above exists in MHA. According to him, CV is a light syllable, CVV and CVC are heavy syllables, and CVVC and CVCC are super-heavy syllables. The first three types are the unmarked ones in terms of their distribution, because they occur more often than the other two types (CVVC, and CVCC). CV and CVC are more frequent types, because there are no constraints of any kind on their distribution. They occur freely in word-initial, medial, and final positions. But the CV-type is more frequent than CVC and the rest and the least marked and the most natural; while the CVCC syllable is much less natural or marked. On the other hand, there are some constraints on the distribution of the CVV type. The latter is less frequent in final position than the other two positions, and more frequent in medial position than in initial or final positions. In (5) only 'a' is acceptable syllabification but not 'b':

5. a.



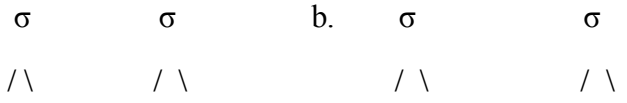
b.

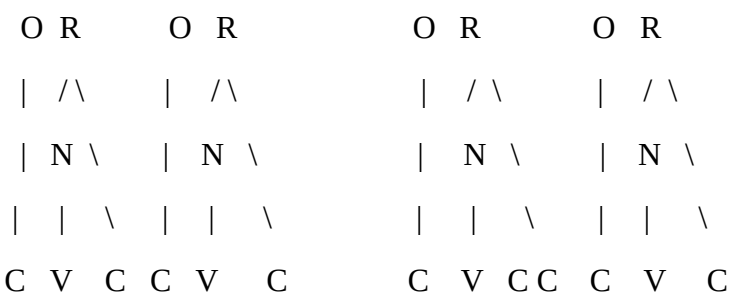


The unacceptability of '5b' is due to the clustering of the onset position in the second syllable.

Finally, a syllable rime may contain one consonant, as in CVC and CVVC patterns, or no consonants, as in CV and CVV patterns, but not more than two consonants as in CVCC patterns, while the CVVC patterns are confined to the final position of the word. In the following representation only 'a' is acceptable but not 'b':

6. a. b.





This conforms with the concept that syllable initial and final consonants are maximized to the extent consistent with the syllable structure of the language in question.

As shown above that MHA syllables must have an onset. We, therefore, consider the interaction of ONSET and DEP-IO. Thus, whenever such a situation is met, we appeal to epenthesis. Consider the following:

7.

ʔankatab 'was written' a.

b. ʔastalam 'received'

c. ʔana 'I'

d. ʔinta 'you'

e. ʔaxtabar 'he examined'

In (7) above, the epenthetic element is the glottal stop /ʔ/. Any form violating the constraint ONSET will be eliminated since there are candidate parses that meet the constraint ONSET by epenthesizing a glottal stop, thus violating the constraint DEP-IO. The items in (7), also, show that ONSET must be ranked above DEP-IO. This ranking is shown in (8) below:

8.

Ankatab	ONSET	DEP-IO
a.an.ka.tab	*!	
√ b.ʔan.ka.tab		*

If we reverse the ranking of ONSET and DEP-IO, the optimal candidate will be the form *[ankatab] with an onsetless syllable which is unacceptable by MHA.

We need to see whether the MAX-IO mentioned above interacts with ONSET and DEP-IO by adding another candidate to the above forms as in 9.

9.

ankatab	DEP-IO	MAX-IO
a.ʔan.ka.tab	*!	
√ b. nka.tab		*

The deletion of the low vowel in (9b) satisfies the ONSET constraint but violates the MAX-IO. The relation between the two in (9) makes a wrong prediction because the optimal parse is the one where the low vowel[a] of the input is deleted. This shows that the two constraints should not be ranked with respect to each other. The tableau in (10) shows the interaction of ONSET, MAX-IO, and DEP-IO.

10.

/ankatab/	ONSET	MAX-IO	DEP-IO
√ a. ʔan.ka.tab			*
b. nka.tab		*!	
c. an.ka.tab	*!		

