

Positional Syllable Maximality: Syllabification in Hejazi

Faisal M. Al-Mohanna

*College of Languages and Translation, King Saud University,
Riyadh, Saudi Arabia
mohannaf@ksu.edu.sa*

(Received 11/07/1429H.; accepted for publication 13/10/1429H.)

Abstract. This paper examines the process of evaluating syllabic parsing in Hejazi. The constraint-based analysis presents the universally unmarked CV as the syllable template required to optimize actual syllabification. Instances of final reduction, final vowel shortening and final consonant extrasyllabicity support the proposed analysis, offering justification for the lack of final mono-syllable moraic trochees, and hence lack of word final head syllable and stress. The account decomposes the requirement on maximum syllabic moraicity. The constraint SYL-MAXIMALITY(μ) confines moraic content to the minimum while SYL-MAXIMALITY($\mu\mu$) maximally allows the parsing of bi-moraic syllables. Ranked undominated, SYL-MAXIMALITY($\mu\mu$) allows parsing (non-final) heavy syllables and restricts superheavies to the right periphery of the prosodic word. SYL-MAXIMALITY(μ), that preserves the hypothetically maximum and minimum syllable throughout the syllabification domain, is ranked lower to guarantee unmarked syllabification elsewhere, i.e. whenever allowed by higher constraints on faithfulness and markedness formalized to uphold other principles of prosodification, in non-final positions.

1. Introduction

Hejazi, amongst other dialects of Arabic, portrays instances of final reduction, demonstrated empirically in final vowel shortening and representationally in final consonant extrasyllabicity. These processes, where underlyingly long vowels shorten finally, and final consonants associate directly to the prosodic word, support the persistent CV parsing hypothesis. They, though violating constraints on weight identity and prosodic licensing (WT-IDENT and EXHAUS respectively), are considered as the most plausible option maintaining the distributionally unmarked CV syllable, for Hejazi.

These two processes facilitate final footing; they allow pairing final strings of syllables into disyllabic moraic trochees. Shortening a final long vowel or marking a final consonant extrasyllabic, to satisfy CV parsing, contributes to metrification as the final syllable is rendered monomoraic and consequently eligible to share a foot with a preceding light syllable.

Failing to enforce CV syllabic parsing throughout the prosodic word should not be

interpreted as an argument for listing heavy syllables (CVC, CVV) or superheavy syllables (CVCC, CVVC) as canonical syllable types in Hejazi. Their existence, and hence sacrifice of the cross linguistically least marked syllable structure, is a mere realization of higher requirements of faithfulness and markedness. Heavy syllables are only parsed under duress, to avoid breaching input/output correspondence, segment and constituent contiguity, and/or headedness and exhaustivity as governing principles of the Prosodic Hierarchy relations.

The paper is organized in the following way. Section 2 summarizes basic OT constraints interpreting primary syllabification principles. In Section 3, the proposed account is presented in detail, starting with default syllabification. Then, the two examples of final reduction are demonstrated as processes satisfying a universal requirement. The section extends the argument to the distribution of superheavy syllables, and explains the definite effect of sonority sequencing on vowel epenthesis in Hejazi. The conclusion is given in Section 4.

2. Syllabification in OT

This section presents a formalization of the primary constraints implementing basic syllabification principles in OT. To this end, Prince and Smolensky (2002) interpreted Jakobson's syllabic typology into a set of universal constraints. In particular, optimizing the universal core syllable CV is considered top priority.

According to Clements and Keyser (1983), the primary set of core syllable types, cross-linguistically, contains the following sequences:

- (1)
- a. CV
 - b. V
 - c. CVC
 - d. VC

So, languages neither forbid onsets nor require codas (Jakobson, 1962). This means that languages may have optional consonant-initial syllables, but never ban them, and optional consonant-final ones, but never require them. Thus, CV and VC occupy the two extremes of markedness; the former is the least marked, and the latter is the most highly marked syllable type.

According to Clements and Keyser (1983), there are two operations involved in deriving the three marked core syllables (V, CVC, VC) from the least marked (CV), deleting the initial consonant and/or adding a final consonant. Consequently, the basic structural (markedness) constraints conspiring to optimize the CV syllable type are as follows (Prince and Smolensky 2002):

- (2)
- a. NUC
Syllables must have nuclei
 - b. * COMPLEX
No more than one C or V may associate to any syllable position node.
 - c. * M/V
V may not associate to margin nodes (onsets and codas)
 - d. * P/C
C may not associate to peak nodes (nuclei)
 - e. ONS
Syllables must have onsets

- f. -CODA
Syllables must not have codas

Obviously, this set of structural constraints interprets two essential principles of syllabification. Firstly, the constraints NUC, ONS, and -CODA enforce CV parsing. Secondly, *M/V and *P/C maintain the sonority requirement governing the syllable's internal structure.

In addition to this family of constraints, there is the Faithfulness (correspondence) pair MAX-IO and DEP-IO. These constraints aim at restricting surface structures to those that exhibit a one-to-one correspondence with input segments (McCarthy and Prince, 1995). This means that processes of deletion or insertion, ruled out by MAX-IO and DEP-IO respectively, are not preferred.

Ranking the basic syllable structure constraints involves two major steps, decided differently to suit different languages. We first need to decide whether or not onsets are required and/or codas are forbidden. This allows for ranking structural constraints with respect to their Faithfulness counterparts. Then, we will have to decide the way in which this onset requirement and/or coda banning is enforced. This helps determine the relative ranking of MAX-IO and DEP-IO.

3. CV-syllabification in Hejazi

3.1. Default syllabification

In general, there seems to be a consensus amongst researchers who investigated the syllable in Arabic (Brame, 1970; Bakala, 1973; Broselow, 1979; McCarthy, 1979 *et seq.*; Selkirk, 1981; among others) that the inventory comprises two types (light and heavy). The light syllable is composed of a simple peak vowel obligatorily preceded by a simple consonant onset (CV). The heavy counterpart, on the other hand, has a branching rime incorporating an additional coda consonant or an additional timing slot rendering a nucleus with a long vowel (CVC, CVV). In addition, there are two rather highly marked manifestations of a third syllable type whose distribution is confined to the word-final position. These syllables, traditionally termed superheavy, are composed of a heavy syllable plus a consonant (CVVC, CVCC).

Hejazi is not an exception to these distribution generalizations; such syllable types are attested in the language:

(3)	Light	[	CV	<u>ʃa.dʒa</u> .ri	‘my trees’]
	Heavy	[	CVC	<u>mak</u> .tuub	‘a letter’]
		]	CVV	<u>kaa</u> .saat	‘glasses’]
	Superheavy	[	CVCC	<u>bint</u>	‘a girl’]
		|		ʔa. <u>kalt</u>	‘I ate’	|
		|	CVVC	<u>tiin</u>	‘figs’	|
		]		faa. <u>nuus</u>	‘a lantern’]

Analyzing the process of parsing underlying strings into these syllable types, distributing them as they are attested in the language, is the central issue discussed in this section. In OT terms, we want to determine the set of constraints and constraint rankings that conspire to optimize true syllabification in Hejazi.

