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ARTICLE

Loan Words Stress System in Bedouin Jordanian Arabic: An Optimality Theoretic Account

Saleem Abdelhady

Liberal Arts Department, American University of the Middle East, Egaila 54200, Kuwait

ABSTRACT

This study examines the stress patterns of loanwords in Bedouin Jordanian Arabic (BJA) through an Optimality Theory framework. It analyzes a dataset of thirty-four words, including monosyllabic, disyllabic, and polysyllabic forms. The analysis is conducted in two phases: first, evaluating the data based on metrical parameters to verify earlier findings; and second, applying the Optimality Theory model to provide further insights. The findings confirm that stress in BJA follows a trochaic foot structure, progressing from left to right, with quantity sensitivity and final mora extrametricality, while avoiding degenerate feet. The study also highlights that BJA stress patterns align with universal phonological constraints, establishing a clear hierarchy that governs stress placement. The research supports the idea that loanword adaptation in BJA conforms to established theoretical frameworks, reinforcing prior conclusions and providing a comprehensive understanding of stress assignment mechanisms. Ultimately, this study contributes to the broader discussion on stress patterns in Arabic dialects within a theoretical phonological context.

Keywords: Phonology; Loan Words; Stress; Jordanian Arabic; Optimality Theory

*CORRESPONDING AUTHOR:

Saleem Abdelhady, Liberal Arts Department, American University of the Middle East, Egaila 54200, Kuwait; Email: Saleem.abdelhady@aum.edu.kw

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1. Introduction

The stress system of loan words can be problematic because words in their original language has to follow the stress system of that language [1–3]. However, once they are integrated into a new language, speakers would either borrow words as they are or change the way words are stressed to fit into the stress system of the target language.

The stress system of Arabic and its dialects has been an issue of research and debate in the literature [4–7]. A number of dialects has been investigated from different perspectives. Carine Arabic [5, 8], Shihri Arabic [9], Jordanian Arabic [4, 10] and many other languages have been described. Yet, none of the studies has investigated the stress system of loan words that have been borrowed into Arabic from an Optimality theoretic perspective. To the best knowledge of the researcher, Huneety, A., and Mashaqba's study is one of the studies that has tackled the issue in one of the dialects spoken in Jordan, Bedouin Jordanian Arabic (BJA) [10]. However, their analysis centers around describing stress patterns from a metrical perspective only. The current study, therefore addresses a need toward bridging a gap in the literature in favour of a constraint-based model of loan words in BJA following [11].

2. Testing the Validity of Claim

According to the literature [10], stress in BJA is predictable and can be described using the metrical parameters suggested by Hayes [7]. Their analysis shows that the type of syllable and its weight does affect the stress pattern across the sample. Thus, if final syllables are heavy/super heavy, they receive stress yet if the final syllable is not heavy stress would fall on the penultimate heavy/ super heavy syllable and in case where the penultimate syllable is not heavy stress would fall on the antepenultimate syllable. Part of their analysis they show that stress assignment cannot transgress the antepenultimate syllable even if the antepenultimate syllable is light. Thus, by and large, their conclusion goes side by side with the stress system in Arabic [8]. They add that the foot type in BJA is moraic trochee. That is to say, stress assignment depends on the number of moras in a syllable. Thus, it is possible to construct feet as (LL) and (H) but not (L) (HH), (LH) or (HL) and it follows the following parsing (X ･) from the left edge of the word to the right.

If their analysis on the right track, changing the parameters should not allow stress to fall on the right syllable. In this part of the article, I would test their analysis by changing the parameters they proposed; by ruling out the parameters, the section would draw a conclusion that stands for or against [10] conclusion.

In order to pinpoint the foot type, iambic or trochaic, and to reveal the directionality of footing, I test four logical choices: (1) iambic - left to right, (2) iambic – right to left, (3) trochaic left to right and (4) trochaic –right to left. In fact, constructing words as iambs or changing the direction of footing should not give a prediction on the right position of stress if the conclusion drawn by [10] is right. In order to test the validity of their claim, consider the following examples:

(1)

(a) *ŠA.ṣi* ‘chasis’

(b) *ša.ṢI*

(2)

(a) *’SI.na.ma* ‘cinema’