Each candidate in (10) violates one constraint, but since violation of lower ranked constraint (DEP-IO) is allowed to secure higher ranked constraints (MAX-IO, and ONST), so the optimal candidate is (10a).

The constraints above would account for glide epenthesis or the relative form in MHA as /Samawi/ 'sky like' in the tableau in (11) shows:

11.

/Sama_i/	ONSET	MAX-IO	DEP-IO
√ a. Sa.ma.wi			*
b. Sa.mai		*!	
c. Sa.ma.i	*!		

(11) shows that any violation of ONSET and MAX-IO will not be optimal.

The interaction of faithfulness constraints DEP-IO and MAX-IO with the NO-CODA constraint will be examined using the examples in (12):

12. kawya 'ironing'

hawya 'deep'

karam 'generosity'

jaab 'he brought'

The items in (12) show that the NO-CODA constraint must be ranked lower in the scale than the constraint DEP-IO. Since MAX-IO dominates DEP-IO, so MAX-IO dominates NO-CODA as well, as the tableau in (10) shows:

13.

/kawya/	MAX-IO	DEP-IO	NO-CODA
√ a. kaw.ya			*
b. ka.ya	*!		
c. ka.wa.ya		*!	

The candidate in (13b) violates the MAX-IO constraint because it deletes /w/, and the candidate in (13c) violates the DEP-IO constraint because it inserts a low vowel. Furthermore, since both are higher in the rank than the NO-CODA, the candidate in (13a) is the optimal.

Syllable structure and epenthesis in loan words

Consonant and vowel epenthesis

Epenthesis is one of the strategies used to make loan words comply with the syllable structure of the recipient language (Broselow 2005, Silverman 1992). Epenthesis in MHD is motivated by the fact MHD phonology does not allow onsetless syllables and, also, does not allow consonantal clusters in the onset. The deep structure of the English loanwords is acceptable (by MHD speakers) with the use of the glottal stop [ʔ]. On the other hand, MHD does not allow more than a single consonant to function as an onset in its syllable structure. The data given below show the MHD phonological environments in which the vowels are epenthesized in order to deal with English consonantal clusters as in (14). Oxford Advanced Learner's Dictionary (2000) was consulted for English words transcriptions.

14.

	Input	output
Ice cream	[ais.kri:m]	[ʔiskir:m]
Express	[ikspres]	[ʔiksibris]
Exam	[igzǣm]	[ʔikza:m]

Album	[æ̃lbəm]	[ʔalbu:m]
Autobus	[ɔ:təbʌs]	[ʔutubi:s]
Skater	[skeitə]	[ʔiske:tar]
Stereo	[steriəu]	[ʔistirju]
Steak	[steik]	[ʔiste:k]
Aspirin	[æ̃sprin]	[ʔisbiri:n]
Spray	[sprei]	[ʔisbirɜ:]

Vowel epenthesis in the above loanwords adaptation has been motivated to satisfy syllable structure constraints of MHD. Recalling MHD syllable structure in (7), we find that the two constraints in (1), namely the onset and * complex ones, apply here. Since syllable structure of MHD does not allow onsetless syllables, the first constraint applies first as in the word 'ice cream'. MHD selects epenthesis of a consonant [ʔ] to avoid onsetless syllables, then a vowel is inserted to break the other clusters as in [-cream] becomes [-kiri:m]. I notice that the inserted vowels are in harmony with the original vowel. Words which cluster in the three consonants in the middle are also broken by insertion of a vowel as in 'ice cream', 'express', and 'spray'.

In words in (15) below, which have complex onsets (two or three consonants), a vowel is inserted between the two consonants of the onset**:**

15.