All these forms show that the onset position is obligatorily filled with a single consonant, which means that ONS is ranked undominated. Another undominated constraint is *COMPLEX as Hejazi does not allow more than one C or V to associate to any syllable position node. However, -CODA is ranked low to tolerate licensing consonants in the coda position. Thus, the ranking below holds for default syllabification in Hejazi:

- (4) Undominated: NUC, * COMPLEX, * M/V, * P/C, ONS
 Dominated: -CODA

The surface manifestation of the attested syllable types in Hejazi, however, is not the immediate result of uniformly applying the most primitive syllable template the language truly necessitates for optimal parsing across the prosodic word. The hypothesis, to be pursued, represents the mono-moraic CV as the syllable template for Hejazi and sets the proper OT constraints to implement it. Evaluating the syllabic harmony of candidate analyses will then be a matter of comparing them to that template, which emerges whenever possible, i.e. whenever allowed by more predominant principles of correspondence and licensing. Consequently, CV parsing does not force epenthesis or deletion nor does it promote under-parsing or consonant extrasyllabicity throughout the prosodic word.

All through the forms in (3) above, the maximal syllable contains two elements in the rime, with superheavies analyzed differently later in the section. Such rimes are composed of either a short vowel and a consonant or a long vowel. This may suggest that

the core syllable template for Hejazi, where these two language-specific properties are captured, is CVX, where X is either a consonant or another timing slot producing a long vowel (Al-Mohanna, 1998). Assuming this view, however, requires parsing all underlying strings of segments into that particular syllable template, which is not the case in Hejazi.

As mentioned above, and analyzed in detail later, the two processes of final reduction do not seem to follow from this generalization. A final underlying sequence with a potential of fully satisfying a CVX template, and subsequently creating a bi-moraic syllable, is rendered one mora shorter. This may be analyzed as a consequence of imposing a simple CV syllabic parsing. In particular, we find that underlying long vowels (mainly subject pronouns) shorten finally: /simiʔtuu/ → [si.miʔ.tu] ‘you pl. heard’ (cf. [si.miʔ.tuu.na] ‘you pl. heard us’), /lihignaa/ → [li.hig.na] ‘we followed’ (cf. [li.hig.naa.hum] ‘we followed them’), etc. Also, and to allow the pairing of final strings of syllables into disyllabic moraic trochees, the phonology optimizes final consonant extrasyllabicity. This will eventually deny word-final foot headedness and generate the required footing configuration in Hejazi. These processes offer the justification for the lack of final mono-syllable moraic trochees, and hence lack of word final head syllable and stress. In other words, shortening a final long vowel or marking a final consonant extrasyllabic, to satisfy CV rather than CVX parsing, contributes to metrification as the final syllable is rendered monomoraic and consequently eligible to share a foot with a preceding light syllable: /...CVCVV/ → [...(CV.CV)_Σ]_ω and /...CVCVC/ → [...(CV.CV)_ΣC]_ω. Therefore, the claim is that the outputs of the two processes of final vowel shortening and final consonant extrasyllabicity are considered as the most plausible options that satisfy CV parsing.

In an attempt to interpret the default CV parsing, but at the same time accommodate bimoraic syllables, I propose a scaled decomposition of the requirements

on syllable moraic maximality, to be implemented in the following pair of constraints:

- (5) (I) SYL-MAXIMALITY(μ):
Syllables are maximally *mono*-
moraic.
- (II) SYL-MAXIMALITY($\mu\mu$):
Syllables are maximally *bi*-
moraic.

The constraint SYL-MAXIMALITY(μ) maintains the universally unmarked syllabification by limiting moraicity to a maximum of one mora per syllable. The constraint SYL-MAXIMALITY($\mu\mu$) is independently motivated, especially in languages with moraic trochee footing. Such a constraint has been proposed more than once in OT literature: * $\sigma\mu\mu\mu$ (Sherer, 1994; Walker, 1994), *Tri-moraic Syllables (Hewitt, 1994), BIMORA (Bakovic, 1996), SYLLBIN (Broselow *et al.*, 1997), etc. The universal constraint FT-BIN (Prince and Smolensky, 2002; McCarthy and Prince, 1993; and *et seq.*) and the

SYLLABLE INTEGRITY condition (Prince, 1980; Halle, 1990; Halle and Kenstowicz, 1991; Idsardi, 1992; Kager, 1993; Hayes, 1995) both say that feet must be binary (syllabically or moraicly) and that a syllable must not be divided between two feet. Therefore, unless syllables are maximally bimoraic, a moraic trochee foot parsing will inevitably disturb their integrity.

Besides moraic content, the other variable that we must specifically determine for Hejazi is the overall ranking of these two constraints. SYL-MAXIMALITY($\mu\mu$) should be ranked undominated to establish the fact that syllables, throughout the word, may not accommodate more than two moras. On the other hand, SYL-MAXIMALITY(μ) must be ranked lower than Faithfulness constraints, MAX-IO and DEP-IO in particular, to block unnecessary underparsing or overparsing performed to diminish (by deletion/shortening or epenthesis) those potentially supra-maximal sequences, as interpreted by this constraint. Consider the following tableau for a simple input like /galbi/ → [gal.bi] ‘my heart’.

(6) /galbi/ → [gal.bi] ‘my heart’

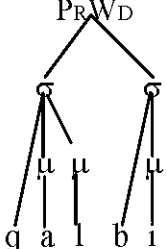
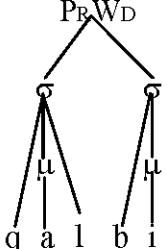
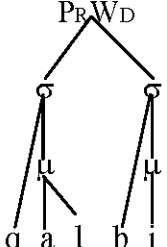
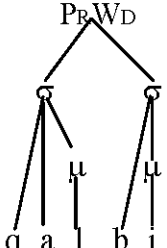
/galbi/	ONS	SYL-MAXIMALITY($\mu\mu$)	MAX-IO	DEP-IO	SYL-MAXIMALITY(μ)	-CODA
a.					*	*
b.				*!		
c.			*!			

This tableau demonstrates how the grammar, through constraint ranking, blocks persistent CV syllabification. Candidate analyses that violate constraints on Faithfulness (5b and c), only to satisfy SYL-MAXIMALITY(μ), are ruled out.

In addition to violators of constraints on input-output segment correspondence, *Gen* presents for evaluation a category of candidate analyses that

maintain default mono-moraic maximality by modifying mora prosodic representation. In particular, the process of licensing (underlying and derived) moras considers a number of association configurations with varying degrees of preserving the principles of Prosodic Hierarchy.

(7)

μ μ | | /g a l b - i/	NUC, *P/C, *M/V, *COMPLEX, ONS, SYL-MAXIMALITY($\mu\mu$)	MAX-IO	DEP-IO	SYL-MAXIMALITY(μ)	-CODA
a.? 				*!	*
b. 					*
c. 					*
d. 					*

Obviously, the proposed constraint hierarchy does not block representationally false outputs like (7b, c, or d). These candidate analyses avoid violating SYL-MAXIMALITY(μ) by immediately associating a post-peak medial consonant to a preceding syllable node, a preceding mora, or a distinct mora (licensing a non-moraic vowel). Hejazi grammar, and indeed UG, must have the capacity to prohibit this type of SYL-MAXIMALITY(μ) satisfiers.

The mora theory we adopt determines the set of OT constraints proposed to control moraic representation. Precisely, the issue of whether or not moras are underlyingly present in the input or supplied by *Gen* will characterize the domain of any intended solution. Following Hayes (1989), I shall assume that moras are of two types: underlying and derived. Only vowels and geminate consonants are underlyingly moraic; long vowels are bi-moraic and short ones are mono-moraic. Other consonants are assigned moras derivationally through Weight-by-Position. Hence, the constraints below (Al-Mohanna, 1998):

- (8) a. MORACITY-IO
Input moraicity has some correspondent in the Output.
- b. Rime Exhaustivity (RIME-EXHAUS)
Within syllable boundaries, post-peak elements are exhaustively parsed into moras.
- c. *COMPLEX- μ
A mora may not associate to more than one segment.