(b) *si.NA.ma*

(c) *si.na.MA*

The two words are considered neutral with regard to weight – both words consist of light syllables. The word in (1) consist of two light syllables while that in two consists of three light syllables. Having in mind that feet are constructed as either (LL) or (H) and assuming that the degenerate feet in not allowed, we can see that in (1a) the word can be iambic if feet are constructed from right to left and it can be trochaic if feet are constructed from left to right. Thus, it does not give a conclusive prediction on the type of footing nor directionality. In (1b), the second syllable is stressed; even though the position of stress is wrong but it gives a clue on limiting our options. The case of (1b) appears when feet are iambic (. X), and they are constructed from right to left. Since the example shows that stress must fall on the first syllable, this option is ruled out; feet are not iambic constructed from right to left. It is clear, however, that a word that consists of two syllables cannot by itself give a conclusive prediction about the position of stress in BJA. Now I turn to the second word in (2). If feet are iambic and constructed from right to left, a (LL) syllabification gives us two choice (2b), (si.NA) ma and (2c) si.(na.MA). Since the two choice wrongly predict the position of stress, this means that the iambic feet that are constructed from right to left can be ruled out. On the other hand if we change the directionality of footing and kept the foot type unchanged. We would have two other choices (si.NA).ma and si (na MA). Again, stress would be assigned to the wrong syllable.

After ruling out the possibility of constructing feet as iambs, I turn on to constructing feet as trochees, testing the two directions, left and right. Let us assume firs that feet are constructed from right to left. Since trochees are built as (X .), the second syllable NA in si.(NA.ma) would be stressed leaving the syllable that is stressed in the word unstressed. Yet, if the last foot is left unfooted for some reason like extrametricality stress would fall on the right syllable SI. Although SI is the right syllable to receive stress, feet should not be considered as trochaic from right to left. The reason would become clear when discussing extrametricality and degenerate feet. The analysis, therefore, leaves us with one option – feet are trochaic that are constructed from left to right.

Since our conclusion shows that feet are trochaic and given the fact that the language is sensitive to the number of moras, it becomes clear that in this dialect two footing types are allowed (H) or (LL). For example, in a word like ’kī.lu ‘kilo’, it is possible to foot the first syllable on its on without combining it to the second syllable so that the word could be parsed as (’kī) lu. Such parsing abides the fact that feet are constructed as (H) but not as (HL) as in (’kī.lu) nor (L) as in (lu).

Before dealing with the degenerate feet and extrametricality, we should consider the position of stress at the word level. According to [10], main stress falls on the rightmost edge of the word. Moreover secondary stress is not allowed in that dialect. What does the data tell us about their conclusion? Considering examples with syllables that have equal weight, we could draw an initial conclusion about their argument. Since the dialect is sensitive to weight, a claim that will be tested through the discussion, main stress should fall on a syllable that goes side by side with the right edge. Consider the following examples:

(3)

(a) ṯēr.mos.’TĀT ‘thermostat’

(b) ṮĒR.mos.’tāt

The example in (3) above shows a word that consists of two super heavy syllables, ṯēr and ’tāt and one heavy, mos. stressing the leftmost syllable of the word ṯēr.mos.’tāt ‘thermostat’ gives a wrong stress position as can be seen in example (3b) while assigning stress on rightmost syllable, ’tāt gives a right position of stress in BJA. Thus, as it appears from this example, main stress falls on the right most syllable of the word as is illustrated in example (3a). To confirm this conclusion, let us examine the position of stress in a three syllable word that consists of two heavy syllables mis.’kā.ra ‘mascara’. Since a light syllable cannot form a foot on its on nor it can be part of a heavy syllable only the heavy syllables can be footed – (mis)(’KĀ) ra. Clear as it is stress assignment at the word level does not fall on the left most syllable but rather it falls in the rightmost heavy syllable. The discussion, therefore, tilts toward validating the claim that stress in BJA falls on the right most syllable and rules out the second option.

Using the grid model of data analysis, the aforementioned words can be represented in (4) and (5) below:

(4)

(		X)	Word level
(X)	(X)	(X)	Foot level
H	H	H	Weight
ṯēr	mos	’TĀT	Syllable

(5)

(	X	)	Word level
(X)	(X)	(.)	Foot level
H	H	L	Weight
mis	*’KĀ*	*ra*	Syllable

Moreover, their analysis shows that there are two types of extrametricality in that dialect: C extrametricality and foot extrametricality; C extrametricality contributes to their analysis in that super heavy syllables would be counted as heavy and heavy syllables can be counted as light at the final edge of the word. On the other hand foot extrametricality would give the correct pattern of stress assignment in syllables that have the following structure (H) (LL). Such a structure would end up as (H) <LL> and stress would fall on H satisfying not only footing type and quantity but also the position of main stress at the word level. Based on their claim stress at word level in BJA falls on the rightmost syllable. In addition, their data shows that the degenerate feet are prohibited. That is to say, light syllables of one mora cannot be stressed (L).