	Input	output
Cream	[kri:m]	[kiri:m]
Block	[blɔk]	[buluk]
Flash	[flæ̃ʃ]	[fila:ʃ]
Break	[breik]	[birɜ:k]
Christmas	[krismʌs]	[kirismas**]**

All above words are in rising sonority form. The sonority hierarchy is of a limited applicability in MHD because the number of consonant is restricted to two in the final position of the word (Jarrah1993:93). So, vowel epenthesis in (15) does not follow the sonority hierarchy Principle. Even when sonority is falling, the principle is not applied as in the word 'spray' which is pronounced [sibrei]. The above English loanwords in MHD underwent a process of segment epenthesis. This is due to the syllable patterns in MHD; that is, consonant clusters do not occur in syllable-initial position. There is a maximum of one consonant as an onset, and vowels do not occur in word initial position. In conclusion, I can affirm that Arabic speakers tend to pronounce the English words to make them sound like Arabic words .

It is also noteworthy that breaking up of the clusters requires reparsing of the syllables in the words. Consequently, the number of syllables of the adopted words increases due to vowel epenthesis, which in turn, add a syllable to a word. In this regard, English words which are monosyllabic such as /kri:m/, /flæʃ/ become bisyllabic /kiri:m/, and /fila:ʃ/. Words which are bisyllabic become trisyllabic such as /ikspres/ which becomes /ʔiksibris/. In addition, some monosyllabic words which start with three consonants in the onset become trisyllabic as in /sprei/ which becomes /ʔisbirei/.

Therefore, I conclude that vowel epenthesis is mainly a phonotactic and a prosodic process.

Epenthesis in the words in (14) and (15) violates the OT faithfulness constraints in (2) above because the epenthetic segments do not have a correspondence in the input. This can be dealt with the correspondence theory (CT) which treats the epenthetic segments in terms of what we did in (9) and (10) above by the interaction of MAX-IO with ONSET and DEP-IO.

16.

/ikspres/	ONSET	MAX-IO	DEP-IO
√ a. ʔik.sib.ris			*
b.Iks.bires		*!	
c. ik.sibres	*!		

All constraints are violated in (16), but since violation of lower ranked constraint (DEP-IO) is allowed to secure higher ranked constraints (MAX-IO, and ONST), so the optimal candidate is (16a).

Sound Alteration

a. Consonant Changes

Since the phonological systems of English and Arabic differ in terms of their phonemic system, MHD speakers, like in other Arabic dialects speakers, tend to alter some sounds which do not exist in MHD (Hafez (1991, 2008, Abu-Absis (1986), Alomoush & Al faqara (2010), Elkhalil (1981) and Sa'id (1964). The [p] and [v] sounds are always replaced by their counterparts [b] and [f], and /tʃ/ is replaced by /ʃ/, as shown in the following words:

17. [p] [v]

Cup [ko:b] video [fidju]

Captain [kʌbtin] vanilla [fanila]

April /eipril/ ------) [ʔibri :l] virus [firu :s]

Shampoo / ʃæ̃mpu:/ -----)[ʃʌmbu] save [se:f]

Chips /tʃips/ -------) /ʃibs/

As illustrated by the above words, the voiceless [p] is changed to the voiced [b] , and the voiced [v] is changed into the voiceless [f] due to the non existence of these sounds in MHD, another phoneme subject to change is the phoneme [tʃ] which is substituted by [ʃ] as in chips [ʃips], and [tʃi :z] into [ʃi :z]. As we see here, the phonemes which are not part of the phonological system of MHD are replaced by their homorganic counterparts.

b. **Vowel Changes**

The vocalic system of MHD consists of the following vowels /a/, /e/, /o/, /o:/, /i/, /i:/, /a:, /u/, /u:/, /ʌ/, /ɜ:/. Thus, loan words vowels undergo many changes, as illustrated by the following:

18.

Bus[ba:s]

[ri:bo:rt]report

Virus [firu:s]

Telephone [talafu:n]

Doctor [dʌ kto:r]

Album [ʔalbu:m]

Oxygen [ʔuksodzi:n]

Crystal [kirista:l]

Dolphin [dulfi:n]

Comedy [ku:mi:di]

Billiard [bilja:rdu]

Foul [fa:wil]

Sauna [so:na]

Carbon [kʌrbo:n]

Model [mudɜ:l]

In these examples, I find that some vowels are lengthened as in /bʌs/ --) /ba:s/, dolphin /dolphin, --) /dulfi:n/ carbon /ka:bən/--)/kʌrbo:n/ and so on. Those vowels were lengthened to create

heavy stressed syllables to follow MHD stress Patterns. Moreover, the tendency to change vowels is to make those words pronunciation easy for MHD speakers.