The first constraint maintains input-output moraic correspondence. This means that each vocalic timing slot is at least associated to one mora in the output. There have been suggestions in OT literature for incorporating constraints to which one may attribute vocalic moraicity. Rosenthal (1994) introduced V-MORA, and Hewitt (1994) came up with Link VN. Both of these constraints are violated by candidates containing non-moraic vowels. I want to categorically indicate that I am not assuming constraining the input, restricting "richness of the base". What I want to maintain is underlying moraicity (cf. *DELINK Itô, Mester and Padgett, 1993, cited in Spaelti, 1994) for a more general enforcement of maintaining the input's association lines). RIME-EXHAUS carries out

the role of Hayes' Weight-by-Position (cf. WxP Zec, 1992; WEIGHT-BY-POSITION Kager, 1997; MORACCODA Broselow *et al.*, 1997). Finally, *COMPLEX- μ discriminates against multiple association linking moras to melodies (cf. *BRANCH-mora Rosenthal, 1994; Walker, 1994; NOSHAREDMORA Broselow *et al.*, 1997).

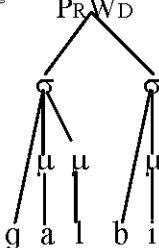
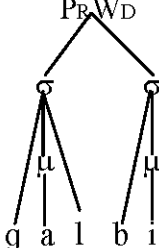
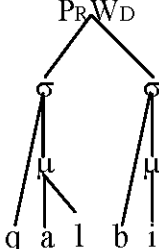
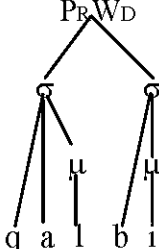
Consider the tableau (9), where the proposed constraints are ranked undominated. Clearly, introducing the moraicification constraints suggested above attains a true candidate optimization. Other candidates are ruled out because they present a non-moraic element in the rime (9 b), associate more than one melody to a given mora (9 c), or delete an underlying one (9 d).

In this section, the default CV template, potentially qualified for mono-moraic parsing, is proposed for syllabification in Hejazi and presented as the justification for the two word-final processes of vowel shortening and consonant extrasyllabicity. This claim is then formally interpreted into a pair of constraints regulating syllable moraic maximality. The two constraints portray a scaled decomposition positionally delimiting syllable moraicity to a maximum of two moras non-finally and one mora finally. The mono-moraic level of this requirement imposed on syllable moraic content is ranked lower than input-output segment correspondence and the main principles of Prosodic Hierarchy relations. The following subsections present detailed analyses, where additional OT constraints are formalized and rankings proposed to optimize final consonant extrasyllabicity and final vowel shortening, as most harmonic satisfiers of CV parsing.

3.2. Final consonant extrasyllabicity

An example of final reduction, demonstrated representationally in Hejazi, is final consonant extrasyllabicity. Compelled by the restrictions SYL-MAXIMALITY(μ) imposes, the analysis optimizes a candidate which associates a final extrasyllabic consonant (Lieberman and Prince, 1977; Itô, 1986; Kiparsky, 2003; and others) (cf. Harris and Gussmann (1998) for 'word-final onsets'). Such prosodification will violate a lower ranked constraint like Exhaustivity (Selkirk, 1996): /...VC/ \rightarrow [...(...V)₂C]₀. This process offers the justification for the lack of final mono-syllable moraic trochees, and hence lack of word final head syllable and stress.

(9)

μ μ | | /g a l b - i/	NUC, *P/C, *M/V, *COMPLEX, ONS, SYL-MAXIMALITY($\mu\mu$), MORAICITY-IO, RIME- EXHAUS, *COMPLEX- μ	MAX- IO	DEP- IO	SYL- MAXIMALITY(μ)	-CODA
a. 				*	*
b. 	*! RIME-EXHAUS				*
c. 	*! *COMPLEX- μ				*
d. 	*! MORAICITY-IO				*

The need for FT-BIN in Hejazi is quite evident. The empirical facts of the language's stress pattern demand a strict binary moraic footing (trochaic in particular). Stress is assigned to the right-most non-final heavy syllable, otherwise to the penult or antepenult, whichever is separated from the first preceding heavy syllable or (if there is none) from the beginning of the word by an even number of syllables (Al-Mohanna, 1998, 2004). This means that stress is never final, with the exception of final superheavy

syllables. Consequently, final head syllables should be avoided, which means denying any environment for creating final mono-syllabic moraic trochees, that may only be erected on final heavy syllables. However, optimizing the true output of a form that terminates in a heavy /-CVC/ sequence preceded by an odd number of light syllables can be rather problematic for the so far suggested set of constraints and/or constraint ranking. In such forms, stress is placed on the penult, i.e. the syllable separated form

the left edge of the word by an even number of light syllables. This means that this syllable must be prominent in its foot structure. To achieve such a configuration, the penultimate syllable must be footed with the final CVC sequence. Obviously, this will violate FT-BIN. Consider the following tableau:

(10) /ʃad̪ʒaratak/ → [ʃa.d̪ʒa.rá.tak]
 ‘your sg. ms. tree’

/ʃad̪ʒaratak/	FT-BIN	WSP	PARSE-SYL	ALIGN-HEAD (R)
a. ? (ʃa.d̪ʒa)(rá.tak)	*!	*		
b. ☞ *ʃa(d̪ʒá.ra)(tak)			*	*

As configured, the head foot in the true output (10 a) violates the undominated FT-BIN, as the final foot will necessarily license three moras, one associated to the first syllable [- (ra -)] and two to the second [- (-tak)]. On the other hand, the light penultimate syllable, in the falsely optimized candidate (10 b), is denied foot headedness because of the existence of a heavy ultima. However, another candidate analysis which erects a foot over a final pair of light syllables will be evaluated as most harmonious.

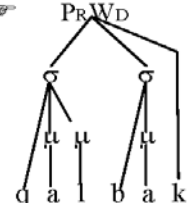
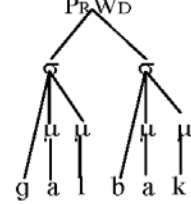
Implementing CV parsing word-finally, reducing SYL-MAXIMALITY(μ) violations by one, will help create the environment for the proposed candidate. This is the most plausible justification for parsing the first two elements of final /-CVC/ sequences into light syllables, which eventually

facilitates assigning penultimate stress in words like /ʃad̪ʒaratak/. The remainder of this subsection demonstrates how the grammar optimizes final consonant extrasyllabicity, performed to maintain CV parsing word-finally, over exhaustive syllabification.

Along these lines, more than one analysis has been suggested in the OT literature (Hung, 1994; Spaelti, 1994; Eisner, 1997). Hung (1994), for example, introduces the constraint Rhythm. By virtue of demanding a weak *n* level grid mark after each stronger *n+1*, this constraint forces final consonant "weak parsing", in Cairene for example. Also, in an article that takes on the challenge of adhering to extreme simplicity and locality in constraint formalization, Eisner (1997) interprets NON-FIN as a constraint that militates against final syllable footing. More radically, though, Spaelti (1994) introduced WEAKEDGE as a constraint preferring structural emptiness in the right periphery of prosodic categories. Collectively, all these proposals will, directly or indirectly, exclude a final consonant from the structure of the final foot.