Since BJA is weight sensitive, syllables that are heavier than other would attract stress in normal cases as it has been illustrated in mis'KĀ.ra . The 'KĀ syllable has been stressed and not ra sine ra is light while 'KĀ is heavy. This aspect shows that in words where the final syllable is heavy yet it does not receive stress the final syllable has undergone mora extrametricality. For example, in the word 'PA.war the syllable war is actually light since the final mora r is extrametrical as can be illustrated in (6) and (7) below

(6)

(X		)	Word level
(X	.)		Foot level
L	L		Weight
PA	*wa*	*<r>*	Syllable

(7)

(	X	)	Word level
(.)	(X)		Foot level
L	H		Weight
ma	TŌ	*<r>*	Syllable

As mentioned earlier, consonant extrametricality changes the weight of the syllable. In (6) it changes the syllable from a heavy into a light syllable while in (7) it changes the super heavy syllable into a heavy. If consonant extrametricality is not considered stress would be assigned to the wrong syllable. Let us consider the same word in (6) without having consonant extrametricality as it is shown in (8) below

(8)

(	H	)	Word level
(.)	(X)		Foot level
L	H		Weight
pa	*WAR*		Syllable

Due to the fact that BJA is weight sensitive, a heavy syllable would attract stress. Having this idea in mind makes stress in (7) falls on the heaviest syllable in the word – WAR. Yet, given the fact that PA is the syllable that receives stress in this dialect suggests that WAR is not heavy. Thus, the conclusion that can be drawn since WAR does not attract stress it is light and the foot of the word (PA.war) consist of two light syllables, (LL) as can be seen in (6) above. Since the degenerate feet is not allowed in the language, it becomes logical to analyze words as having consonant extrametricality. In fact, saying that the final syllable is extrametrical creates to degenerate feet. Thus, if PA is stressed while war is considered extrametrical, the BJA dialect should be a dialect that allows degenerate feet – which is not the case.

According to the literature [10], BJA has another type of extrametricality at the level of the foot. It is called by foot extrametricality [8] — a case in which the last foot is considered extrametrical in words that end with LL on the condition that stress domain is not exhausted. Due to the limitation of the data provided in their paper to illustrate this phenomenon, I cannot find a way to test the validity of their claim except by the example they present as evidence. The pattern would appear in words of such pattern (H) <LL> as shown in (9) below.

(9)

(X		)	Word level
(X)	<(X	.)>	Foot level
H	L	L	Weight
KAS	*<ta*	*ra>*	Syllable

Even though the data on this type of extrametricality is not sufficient, I can safely say that without such type of extrametricality stress would end up on the wrong syllable. In my previous discussion, I have shown that stress at the word level falls on the right. If (8) does not have foot extrametricality the word would be represented as having two feet. See (10) below.

(10)

(	X	)	Word level
(X)	(X	.)	Foot level
H	L	L	Weight
kas	*TA*	ra	Syllable

Since the second foot is at the right edge of the word, main stress would fall at TA but not on KAS. However, we find stress on KAS instead – at the left of the word (contradicting all the data). This paradox can only be solved by assuming that the final LL foot is extrametrical as I have already explained in (8) above.

To sum up, in this section I have presented an argument evaluating [10] conclusion about the metrical parameters they proposed for describing stress in BJA loan words. Their claim have been tested by changing the parameters and observing if switching the parameters would give any different results. As I have argued changing the parameters would only result in a stress being assigned to a wrong syllable. After ruling out the competing choices, I argue that the conclusion and the parameters set by[10] fit the data described in their paper. In the following section, I develop the discussion from an Optimality Theoretic (OT) account following[11].

3. OT Analysis

The basic idea of OT is that grammar is not governed by rules but rather by violable universal constraints[7, 9, 11–13]. All languages share a universal set of constraints, yet they differ in the way these constraints are ranked[14–24]. The mechanism of OT depends on the relationship between an input that goes through a GEN(rator). The Gen component of grammar creates a set of possible candidates; the candidates goes through an Eval(uator) that limits there number by ruling out candidates through evaluating them with the desirable output. In such a process the candidates violate some universal constraints; those that commit more violations and/or violate high ranking constraints are ruled out. What remains can be described as the optimal output. Briefly, the process can be described in the following lines: Input => GEN => Candidates => EVAL = Output.