Stress

Stress in English loan words adaptation is another phonological process which undergoes modification to suit MHD phonological system. According to Jarrah (1993:171) stress location in MHA must be formulated and stated according to the syllable-weight distinction described above. The following algorithm summarizes stress location in MHA in three statements:

19. a. stress is on the final superheavy;

b. otherwise, stress falls on the penultimate heavy syllable;

c. In all other words, stress is on the antepenultimate syllable, whatever its weight is.

The statement in (19) shows that MHA stress is quantity sensitive and looks from right to left with trochaic feet. According to Prince and Smolensky (1993), McCarthy and Prince (1993a), Al-Jarrah,(2002, 2008) and Al-Mohanna (2005) Optimality theory requires that feet are subject to the constraint FT-BIN which demands that they be binary under syllabic analysis if the language in question is quantity-insensitive, or moraic if it is quantity-sensitive. The constraint is stated as follows:

20. FT-BIN

feet are binary under syllabic or moraic analysis.

This constraint is in conflict with the constraint PARSE-σ which requires that syllables must be parsed into feet.

21. PARSE-σ

Syllables must belong to a foot.

I have shown above that MHA stresses one of the last two syllables of the word. This means that the foot which contains the stressed syllable must be at the right edge of the prosodic word. I, also, have shown that the directionality of footing is from right to left. According to McCarthy and Prince (1993b), Generalized Alignment Theory, I propose the following constraint for MHA:

22. ALIGN-R (FT, PWD)

Align all metrical feet at the right edge of the prosodic word.

ALIGN-FT-R is violated if I go under lower constituents, i.e., the syllable. In MHA, PARSE-σ should come before ALIGN-R (FT, PWD) to derive the correct foot structure , see the tableau below for the word ‘Šafahalaha” ‘ he saw it for her’:

23.

Šafahalaha	FTBIN	PARSE-σ	ALIGN-R
√a. Ša(faha)(laha)		*	**
b. Ša.fa.ha.(laha)		**!*	
c.(Ša).(fa.ha)(la.ha)	*!		******

Because three of the syllables are not parsed the parse in (23b) is not optimal, though it observes ALIGN-Ft-R, (23c) is also not optimal because a monomoraic syllable is parsed into a foot which violates FTBIN. (23a) is the optimal because it satisfies the FTBIN.

Hayes (1995) uses a set of feet types to organize the metrical structure of a language. Feet according to him are of two types; one is trochaic and the other is iambic as mentioned above. The distinction between the two is a matter of headness. Iambic feet are right headed , i.e., the stressed syllable is located at the right periphery of the foot (Prince and Smolensky 1993, McCarthy and Prince 1993a, Hayes 1995, and Halle and Vergnaud 1987). Trochaic feet , on the other hand , are left headed and are distinguished into moraic trochees which consists of heavy bimoraic syllable or a sequence of two light syllables where the one on the left bears stress. Hayes (1995), states the following universal foot types:

24. a. Iamb LH', LL', or H',

b. Moraic trochee L'L or H',

c. syllabic trochee σ' σ.

Since MHA stress is quantity sensitive, its feet must be trochaic and it is the final superheavy syllable of the word which receives stress as in /saak'ni:n/ 'residents of and /darji:n/ 'we know'. Furthemore, the penultimate heavy syllable of the foot is stressed, if the ultimate is not superheavy, as in /karamna/ 'our generosity'. Finally, stress falls on the antepenultimate syllable, whatever its weight is as in /katabat/ 'she wrote'.

25. TROCHEE

Feet are left headed.

In a CVCV pattern a word like /sama/ 'sky' , the two syllables are light, and stress is determined by the TROCHEE constraint as follows:

26.

Sama	TROCHEE
a. (sa'.ma)	√

b. (sa.ma')	*!