Nevertheless, we are not actually obliged to adopt an approach that is merely asserted in an ad hoc fashion rather than following logically from general principles. Arguing for final consonant extrasyllabicity, which rules out candidate analyses with perfectly syllabified final consonants, ought to follow from a universally established principle, such as CV parsing. The tableau below demonstrates the prominent role SYL-MAXIMALITY(μ) plays:

(11) /galb-ak/ → [gal.bak] ‘your sg. ms. heart’

/galb-ak/	NUC, *P/C, *M/V, *COMPLEX, ONS, SYL-MAXIMALITY(μμ), MORaicITY-IO, RIME-EXHAUS, *COMPLEX-μ	MAX-IO	DEP-IO	SYL-MAXIMALITY(μ)	-CODA
a. ☞ 				*	*
b. 				**!	**

(12)

/ʃad̪ʒaratak/	FT-BIN	WSP	SYL-MAXIMALITY(μ)	PARSE-SYL	ALIGN-HEAD (R)
a. \varnothing [(ʃa.d̪ʒa) _{FOOT} (ra.ta) _{FOOT} k] _{PRWD}					
b. [ʃa(d̪ʒa.ra) _{FOOT} (tak) _{FOOT}] _{PRWD}			*!	*	σ

On the surface, the final consonant /-k/ is phonetically realized, as it is prosodically licensed in both candidates (11 a, b). Nonetheless, (11 a) is a better satisfier of SYL-MAXIMALITY(μ), as the final consonant does not trigger weight-by-position and consequently associates to no mora. The outcome of such prosodification rules out word-final footing. This is certainly a more definite effect, especially with forms such as the one analyzed in (10) above. Consider the tableau (12) where SYL-MAXIMALITY(μ) is included in the constraint hierarchy to preserve the universally unmarked CV parsing, which will ultimately achieve the desired footing effect.

Although tableaux (11) and (12) demonstrate evaluations optimizing true outputs, there remains one important detail. Generally, any candidate containing unsyllabified elements should be inferior to one that is perfectly syllabified. In terms of OT constraints, the analysis developed thus far does not ascertain such principle. In particular, we should determine the constraint violated in the optimal candidate analyses in (11) and (12); the one evaluating the final consonant’s prosodification status.

Phonologists have argued for a Prosodic Hierarchy in which all phonological units belong to higher prosodic structures (Selkirk, 1978, 1981, 1982, 1984; Nespor and Vogel, 1986; Itô, 1986; McCarthy and Prince, 1986, 1990a, 1990b). This means that segments belong to syllables, syllables to feet, feet to prosodic words, and so on. The dominance relations holding between the different prosodic domains are regulated by the Strict Layer Hypothesis (Selkirk, 1981):

- (13) Strict Layer Hypothesis:
 $P_n \rightarrow P_{n-1}^*$ (where $X^* =$ ‘one or more X s’)

The formality of Strict Layer Hypothesis follows from one of the basic principles of Prosodic Phonology, namely Prosodic Licensing.

Selkirk (1996) provided an OT revision of the Prosodic Hierarchy. She introduced a constraint-based formalization of the various dominance

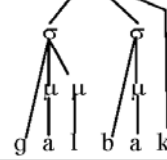
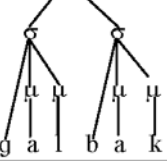
relations imposed on the hierarchy by the Strict Layer Hypothesis. These constraints are as follows:

- (14) Constraints on Prosodic Domination:
- a. Layeredness
No C_i dominates $C_j, j > i$
 - b. Headedness
Any C_i must dominate a C_{i-1}
 - c. Exhaustivity
No C_i immediately dominates a constituent $C_j, j < i-1$
 - d. Nonrecursivity
No C_i dominates $C_j, j = i$

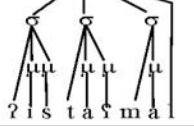
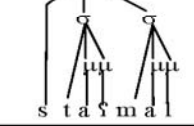
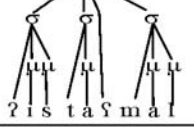

Selkirk asserts that Layeredness and Headedness are cross-linguistically undominated and consequently inviolable. The other two constraints are subject to language-particular ranking. What is of interest to us is the constraint Exhaustivity (EXHAUS). This constraint is violated when a prosodic constituent immediately dominates another that is more than one level lower in the Prosodic Hierarchy. Thus, a prosodic word should not immediately dominate a terminal segment. For Hejazi grammar, EXHAUS must be ranked at least lower than SYL-MAXIMALITY(μ), as it is always violated by forms with final / - CVC/ sequences. Tableau (15) incorporates this constraint.

Restricting degenerate prosodification to the final consonant is a central issue, however. The constraint hierarchy should disfavour any candidate analysis with non-final unsyllabified segments. As it stands, the low ranking of EXHAUS optimizes false outputs with: initial or medial degenerate association, more than one final syllabically unprosodified segment, or a final unsyllabified vowel. Tableau (16), evaluating candidate analyses of the input /staʃmal/ → [ʔis.taʃ.mal], demonstrates some consequences of the proposed account.

(15)

/galb-ak/	NUC, *P/C, *M/V, *COMPLEX, ONS, SYL- MAXIMALITY(μμ), MORAICITY-IO, RIME-EXHAUS, *COMPLEX-μ	MAX- IO	DEP- IO	SYL- MAXIMALITY(μ)	EXHAUS	-CODA
<p>a. \mathcal{P} PRWD</p> 				*	*	*
<p>b. PRWD</p> 				**!		**

(16) /staʕmal/ → [ʔis.taʕ.mal] 'he used/ employed'

/staʕmal/	NUC, *P/C, *M/V, *COMPLEX, ONS, SYL- MAXIMALITY(μ μ), MORAICITY- IO, RIME- EXHAUS, *COMPLEX-μ	MAX- IO	DEP- IO	SYL- MAXIMALITY(μ)	EXHAUS	-CODA
<p>a. ? PRWD</p> 			*!*	**	*	**
<p>b. \mathcal{P} PRWD</p> 				**	*	**
<p>c. PRWD</p> 			*!*	**	*	**
<p>d. PRWD</p> 			*!*	*	***** *	*

The proposed constraint hierarchy will not exclude false outputs as (16 b, c, and d), evaluated more harmoniously than the true output (16 a). Interpreting a number of simple and basic principles of syllabification into OT constraints will assist a given grammar, in this particular matter. Such constraints, however, should be independently motivated in cross-linguistically confirmed statements of prosodic licensing.

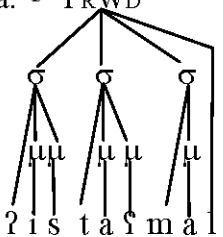
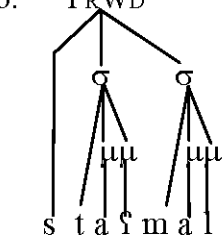
Universal Grammar may employ Alignment (McCarthy and Prince, 1993b) to discriminate against forms whose initial segments or clusters of segments are immediately dominated by the prosodic word node. In particular, a constraint, such as the one formalized in (17) below, requires the alignment of the left edge of the prosodic word with that of some syllable (cf. Clements, 1997).

- (17) ALIGN-LEFT:
Align (PRWD, L, Syll, L)
(The left edge of every prosodic word must be aligned with the left edge of some syllable).

This constraint should rank undominated in our proposed hierarchy. If so, any candidate analysis failing to align the left edges of the prosodic domains (PRWD and σ) like (16 b) will never be optimized. Consider the following tableau (18).