After presenting the basic mechanism of OT, now I turn back to analyzing BJA in light of such theory. Initially, the analysis begins with expressing the basic metrical parameters introduced earlier about BJA. These include: (1) every word in BJA must receive a stress; (2) BJA constructs bimoraic trochaic feet from left to right; (3) the language bans degenerate feet, yet; (4) allows extrametricality at the level of C and the foot. Furthermore; (5) the language is sensitive to quantity.

Let us examine the assumption that the language is trochaic and not iambic. For the purpose of the current point, we need two constraints:

RHTYPE TROCHEE: feet are trochaic at the moraic level – (LL – μμ) (H – μμ)

RHTYPE IMAB: feet are iambic

(11)

/ša.ṣi/	RHTYPE TROCHEE	RHTYPE IAMB
☞ (ŠA.ṣi)		*
(ša.ṢI)	*!	

Since every lexical word should be receive stress then it would be natural to predict that every lexical word should have some footing. Thus, the constraint Lx = Pr should be a high ranked constraint in that language. See the following tableau.

(12)

/ša.ṣi/	Lx = Pr
☞ (ŠA.ṣi)	
☺ (ŠA).ṣi	
ša.si	*!

In tableau (12), the constraint Lx = Pr by itself leads to two optimal outputs, (ŠA.ṣi) and (ŠA).ṣi and rules out only one candidate ša.si since it does not have any footing. Thus, our initial observation shows that there is a need to include more constraints to have only one candidate at this stage. What makes our optimal candidate wins over the second candidate is the fact that the foot is binary consisting of two light syllables (LL). Therefore, we should introduce a new constraint, FTBIN to rule out the second candidate as a winner.

(13)

/ša.ṣi/	FTBIN	Lx = Pr
☞ (ŠA.ṣi)		
(ŠA).ṣi	*!	

Even though the tableau above does not give us a ranking argument between the two constraints, it indicates that feet must be binary at some stage of the grammar. This natural prediction pours out from the fact that the language builds bimoraic trochees — feet should have μμ.

An immediate inference arise by reading the tableau above, if the BJA builds binary trochaic feet at the moraic level then it should have no relative ranking between RHTYPE TROCHEE, FTBIN and Lx = Pr since the three constraints entail each other. Having a trochaic foot means having binary moraic feet which also means that the word should have some parsing. Yet there is a necessity to show that having binary feet does not guarantee that feet be trochaic; in fact, they could be iambic. Thus, to rule out the possibility of having iambic binary feet. I show that every word should have some feet by ordering Lx = Pr before RHTYPE TROCHEE which by itself goes before FTBIN. Saying before, however, does not mean that they outrank each other at this stage. Yet, the argument so far indicates that these constraints must be high ranked.

Due to the face that BJA stress system does not allow stress to fall on preantipenultimate syllables, based on the data of this paper, I argue that words that consist of four syllables the first syllable should be treated as extrametrical. Since the data in hand does not include words that have more than four syllables, the argument could be validated but not generalized. In light of this, I introduce a new constraint that bans the language from parsing the preantipenultimate syllable and ignores its presence in words. It goes as follows.

*(σ)σσσ : Avoid parsing preantipenultimate syllables. Footing starts from the ultimate syllable. Assign a violation mark for every parsed preantipenultimate syllable.

I argue initially that this constraint is high ranked in the language. Thus, my initial observation shows that this constraint out ranks the idea that every syllable should be parsed. That is to say it out ranks the following constraint.

PARSE SYL: Parse every syllable in the prosodic word. Assign a violation mark for every syllable that is left unparsed.

This can be illustrated by the following tableau.

(14)

/ ta.la.fu.ni /	*(σ)σσσ	PARSE-SYL
! ☞ ta.(la.fu) (ni)		*
(ta) (la.fu).(ni)	*!	

Based on tableau (14), it is clear that parsing in our winner candidate begins from the antepenultimate syllable; that is to say, it starts parsing by counting three syllables from the right edge of the word. Yet, our winner candidate does not go with the constraints that argue for the fact the feet must be bimoraic trochees since it parses a monosyllabic foot, (ni) on its own. What does this indicate? It indicates that some constraints must come between *(σ)σσσ and PARSE-SYL. The constraint that bans feet from being monomoraic and the one that indicates that feet must be trochaic should outrank PARSE-SYL yet they should be outranked by *(σ)σσσ and Lx=Pr to guarantee that every lexical word to have some stress. To support this argument, examine tableau (15) below.