The fact that MHA is quantity sensitive, that is heavy and super-heavy syllables attract stress, motivates the Weight-To-Stress (WSP) principle constraint shown below in (27)

27. WSP: (super)Heavy syllables attract stress.

This constraint requires that a (super)heavy syllable be both the head of a foot , and dominated by an accentual grid mark indicating stress. WSP applies only at the foot level in order to rule out structures such as (CVC)(CV'.CVC) or (CVC.CV')(CVC), where the light instead of the heavy syllable of the foot is stressed. The ranking of the constraint in (27) with the other constraints mentioned above is shown as follows:

28.

9allamtu	FTBIN	ALL-FT-R	TROCHAIC	WSP
a.(9'al.lam.tu)	!*		*	*
√b.9al(l'am.tu)		*		
c.9al.lam.(t'u)	!*		*	*
d. (9'al.lam)tu		*!	*	

Suboptimal candidates (28a) and (28c) violate the FTBIN constraint. Suboptimal (28d) fails to align the right edge of the foot at the right edge of the word and also violates the TROCHEE constraint. The optimal candidate (28b) is the one which violates only one constraint, so it is the right output.

When English loan words syllable structures are modified, MHD speakers tend to follow and apply their stress rules on English loan words as follows:

29.

	English Stress	MHD stress
a. April	/'eipril/	/ʔib'ri:l/
b. album	/'ælbəm/	/ʔal'bu:m/
c. christmas	/'krisməs/	/ki'rismis/
d. shampoo	/ʃam'pu:/	/'ʃʌmbu/

e. cabin /'kæbin/ /ka'bi:nah/

f. carbon /'ka:bən/ /kʌr'bo:n/

g. telescope /'teliskəup/ /tilis'ko:b/

h. mascara / mæ'ska:ra/ /'mʌskara/

i. battery /'bætəri/ /ba'tarijah/

As I see above, loan words follow the stress rules of MHD, stress falls on the ultimate superheavy syllable as in the words /ʔib'ri :l/, /ʔal'bu :m/, /kʌr'bo :n/, and /tilis'ko :b/, following rule (19a). Stress falls on the penultimate syllable as in the words /ka'bi :nah/, /ki'rismis/ and /'ʃʌmbu/ rule (19b). And, finally, rule (19 c) applies when stress falls on the antepenultimate syllable as in /'mʌskara/ and /battarijah/. In conclusion, stress in loan words shifts from one syllable into another to meet MHD stress rules. Furthermore, vowels are lengthened to ensure the formation of bimoraic foot mentioned above.

Conclusions

The analysis in this paper shows that adaptation of English loan words affects syllable structure, phoneme, and stress assignment. Thus, phonemes, which do not exist in MHD phonemic system are replaced by the nearest homorganic phoneme. Some other phonemes, seem to be borrowed almost unchanged from the MHD speakers, such as /b/, /k/, /r/, /f/, /n/ among others.

MHD syllable structures play a very important role in adapted English loan words. I proved that MHD speakers tend to apply their syllable structures to the adapted words keeping the main aspects of loan words. I, also, saw all MHD syllable structure occur after adaption. One of the phonological processes that changes syllable structures of loan words is epenthesis which affects the number and weight of syllables and in turn changes stress position from its original place to follow the MHD stress rules. That is, English words adopted by MHD always obey MHD conditions. When the syllable structure of an English word conflicts with that of MHD, MHD speakers intuitively modify the word to conform to their own rules. Thus, the psychological reality of the syllable appears clearly in the adopted words.

Finally, I notice that MHD speakers tend to preserve as much information from the English words as possible while still satisfying theconstraints that make them sound like a word of their own language.

References

ABU-ABSI S., 1986 "The Modernization of Arabic: Problems and Prospects", *Anthropological Linguistics 28(*3), 337-346.

Adler, Allison N. (2006). Faithfulness and perception in loanword adaptation: a case study from Hawaiian. *Lingua* 116: 1024-1045.