To rule out EXHAUS violations incurred by having the prosodic word immediately dominating a medial segment, the proposed account considers a constraint presented to attain a similar effect required for Classical Arabic. McCarthy and Prince (1990) suggested a (pre-OT) constraint whereby the linear contiguity of syllables is maintained, a constraint that does not allow interrupting the adjacency of subsyllabic elements.

- (18) /staʃmal/ → [ʔis.taʃ.mal] ‘he used/ employed’

/staʃmal/	NUC, *P/C, *M/V, *COMPLEX, ONS, SYL- MAXIMALITY($\mu\mu$), MORAICITY-IO, RIME-EXHAUS, *COMPLEX- μ , ALIGN-LEFT	MAX- IO	DEP- IO	SYL- MAXIMALITY(μ)	EXHAUS	- CODA
<p>a. σ PRWD</p> 			**	**	*	**
<p>b. PRWD</p> 	*! ALIGN-LEFT			**	*	**

- (19) Syllabic Contiguity (SYL-CONTIG):
Syllabic well-formedness is enforced over contiguous strings of subsyllabic elements.

Ranked undominated, all non-peripheral segments must be properly syllabified. Tableau (20) demonstrates how Hejazi grammar blocks forms like (16 c).

The third type of EXHAUS violations, the proposed account should control, is multiple-final degenerate association. The grammar must prevent

optimizing candidates that have more than one final segment (consonant) violating the requirements of Strict Layer Hypothesis. To account of this undesired overgeneralization, the grammar slightly augments the scope *COMPLEX evaluates, to include any prosodic node. This can be stated as follows:

- (21) *COMPLEX:
No more than one segment may associate to any prosodic node.

(20)

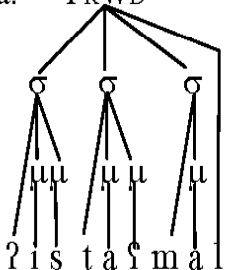
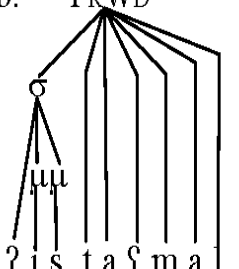
/stafmal/	Nuc, *P/C, *M/V, *COMPLEX, ONS, SYL- MAXIMALITY(μ), MORAICITY- IO, RIME- EXHAUS, *COMPLEX- μ , ALIGN-LEFT, SYL-CONTIG	MAX- IO	DEP- IO	SYL- MAXIMALITY(μ)	EXHAUS	-CODA
<p>a. σ PRWD</p>			**	**	*	**
<p>b. PRWD</p>	*! SYL-CONTIG		**	**	*	**

As a result, final associations to the prosodic word are minimized to only one segment. Consider the following tableau (22).

Thus far, the proposed account for prosodifying final /- CVC/ sequences in Hejazi argues for final consonant extrasyllabicity as the only feasible representational analysis to facilitate footing, yet more generally to satisfy the cross-linguistic universal of persistent CV-parsing. The grammar considers this

(22)

degenerate association as a violation of EXHAUS and endeavors to control possible overgeneralizations, representational or otherwise. The same rationale can be extended to the analysis of final superheavy syllables in Hejazi, or other dialects of Arabic. As discussed in the subsection below, final consonants of final /- CVVC or CVCC/ sequences will also be analyzed as extrasyllabic.

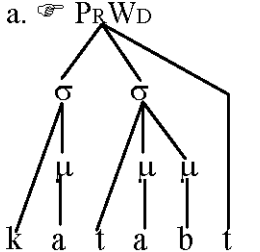
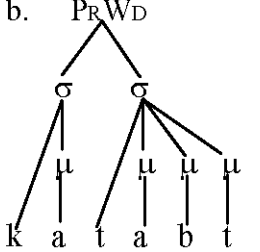
/stafmal/	Nuc, *P/C, *M/V, *COMPLEX, ONS, SYL- MAXIMALITY(μ μ), MORaicITY- IO, RIME- EXHAUS, *COMPLEX- μ , ALIGN-LEFT, SYL-CONTIG	MAX- IO	DEP- IO	SYL- MAXIMALITY(μ)	EXHAUS	-CODA
<p>a. </p>			**	**	*	**
<p>b. </p>	*! *COMPLEX		**	*	***** *	*

3.2.1. Superheavy syllables

The maximum limit of two moras per syllable is obviously a central issue in the discussion of Hejazi syllabification, hence the undominated ranking of SYL-MAXIMALITY($\mu\mu$). Nevertheless, there are some underlying sequences potentially capable of licensing more than two moras per syllable. Consequently, the basic assumption of any analysis of superheavy syllables, in Hejazi, must set out to decide the prosodic affiliation of their final consonants. To have these consonants parsed in the coda position of a final syllable implies an account assuming non-uniform syllabic moraicity, achieving no analytical competence what so ever. Nonetheless an account licensing a prosodified extrasyllabic final consonant will guarantee phonetic realization and maintain the undominated requirement on maximum syllable

moraic content. Consider the following tableau (23). The constraint hierarchy evaluates the candidate with a degenerately prosodified final consonant as more harmonious than one licensing a tri-moraic syllable, no matter how EXHAUS is satisfied. This analysis, however, does not account for cases with final consonant geminates. Being mono-segmental, associating both members of a final geminate directly to the prosodic word satisfies SYL-MAXIMALITY(μ) and incurs no violations of *COMPLEX. Yet, the stress pattern in Hejazi indicates otherwise. A final consonant geminate will always create heavy (stress attracting) syllables, suggesting that at least one member of the geminate is assigned to the coda position of such syllables.

(23) [katabt] ‘I/you sg. ms. wrote’

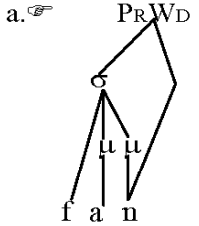
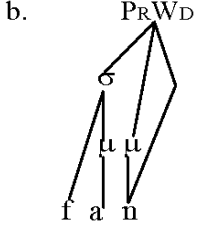
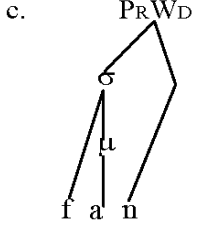
/katab-t/	NUC, *P/C, *M/V, *COMPLEX, ONS, SYL- MAXIMALITY(μ), MORAICITY- IO, RIME- EXHAUS, *COMPLEX- μ , ALIGN-LEFT, SYL-CONTIG	MAX- IO	DEP- IO	SYL- MAXIMALITY(μ)	EXHAUS	-CODA
a. \mathcal{C} PRWD 				*	*	*
b. PRWD 	*! SYL- MAXIMALITY ($\mu\mu$)			*		*

Compared to consonant clusters, geminates are underlyingly moraic (Hayes, 1989). Thus, an account that requires syllabifying underlying moras will certainly rule out total geminate extrasyllabicity. To that end, the grammar does not need to add any other constraint. Decomposing EXHAUS into its very primitive micro constraints reveals more specific domains of Exhaustivity enforcement. The fragment μ -EXHAUS, ranked undominated, blocks licensing a mora in any prosodic domain higher than the syllable. Tableau (24) evaluates key candidate analyses of an input with a final consonant geminate /fann/ ‘art’.

Therefore, extending the final consonant extrasyllabicity account to the analysis of superheavy syllables in Hejazi explains their distributional distinctiveness. Being generally final justifies the

proposed configuration of a heavy syllable plus a peripheral extrasyllabic consonant. Such prosodification generates the environment for rightmost non-final stress assignment, as the final consonant intervenes between the right edges of the final foot and the prosodic word, creating a non-final heavy syllable on which the non-final foot is erected. These assumptions raise a number of questions on the need for extrametricality in Hejazi, as a device of metrical parsing. Imposing NON-FIN (Non-finality) or any other constraint enforcing extrametricality, on the process of metrification may seem stipulative when the required effect follows from the more general principle of CV parsing (cf. Al-Mohanna, 2004).