(15)

/ ta.la.fu.ni /	Lx = Pr	*(σ)σσσ	RH:TR	FTBIN	PARSE-SYL
☞ ta.(la.fu) ni					**
(ta) (la.fu).ni		*!	*	*	*
ta.(la.fu) (ni)			*!	*	*

The tableau above shows two facts about the language: (1) since it is clear that the language does not allow syllables of one mora to be footed on their own, the language bans degenerate feet – one the basic requirements of degenerate feet (i.e., stress to fall on mono syllables) is to construct monosyllables. Yet, as this option is ruled out by the fact that FTBIN »PARSE-SYL. The argument for this ranking can be illustrated further in following example.

(16)

/ci.na.ma/	FTBIN	PARSE-SYL
☞ (CI.na) ma		*
(CI.na) (ma)	*!	

The candidates in (16) show a different pattern of parsing; while our winner candidate does not parse the final syllable, the second one does. Thus, the argument can be drawn at this stage is that our winner candidate wins because it does not parse a monomoraic foot on its own.

The tableau in (16) highlights a question concerning final syllables. Does our winner candidate win because of a constraint that bans final syllables to be footed or because of what I claimed that the foot is monomoraic? The answer to this question cannot be obtained from the candidate in (17) by itself nor from the candidate I presented in tableau (15). In fact, the language shows that final syllables should undergo parsing in some words otherwise stress would end up on the wrong syllable. Consider the following examples.

(17)

A. *to.ma.'TĪK* 'automatic'
B. *ka.ran.'TĪN* 'quarantine'
C. *dak.'TŌR* 'doctor'
D. *ra.'DĀR* 'radar'

What is evident in the examples above is that the final syllable can be footed on its own. It is clear, then, that any constraint that bans final syllables from being footed on their own should be lower than the constraint that indicates that every syllable in a lexical word must be footed. Thus, the following constraint should be lower than PARSE-SYL.

NONFINALITY: the final syllable of a prosodic word should be left without parsing. A violation incur if the final syllable is parsed.

To illustrate this point consider what happens if NONFINALITY outranks PARSE-SYL. See the example in (18) below.

(18)

/ to.ma.'tīk /	NONFINALITY	PARSE-SYL
(TO.ma). tīk		*
! ☞ (to.ma).(TĪK)	*!	

It is clear that the candidate that is supposed to win loses if we assume that NONFINALITY is more decisive than PARSE-SYL. Thus, at this stage we have a reason to fortify our initial assumption that NONFINALITY is below PARSE-SYL. Still, it is clear that ranking NONFINALITY above PARSE-SYL will not give birth to our winner. The reason is that the language construct bimoraic trochaic feet and our winner has three moras by being a super heavy syllable (TĪK - the peak consists of μμ since it is a long vowel and the coda counts for μ). How can then stress fall on such syllables?

Based on metrical argument [10], I introduce a new constraint that prevents parsing the final consonant in word final position. This means that if a syllable is heavy or super heavy because of the final consonant, the constraint bans the syllable from including this consonant in its structure. Yet, the syllable remains, and is treated like a normal syllable in light of the other constraints. The constraint goes as follow.

NONFINAL C: the final consonant at word final position should be left unparsed. A violation occurs if the final consonant is parsed.

I also argue that this is a high undominated constraint in the language. Thus, it falls within the highly ranked constraints introduced earlier. The constraint by itself entails the existence of a constraint that needs C to be parsed. Therefore the argument should be based on the following logic: if feet should be binary then FTBIN must outrank PARSE C. But how can we account for words like 'ʔA.kis 'axe'? In this word the final syllable is bimoraic thus it does not create any violation for either FTBIN or PARSE C. Yet stress falls on the light syllable 'ʔA. Thus, we extend the logic to say that the consonant does not count in this word too since it obeys the constraint NONFINAL C. Thus, the final syllable is considered light and the bimoraic trochee can be best proved by parsing the two LL. To make the long story short, FTBIN » PARSE C and NONFINAL C » PARSE C then, FTBIN » NONFINAL C too. Tableau (19) below is illustrative; compare the following two tableaus for illustration of the previous ranking argument.

(19)

/ka.ran.'tīn /	NONFINAL C	PARSE C
☞ ka.ran.'(TĪ)n		*
ka.ran.'(TĪN)	*!	