Al-Jarrah, Rasheed. (2002). An optimality-theoretic analysis of stress in the English of native Arabic speakers. Doctoral dissertation, Ball State University

Al-Jarrah, Rasheed .(2008). Interactions of weight effects with extrametricality in Cairene Arabic: A constraint-based analysis. JJMLL*1*(1):1-29.

Al-Mohanna, Faisal. (2005). Paradoxical non-finality: Stress assignment in three Arabic dialects. [ROA-735].

Alomoush, O. I., & Al faqara ,w .(2010) 'ADAPTATION OF ENGLISH LOANWORDS INTO JORDANIAN ARABIC' *'The Journal of Language and Literature*, ISSN: 2078-0303, May, 2010

Broselow, Ellen. (1992). 'Transfer and universals in second language epenthesis.' In *Language transfer in language learning*, ed. S. Gass and L. Selinker. Philadelphia: Benjamins.

Broselow, Ellen (1999a). Stress-epenthesis interactions. Talk presented at the Phonology 2000 Symposium, Harvard/MIT.

Broselow, Ellen. 1999b. 'Loanwords and learnability.' Handout of a talk given at the University of Maryland, 3 December 1999.

Broselow, Ellen (2005). Stress adaptation in loanword phonology: perception and learnability. In: Paul Boersma and Silke Hamann (eds.) *Phonology in perception*. Berlin: Mouton de Gruyter.

Clements , G. & J. Keyser 1983. 'CV Phonology , a Generative Theory of the Syllable.' The MIT Press, Cambridge Massachusetts.

Davidson, Lisa., & Noyer, R. (1996). Loan phonology in Huave: nativization and the ranking of faithfulness constraints. *West Coast Conference on Formal Linguistics 15*(65), 7-9

El Khalil, T.M.M. (1981). *Linguistic Analysis of the English Loanwords in Journalistic Jordanian Arabic as Read by an Educated Native Speaker of Arabic*. Master's Thesis Yarmouk University, Jordan, Irbid.

Hafez, O. M. (1991) "Turn-taking in Egyptian Arabic: Spontaneous Speech vs. Drama Dialogue", *Journal of Pragmatics* 15, 59-81.

Hafez, O, M. 2008 ' Phonological and Morphological Integration of Loanwords into Egyptian Arabic », *Égypte/Monde arabe*, Première série, Les langues en Égypte , [En ligne], mis en ligne le 08 juillet 2008.

Halle, m., & Vergnaude, J.(1987) ' An Essay on Stress' MIT,Cambridge, Massachusetts

Hayes, B. (1995) 'Metrical Stress Theory;, Chicago, University of Chicago Press.

Jakobson, Roman (1962). *Selected writings I. Phonological studies.* The Hague: Mouton.

Jarrah, A. (1993). *The phonology of Madina Hijazi Arabic: A non-linear analysis.* Doctoral Thesis, University of Essex.

Kenstowicz, Michael (2003a). Salience and similarity in loanword adaptation: a case study from Fijian. To appear in *Language Sciences*.

Kenstowicz, Michael. (2003b). The role of perception in loanword phonology. A review of *Les emprunts linguisiques d'origine européenne en Fon* by Flavien Gbe□to, Köln: Rüdiger Köppe Verlag, 2000. *Studies in African Linguistics*, 32, 95-112.

Kenstowicz, Michael (2005). The phonetics and phonology of Korean loanword adaptation. In Sang-Jik Rhee (ed.), *Proceeedings of the First European Conference on Korean Linguistics,* Seoul: Hankook Publishing Co., 17-32.

Kenstowicz, M., and A. Suchato. 2006. "Issues in loanword adaptation: A case study from Thai." Lingua 116, 921–949.

La Charité, Darlene and Carole Paradis (2005). Category preservation and proximity versus phonetic approximation in loanword adaptation. *Linguistic Inquiry* 36: 223-258. Paradis, Carole and Darlene LaCharité (1997). Preservation and minimality in loanword adaptation. *Journal of Linguistics* 33: 379-430

McCarthy, John J. &Prince, Allan (1995). 'Faithfulness and Reproductive Identity' in Beckman, Dickey, and Urbanczyk (eds.), Papers in Optimality Theory (University of Massachusetts Occasional Papers 18) Amherst: GLSA: 249-384.