(24)

$\mu \mu$ || /f a n/	NUC, *P/C, *M/V, *COMPLEX, ONS, SYL- MAXIMALITY($\mu\mu$), MORAICITY-IO, RIME-EXHAUS, *COMPLEX- μ , ALIGN-LEFT, SYL- CONTIG, μ -EXHAUS	MAX-IO	DEP-IO	SYL-MAXIMALITY (μ)	EXHAUS	-CODA
a. 					*	*
b. 	*! μ -EXHAUS			*	**	
c. 	*! MORAICITY-IO				*	

3.2.2. Sonority sequencing

The above discussion maintains the claim that a final consonant of a final superheavy sequence (syllable) is extrasyllabic. Consequently, the sonority profile of the final syllable should not be influenced by the sonority value of that final extrasyllabic consonant, as it is external to that syllable's structure. However, as demonstrated in (25), a final consonant cluster with rising sonority values triggers vowel epenthesis.

- (25)
- | | | | |
|-------------|---|-------------|-----------------------------|
| a. /d̤iːsm/ | → | [d̤iː.s̤im] | 'body' |
| b. /ʔiðn/ | → | [ʔi.ð̤in] | 'ear' |
| c. /hukm/ | → | [hu.k̤um] | 'law sentence
or ruling' |
| d. /gutʔn/ | → | [gu.tʔun] | 'cotton' |
| e. /fahm/ | → | [fa.h̤am] | 'coal' |

- (26) /nahr/ → [nahar] 'a river'

- | | | | |
|-------------|---|------------|------------|
| f. /nahr/ | → | [na.h̤ar] | 'river' |
| g. /ʔakl/ | → | [ʔa.k̤il] | 'food' |
| h. /habl/ | → | [ha.b̤il] | 'rope' |
| i. /sʔabr/ | → | [sʔa.b̤ur] | 'patience' |
| j. /fad̤ʔr/ | → | [fa.d̤ʔur] | 'dawn' |

The angle from which OT considers the relation between sonority and syllabification differs from that of any derivational approach. Segment sonority values block syllabification to avoid producing syllable-internal sonority troughs. Sonority, especially a sonority peak, drives syllabification, hence, the restriction on consonants associating to sonority peaks, i.e. the constraint *P/C. Consider the following tableau (26).

/nahr/	NUC, *P/C, *M/V, *COMPLEX, ONS, SYL-MAXIMALITY ($\mu\mu$), MORAICITY-IO, RIME-EXHAUS, *COMPLEX- μ , ALIGN-LEFT, SYL-CONTIG, μ -EXHAUS	MAX -IO	DEP -IO	SYL- MAXIMA LITY (μ)	EXHAUS	-CODA
a. $\left[(na)_\sigma (ha)_\sigma r \right]_{PRWD}$			*		*	
b. $\left[(na)_\sigma (har)_\sigma \right]_{PRWD}$			*	*!		*
c. $\left[(nahr)_\sigma \right]_{PRWD}$	*! SYL- MAXIMALITY($\mu\mu$)			*		*
d. $\left[(nah)_\sigma \right]_{PRWD}$		*!		*		*
e. $\left[(nah)_\sigma r \right]_{PRWD}$	*! *P/C			*	*	*

Tableau (26) demonstrates that the epenthesis and extrasyllabicity solution (26 a), the optimal candidate analysis, avoids assigning a (final) consonant to a sonority peak (26 e), with no need to syllabify a final consonant (26 b). However, the analysis will have to assume the undominated ranking of ALIGN-RIGHT, Align (LXWD, R, PRWD, R), to rule out false outputs like *[(nah)_σ(rʔ)_σ]_{PRWD}.

By this, I conclude discussing superheavy syllables and final consonant extrasyllabicity. The next subsection analyses the process of final vowel shortening in Hejazi, as an empirical piece of evidence supporting the CV parsing hypothesis.

3.3. Final vowel shortening

Hejazi, amongst other dialects of Arabic, portrays another instance of final reduction which supports the proposed hypothesis of maintaining CV syllable parsing. Demonstrated empirically, final vowel shortening is a process where underlyingly long vowels shorten finally. Examples like: /simiʔtuu/ → [si.miʔ.tu] ‘you pl. heard’ (cf. [si.miʔ.tuu.na] ‘you pl. heard us’), /lihignaa/ → [li.hiq.na] ‘we followed’ (cf. [li.hiq.naa.hum] ‘we followed them’), etc. show the length contrast in final and non-final positions. Superficially, this shortening


may be attributed to a brute force constraint like *LONG-V (cf. Rosenthal, 1994; Burzio, 1994; Benua, 1996; for example). A more plausible analysis, however, considers this process as the most natural option that satisfies SYL-MAXIMALITY(μ), and consequently adheres to the cross linguistically unmarked CV parsing.

Final Vowel Shortening is a phenomenon attested in Hejazi where long vowels, mainly subject pronouns, shorten finally. In the following group of examples, vowels appear in final and non-final position to show the length contrast.

Unlike the case of final consonant extrasyllabicity, shortening a final long vowel does not prejudice the alignment of the right peripheries of the PRWD and the final syllable. After shortening, the right edge of the final syllable will still be the right edge of the prosodic word, hence no violation of EXHAUS. Therefore, in an input like /gaddamuu/, the claim is that the final vowel shortens merely to satisfy SYL-MAXIMALITY(μ). This must crucially be coupled with the assumption that SYL-MAXIMALITY(μ) dominates a constraint like WT-IDENT (McCarthy, 1995).

(27)	a.	/katabuu/	→	[ka.ta.bu]	‘they wrote’
				(cf. [ka.ta.búu.ha])	‘they wrote her name’)
	b.	/gataluu/	→	[gá.ta.lu]	‘they killed’
				(cf. [ga.ta.lúuh])	‘they killed him’)
	c.	/ʔaxaðtuu/	→	[ʔa.χáð.tu]	‘you pl. took’
				(cf. [ʔa.χað.túu.ni])	‘you pl. took me’)
	d.	/simiʔtuu/	→	[si.míʔ.tu]	‘you pl. heard’
				(cf. [si.miʔ.túu.na])	‘you pl. heard us’)
	e.	/lihignaa/	→	[li.híq.na]	‘we followed’
				(cf. [li.hiq.náa.hum])	‘we followed them’)
	f.	/misiknaa/	→	[mi.sík.na]	‘we caught’
				(cf. [mi.sik.náa.ha])	‘we caught her’)
	g.	/sahabtii/	→	[sa.háb.ti]	‘you sg. fm. pulled’
				(cf. [sa.hab.tíi.ni])	‘you sg. fm. pulled me’)
	h.	/d ^ʕ arabtii/	→	[d ^ʕ a.ráb.ti]	‘you sg. fm. hit’
				(cf. [d ^ʕ a.rab.tíi.hum])	‘you sg. fm. hit them’)
	i.	/gaddamuu/	→	[gád.da.mu]	‘they introduced’
				(cf. [gad.da.múu.na])	‘they introduced us’)
	j.	/saamahuu/	→	[sáa.ma.hu]	‘they forgave’
				(cf. [saa.ma.húu.kum])	‘they forgave you pl.’)
	k.	/ʃaafuu/	→	[ʃáa.fu]	‘they saw (something)’
				(cf. [ʃaa.fúu.ni])	‘they saw me’)