As it appears from (19) and (20), satisfying feet to be binary is crucial in BJA. Moreover, it can be noted that the language also bans final consonants at the edge of the word. To have the two works at the same time the final syllable once, it loses its final consonant and becomes light, is parsed in a way to make binary trochaic feet. Doing so means that the first syllable is the best choice to be stressed. Thus, stressing KIS in tableau (20) makes the word lose in the competition.

(20)

	FTBIN	NONFINAL C	PARSE C
☞ (?A.ki)s			*
?a(KIS)		*!	

Now I can go back to my previous discussion about NONFINALITY. It is clear from the argument that having a non-final syllable in BJA is possible but not at the expense of super heavy syllable. Moreover, it also seems that those syllables that are not super heavy and lose their C in word final position are not left unparsed but they are footed along with the previous syllable. I conclude from these points that Nonfinality is a low ranking constraint. But where does it fit? It comes below PARSE-SYL. This can be illustrated by the ranking argument below.

(21)

/ to.ma.'tīk /	PARSE-SYL	NONFINALITY
(TO.ma). tīk	*!	
☞ (to.ma).(TĪ)k		*
☺ (TO.ma). (tī)k		*

Thus, the constraints introduced so far out rank NONFINALITY. The missing piece in our discussion so far is that why the moraic trochee (TĪ) receives the stress over the trochaic foot (TO.ma). Clearly the reason should be attributed to the fact that the language is quantity sensitive and to the fact the main stress falls on the right most parse syllable in the prosodic word. To account for this fact, we need some additional constraints that not only align footing in the prosodic word but also state that BJA stress is sensitive to weight and that main stress falls on the right most parsed syllable at the word level. These constraints can be stated as follows: ALLFTLEFT/ ALLFTRIGHT, MAIN RIGHT, WSP (Weight to Stress Principle). To understand the relative ranking of these constraints, consider the following examples.

(22)

a. *'KAS.ta.ra 'custard'*
b. *'ʔA.kis* 'axle'
c. *'DI.ji.tal* 'digital'
d. *mis.'KĀ.ra* 'mascara'

Having in mind that BJA is quantity sensitive language; stress assignment goes through the following algorithm starting from the right edge of the word:

Look for a super heavy syllable at the ultimate position: YES, assign stress => NO, look for a heavy syllable in the penultimate syllable; YES, assign stress => NO, look for a light syllable in the antepenultimate => YES, assign stress. Stop searching.

Two points should be noticed from reading the algorithm above: (1) stress is sensitive to the weight of the syllable starting from the right edge and (2) stress does not fall on the preantipenultimate syllable as the algorithm stops after the antepenultimate.

The examples in (23) show different patterns in which stress falls at heavy syllables as it is shown in (a and d). Moreover, the examples show words in which heavy syllables do not receive stress (e.g., b, c, and mis in d). It is clear then that the constraint that is associated with stressing heavy syllables should be out ranked by some constraints. Furthermore, it is clear that in case there is more than one heavy syllable stress falls on the right most foot (e.g., d) but in case there are more than one trochaic foot in a word and one of them is heavy stress falls on the heaviest one (e.g., a). However, when the heavy syllable is in word final position stress does not fall on it (e.g., b and c). In OT, the algorithm can be expressed with reference to the previously mentioned constraints.

(23)

S	σ
L**S**	σ σ
H**S**	σ σ
LL**S**	σ σ σ
LH**S**	σ σ σ
SH**S**	σ σ σ
L**S**L	σ σ σ
H**H**H <c>	σ σ σ
L**H**L	σ σ σ
H**H**L	σ σ σ
HLL	σ σ σ
HL**H**L	σ σ σ σ
LL**H**L	σ σ σ σ
LLH<c>	σ σ σ
LLL	σ σ σ
HL	σ σ
HH<c>	σ σ
LH<c>	σ σ
LL	σ σ

4. Conclusion

In summary, the analysis of loanword stress patterns in Bedouin Jordanian Arabic (BJA) reveals a systematic adherence to trochaic foot structures, quantity sensitivity, and constraints governed by Optimality Theory. This study has successfully validated the findings of[10] through both metrical parameters and OT analysis, demonstrating the robustness of stress assignment in BJA. The intricate interplay of constraints, including extrametricality and weight sensitivity, highlights the unique phonological characteristics of BJA. Future research could expand this framework to explore stress patterns in other dialects and languages[25], further enriching the understanding of loanword adaptation within phonological systems.

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