McCarthy, John J., & Prince, Alan (1999)." Faithfulness and identity in prosodic morphology. In R. Kager, H. van der Hulst & W. Zonneveld (Eds.), *The Prosody-MorphologyInterface*. Cambridge: Cambridge University Press

Oxford Advanced Learner's Dictionary of Current English. Oxford,(2000). University Press

Prince, Alan & Smolensky. P.(1993). Optimality Theory: Constraint Ranking in Generative Grammar. Tech. Rep. #2 of the Rutgers Center for Cognitive Sciences, Rutgers, NJ.

Prince, Alan & Smolensky. P (2004). *Optimality Theory: constraint interaction in generative grammar*. London, Blackwell.

Rice, C. (2006). Review of "The syllable in optimality theory". *Language* 83: 943-944.

Selkirk, Elisabeth. (1982). 'The syllable.' In *The structure of phonological representations*, ed. H. van der Hulst and N.Smith. Dordrecht: Foris Publications.

Silverman, Daniel. (1992). 'Multiple scansions in loanword phonology: Evidence from Cantonese.' *Phonology* 9:289-328.

Sa'id, M.F. (1964). *Lexical Innovation Through Borrowing in Modern Standard Arabic*. Princeton Near East paper *, 6.*

Vennemann, Theo. 1988. *Preference laws for syllable structure and the explanation of sound change: With special reference to German, Germanic, Italian, and Latin*. Berlin: Mouton de Gruyter.

Appendixes

List of Consonants and their Description /Appendix A

ʔ Voiceless glottal stop

b Voiced bilabial stop

t Voiceless dental stop

θ Voiceless dental fricative

dz Voiced palato-alveolar affricate

hˁ Voiceless pharyngeal fricative

x Voiceless uvular fricative

d Voiced dental stop

ð Voiced dental fricative

r Voiced Alveolar flap

z Voiced alveolar fricative

s Voiceless alveolar emphatic fricative

s˙ Voiceless alveolar fricative

D˙ Voiced alveolar emphatic stop

T˙ Voiced dental emphatic stop

9 Voiced pharyngeal fricative

g˙ Voiced uvular fricative

f Voiceless labio-dental fricative

q Voiceless uvular stop

k Voiceless velar stop

l Voiced alveolar lateral

m Bilabial nasal stop

n Alveolar nasal stop

y Voiced Palatal glide

w Voiced Labio –velar glide

g Voiced velar stop

Loan words adopted from English /Appendix B

	Biscuit[bʌskɔ:t]	[mæsindzʌr]messenger
ice cream [ʔiskiri:m]	[risi:fʌr] Receiver	Balcony [balakɔ:na]
[ʔiksipris] express	Remote [rimɔ:t]	[ʃu:t] shoot
[ʔiksa:m]exam	Prestige [biristi:dz]	[susidz] susage
[ʔistireet] street	Make up [mə:kʌb]	casino [kæzinu]
[ʔispila:ʃ] splash	[darakʌtar] tractor	[kæsit] cassette
[ʔispirɜ:] spray	[filtʌr] filter	[dinamo]dynamo
[bæTa:Tis] potatoes	Ketchup [kʌtʃʌb]	[sidza:rʌh]cigarette
[KʌnsiI] cancel	Milkshake [milkʃə:k]	Comedy [kɔmi:di]