(29) /gaddamuu/ → [gad.da.mu] ‘they introduced’

/gaddamuu/	Nuc, *P/C, *M/V, *COMPLEX, ONS, SYL- MAXIMALITY($\mu\mu$), MORAICITY-IO, RIME-EXHAUS, *COMPLEX- μ , ALIGN- LEFT, SYL-CONTIG, μ -EXHAUS	MAX- IO	DEP- IO	SYL- MAXIMALITY (μ)	WT- IDENT	-CODA
a.  gad.da.mu				*	*	*
b. gad.da.mu				**!		*
c. gad.dam		*!		**	**	**
d. gad.da.mu.u	*! ONS			*		*

(28) WT-IDENT($\mu\mu$):
If $\alpha \in \text{Domain}(f)$,
if α is bimoraic, then $f(\alpha)$ is bimoraic.
(No shortening)

Consequently, the account assumes that input-output weight identity correspondence is sacrificed to maintain a constraint on syllabification. These ideas are summarized in tableau (29). However, we will have to assume that a constraint like I-CONTIG (McCarthy and Prince, 1995), which militates against skipping any medial material (moras in this case), dominates SYL-MAXIMALITY(μ). McCarthy and Prince (1995) provided the formalization below:

(30) I-CONTIG (“No Skipping”)
The portion of S1 standing in
correspondence forms a contiguous string.

Also, the account should not allow mora deletion on the left periphery (of the mora tier), a process which does not disturb contiguity of any input mora strings. This may be blocked by a constraint ranked above SYL-MAXIMALITY(μ) to discriminate against initial mora deletion (on the mora tier) and ultimately non-final instances of (vowel) reduction. This constrain will be a formalization of the assumption that the constituent’s right edge is more plausibly nominated for “weakening” processes. The account will capitalize on an interpretation of EDGE-MARKEDNESS, a restriction aimed at constraining the effects of extrametricality (cf. Hayes 1995). It can be formalized as follows:

(31) EDGE-MARKEDNESS
The unmarked edge for vowel shortening is
the right edge.

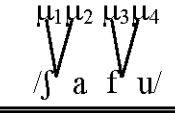
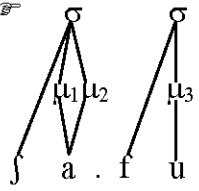
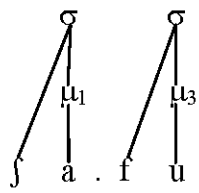
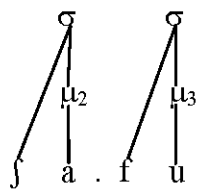
These two constraints will rule out instances of non-final mora deletion to satisfy SYL-MAXIMALITY(μ). The proposed account should not be extended to non-final vowel length contrasts. Consider the following tableau (32).

Therefore, we saw how SYL-MAXIMALITY(μ) prompts Final Vowel Shortening across the board, including forms with unfootable final /- CVCVV/ sequences, in the same manner that triggered final consonant extrasyllabicity.

4. Conclusion

The proposed analysis employs a set of independently motivated constraints on prosodification, justifying final reduction processes in Hejazi and achieving the desired effects for metrification. The account commits itself to universality and abstracts away from any redundancy in the process of syllabification. The universally unmarked CV is presented as the core syllable template for Hejazi. Final vowel shortening and final consonant extrasyllabicity, that help create the desired configuration for CV parsing, offer justification for the lack of final mono-syllable moraic trochees, and hence lack of word final head syllable and stress.

(32)

 /ʃ a f u/	I-CONTIG	EDGE-MARKEDNESS	SYL-MAXIMALITY(μ)	WT-IDENT
a. 			*	
b. 	*!			**
c. 		*!		**

References

Al-Mohanna, F. "Syllabification and Metrification in Urban Hijazi Arabic: Between Rules and Constraints." *Doctoral dissertation, University of Essex*, (1998).

Al-Mohanna, F. "Paradoxical Non-finality: Stress Assignment in Three Arabic Dialects." *MS Thesis, King Saud University*, (ROA-735), (2004).

Bakala, M.H. "The Phonology and Morphology of Meccan Arabic: A Generative Phonological Approach." *Doctoral dissertation, University of London*, (1973).

Baković, E. "Foot Harmony and Quantitative Adjustments." *MS Thesis, Rutgers University*, (ROA-168), (1996).

Benua, L. "Identity Effects in Morphological Truncation." In: J. Beckman, L. Dickey and S. Urbanczyk (Eds.), *Papers in Optimality Theory. UMOP*, Vol. 18, 77-136; Amherst: GLSA, (1996).

Brame, M. "Arabic Phonology: Implication for Phonological Theory and Historical Linguistics." *Doctoral dissertation, MIT*, (1970).

Broselow, E. "Cairene Arabic Syllable Structure." *Linguistic Analysis*, Vol. 5, (1979), 345-382.

Broselow, E.; Chen, S. and Huffman, M. "Syllable Weight: Convergence of Phonology and Phonetics." *Phonology*, Vol. 14, (1997), 47-82.

Burzio, L. *Principles of English Stress*. Cambridge: Cambridge University Press, (1994).

Clements, G.N. "Berber Syllabification: Derivations or Constraints?" In: I. Roca (Ed.), *Derivations and Constraints in Phonology*. Oxford and New York: Oxford University Press, (1997), pp. 289-330.

Clements, G.N. and Keyser, S. Jay. *CV Phonology: A Generative Theory of the Syllable*. Cambridge, MA: MIT Press, (1983).

Eisner, J. "Foot Form Decomposed: Using Primitive Constraints in OT." *MIT Working Papers in Linguistics 3*, (ROA-205), (1997).

Halle, M. "Respecting Metrical Structure." *Natural Language and Linguistic Theory*, Vol. 8, (1990), 149-176.

Halle, M. and Kenstowicz, M. "The Free Element Condition and Cyclic versus Non-cyclic Stress." *Linguistic Inquiry*, Vol. 22, (1991), 457-501.

Harris, J. and Gussmann, E. "Final Codas: Why the West Was Wrong." In: *Cyran*. (1998), pp. 139-162.

Hayes, B. "Compensatory Lengthening in Moraic Phonology." *Linguistic Inquiry*, Vol. 20, (1989), 253-306.

Hayes, B. *Metrical Stress Theory: Principles and Case Studies*. Chicago and London: University of Chicago Press, (1995).

Hewitt, M. "Deconstructing Foot Binariness." *MS Thesis, University of British Columbia*, (ROA-12), (1994).

Hung, H. "The Rhythmic and Prosodic Organisation of Edge Constituents." *Doctoral dissertation, Brandeis University*, (ROA-24), (1994).

Idsardi, W. "The Computation of Prosody." *Doctoral dissertation, MIT*, (1992).

Itô, J. "Syllable Theory in Prosodic Phonology." *Doctoral dissertation, University of Massachusetts*, Amherst, (1986); New York: Garland Press, (1988).

Jakobson, R. *Selected Writings 1: Phonological Studies*. The Hague: Mouton and Co., (1962).

Kager, R. "Alternatives to the Iambic-trochaic Law." *Natural Language and Linguistic Theory*, Vol. II, (1993), 381-432.

Kager, R. "Rhythmic Vowel Deletion in Optimality Theory." In: I. Roca (Ed.), *Derivations and Constraints in Phonology*. Oxford and New York: Oxford University Press, (1997), pp. 463-499.