[tofʌl])TOEFL	Mayonnaise [ma:jonə:z]	Chips [ʃibs]
save [sə:f]	Spray [ʔisiprie]	Cash [ka:ʃ]
[ri:bort] report	[ʔiksiswa:r] accessory	Villa [filla]
[fidjo] video	[ŝukulatah] chocolate	Cocktail [kukteil]
Gallon [dzalɔ:n]	Message [masidz]	Baby [beibi]
[ba:S] bus	Kilometer ك[ki:lumitir]	[bila:stic]plastic
Lamp [lΛ mba]	[bɔ:dræ] powder	Aerial [ʔirjʌl]
[rædju] Radio	Tennis [tinis]	Aspirin [ʔisbiri:n]
[talafu:n] telephone	Vase [fa:zʌh]	Prostate [brosta:ta]
Bank [bΛnk]	Double [dæbʌl]	[blu:tu:Θ] bluetooth
[ræda:r] radar	[mʌgræfɔ:n] Microphone	[risibŝin] reception
Computer [kombju:tΛr]	Winch [winʃ]	[pidza:ma]Pijamas
Jeans [jinz]	Consulate [gunsulijə]	Clutch
[bi:rΛh]beer	Card [kʌrt]	[kælʌtʃ]
[firish] fresh	Cafeteria [kʌfatirija]	[bilja:rdo]Billiard
Cup [ko:b]	Mechanic [makani:ki:]	[kærætə:h]Karate
[kΛbtin] captain	ا Vanilla [fanila]	[bleisteiʃin] Play station
casino [kæzino]	[ŝɜ:k]Check	[mʌgræfo:n] Microphone
Control [kΛntro:l]	Secretary (masculine) [sikirtə:r]	[ka:wintʌr] counter
[fila:ʃ mimuri] flash memory	[sikirtə:rʌh] secretary (feminine)	[mʌskæræ] Mascara
[sikuriti] security	Flash [fila	[fa:wil]foul
[batarja]Battery	[fosfa:t]	ا [so:na]sauna
[kɔ:rs] course	[si:ræmi:k] ceramic	و [sitirio]stereo
[fitəmi:n] vitamin	[la:rdz]large	[brostid]broasted
Doctor [dʌktɔ:r]	[mi:djʌm] medium	toast [tɔst]
[bælo:n]Balloon	[smɔ:l] small	[ʃibs] chips
Camera [kæmiræ]	[bikingpɔ:dʌr] baking powder	[sibi:kʌr]speaker
[sʌantimitir] centimeter	Oxygen [ɔksɔdzi:n]	[ʔlæmunjum]aluminum
[tilisko:b] telescope	Cotton [gutun]	virus [firu:s]

[ʔibri:l] april	meter [mitir]	floppy [filubi]
[disʌmbʌr] december	boat [bɔ:t]	carbon [kʌrbɔ:n]
Shampoo [ʃʌmbo]	[kri:m]cream	catalogue [kætælo:dz]
[fʌlsæfʌh] philosophy	Diesel [də:zʌl]	litre [litir]
P Album [albu:m]	[mæna:ki:r]manicure	beer [bi:rəh]
Film [filim]	[tirmumitir]thermometer	packet [bakʌt]
[gara:ŝ] garage	Interphone [ʔintʌrfon]	sponge [sifindzə]
[hilikobtΛr] helicopter	Skater [ʔ isikietʌr]	hydrogen [hidrudzi:n]
Hosphate	[nɔ:tah] note	nitrogen [nitrudzi:n]
[leimu:n] lemon	Break [brə:k]	consul [gunSul]
[modə:l]Model	Clip [klib]	[kirismis]christimas
[bʌtrɔ:l] petrol	Microwave [mikrɔwief]	[kabi:nah] cabin
[sʌndəl] sandal	[le:zʌr] laser	Pancake][bænkɜ:k
[sʌndawiʃ]Sandwich	Police [boli:s]	[kornʌr] corner
Supermarket [su:berma;rkit]	[brodziktor] projector	[bʌktirija] bacteria
Taxi [tʌksi]	Nicotine [nikuti:n]	[ræbʌr] rubber
[ʔutubi:s] autobus	Sauce [sɔ:s]	[tiʃidʌr] cheddar
Cake [kə:k]	[kɔ:t] coat	[gæra:ʃ] garage
Rice [ruz]	rouge [rɔ:dz]	
[kʌrtɔ:n] Cartoon	[Krista:l] crystal	
Bicycle [buskulə:t]	[dulfi:n]dolphin	
Mirror [mirajʌh]	Course [kɔ:rs]	
Jacket [dzakə:t]		
Hamburger [hΛmgurgʌr]		