- Kiparsky, P.** "Syllables and Moras in Arabic." In: C. Fery and R. Vijver (Eds.), *The Syllable in Optimality Theory*. Cambridge University Press, (2003).
- Liberman, M. and Prince, A.** "On Stress and Linguistic Rhythm." *Linguistic Inquiry*, Vol. 8, (1977), 249-336.
- McCarthy, J.** "Formal Problems in Semitic Phonology and Morphology." *Doctoral dissertation, MIT*, (1979a); New York: Garland Press, (1985).
- McCarthy, J.** "On Stress and Syllabification." *Linguistic Inquiry*, Vol. 10, (1979b), 443-466.
- McCarthy, J.** "Extensions of Faithfulness: Rotuman Revisited." *MS Thesis, University of Massachusetts*, Amherst, (ROA-110), (1995).
- McCarthy, J.** "The Length of Stem-final Vowels in Colloquial Arabic." In: Mohammad T. Alhawary and Elabbas Benmamoun (Eds.), *Perspectives on Arabic Linguistics XVII-XVIII*. Amsterdam: Benjamins, (2005), pp. 1-26.
- McCarthy, J. and Prince, A.** "Prosodic Morphology." *MS Thesis, University of Massachusetts and Brandeis*, (1986).
- McCarthy, J. and Prince, A.** "Foot and Word in Prosodic Morphology: The Arabic Broken Plural." *Natural Language and Linguistic Theory*, Vol. 8, (1990a), 209-283.
- McCarthy, J. and Prince, A.** "Prosodic Morphology." In: M. Eid and J. McCarthy (Eds.), *Perspectives on Arabic Linguistics II: Papers from the Second Annual Symposium on Arabic Linguistics*. Amsterdam: John Benjamins, (1990b), pp. 1-54.
- McCarthy, J. and Prince, A.** "Prosodic Morphology I: Constraint Interaction and Satisfaction." *MS Thesis, University of Massachusetts, Amherst; Rutgers University*, (1993a).
- McCarthy, J. and Prince, A.** "Generalized Alignment." In: *Yearbook of Morphology*. (1993b), pp. 79-153.
- McCarthy, J. and Prince, A.** "Faithfulness and Reduplicative Identity." In: J. Beckman, L. Dickey and S. Urbanczyk (Eds.), *Papers in Optimality Theory. UMOP*, Vol. 18, 249-384; Amherst: GLSA, (1995).
- Nespor, M. and Vogel, I.** *Prosodic Phonology*. Dordrecht: Foris, (1986).
- Prince, A.** "A Metrical Theory for Estonian Quantity." *Linguistic Inquiry*, Vol. 11, (1980), 511-562.
- Prince, A. and Smolensky, P.** *Optimality Theory: Constraint Interaction in Generative Grammar*. Cambridge, MA: MIT Press, (2002).
- Rosenthal, S.** "Vowel/Glide Alternation in a Theory of Constraint Interaction." *Doctoral dissertation, University of Massachusetts*, Amherst, (1994).
- Rosenthal, S. and van der Hulst, H.** "Weight-by-position by Position." *Natural Language and Linguistic Theory*, Vol. 17, (1999), 499-540.
- Selkirk, E.** "On Prosodic Structure and Its Relation to Syntactic Structure." In: T. Fretheim (Ed.), *Nordic Prosody*. Vol. 2, Trondheim: TAPIR, (1978), pp. 111-140.
- Selkirk, E.** "Epenthesis and Degenerate Syllables in Cairene Arabic." In H. Borer and J. Aoun (Eds.), *Theoretical Issues in the Grammar of the Semitic Languages. MIT Working Papers in Linguistics 3*, (1981), pp. 209-232.
- Selkirk, E.** "Syllables." In: H. van der Hulst and N. Smith (Eds.), *The Structure of Phonological Representations*. Vol. 2, Dordrecht: Foris, (1982), pp. 337-383.
- Selkirk, E.** "On the Major Class Features and Syllable Theory." In: M. Aronoff and R.T. Oehrle (Eds.), *Language Sound Structure*. Cambridge, MA: MIT Press, (1984a), pp. 107-136.
- Selkirk, E.** *Phonology and Syntax: The Relation between Sound and Structure*. Cambridge, MA: MIT Press, (1984b).
- Selkirk, E.** "The Prosodic Structure of Function Words." In: J. Beckman, L. Dickey and S. Urbanczyk (Eds.), *Papers in Optimality Theory. UMOP*, Vol. 18, 439-469; Amherst: GLSA, (1996).
- Sherer, T.** "Prosodic Phonotactics." *Doctoral dissertation, University of Massachusetts*, Amherst, (ROA-54), (1994).
- Spaelti, P.** "Weak Edges and Final Geminates in Swiss German." *MS Thesis, UCSC*, (ROA-18), (1994).
- Walker, R.** "Buriat Syllable Weight and Head Prominence." In: J. Merchant, J. Padgett and R. Walker (Eds.), *Phonology at Santa Cruz III*. Santa Cruz: University of California, (1994), pp. 99-110.
- Watson, J.** "Syllabification Patterns in Arabic Dialects: Long Segments and Mora Sharing." *Phonology*, Vol. 24, (2007), 335-356.
- Zec, D.** "Constraints on Moraic Structure." Paper presented at U Mass, (April 30, 1992).

:

كلية اللغات والترجمة ، جامعة الملك سعود ،
الرياض ، المملكة العربية السعودية

(قدم للنشر في ١١/٠٧/١٤٢٩هـ؛ وقبل للنشر في ١٣/١٠/١٤٢٩هـ)

. تقدم هذه الورقة دراسة لعملية تقييم التقطيع الكلمي في الحجازية ، طارحة في تحليلها التفاضلي (المعتمد على القيود) ذلك التابع غير الموسوم كونياً (صامت-صائت) على أنه القالب المطلوب لتفضيل التقطيع الحقيقي. ولدعم هذا المقترح ، يقدم التحليل أمثلة على الاختزال الختامي ، مثل تقصير الصوائت والرفل المقطعي للصوائت ، والتي تبرر بدورها حقيقة انعدام الترويشات المجتزئية ختامياً ، الأمر الذي نتج عنه أيضاً انعدام المقاطع الرأسية والنبر ختامياً. ويسعى هذا الرصد لتجزئة المطلب على منتهى المجتزئية المقطعية ، مقدماً القيد : منتهى-المقطعية (مجتزئاً) كمحدد أدنى للمحتوى المجتزئي ، بينما نجد أن القيد : منتهى-المقطعية (مجتزئين) يضع المقاطع الكلمية ثنائية المجتزئاً كحد أعلى للتقطيع. وبوضعه ضمن قائمة القيود المهيمنة ، سيسمح القيد : منتهى-المقطعية (مجتزئين) بتوزيع المقاطع الكلمية الثقيلة في المواضع غير الختامية وسيحدد ظهور المقاطع الفوقية بالطرف الختامي للكلمة. أما القيد : منتهى-المقطعية (مجتزئاً) ، الذي يحافظ على المقطع الكلمي الأعلى والأدنى افتراضياً ، وعلى امتداد نطاق التقطيع ، فسندجد أنه يحتل مرتبة أدنى ليضمن تقطيعاً غير موسوم في المواضع الأخرى داخل النطاق ، وعندما يتيح ذلك قيود الموسومية والمحافظة الأعلى ترتيباً ، والمقننة لدعم مبادئ تطريزية أخرى ، وفي مواضع غير ختامية.