

## VOWEL LENGTH AS AN ORDERING CONSTRAINT IN BADINI KURDISH BINOMIALS: A QUANTITATIVE ANALYSIS

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### ABSTRACT

Major studies on binomial order (Cooper and Ross, 1975; Wright et al. 2005; Benor and Levy, 2006; Lohmann 2011; Mollin, 2012; Saaed, 2013) commonly agree that vowel length has a key role in the linear ordering of words in binomial phrases. Therefore, vowel length has been regarded as one of the basic phonological constraints of binomial order. The current study examines the role of vowel length as an ordering constraint in binomial phrases in Badini Kurdish. It proposes the hypothesis that there is a preference in Badini Kurdish binomials to place the word containing the shorter vowel in the first position and the word containing the longer vowel in the second position. To confirm the productive existence of this pattern in Badini Kurdish binomials, the study employs a quantitative analysis approach which is generally regarded as the most up-to-date research methodology used in the relevant literature. After applying the quantitative analysis to a big number of Badini Kurdish binomials (263 pairs), the study has come up with the finding that there is an outstanding preference for the ordering pattern hypothesized in this study. It has also been found that this ordering preference is statistically highly significant. Thus, the study concludes that this finding proves that vowel length can be considered an ordering constraint in Badini Kurdish binomials where the preference is frequently given for placing the words with the shorter vowels in the first position. Finally, it has to be pointed out that this finding is compatible with similar studies on binomials in other languages.

**KEYWORDS:** *Vowel Length, Binomial-ordering, Badini Kurdish Binomials, Linguistic Quantitative Analysis.*

### 1. INTRODUCTION

Malkiel is the first linguist who employed the term *binomial* in linguistics. According to Malkiel, a binomial is a “sequence of two words pertaining to the same form-class, placed on an identical level of syntactic hierarchy, and ordinarily connected by some kind of lexical link” (1959: 113). More recent works have agreed with Malkiel’s definition: Gustafsson states that “a binomial is a sequence of two words which belong to the same form-class and which are syntactically coordinated and semantically related” (1984: 123), and Bhatia confirms this as well by describing a binomial as “a sequence of two or more words or phrases belonging to the same grammatical category having some semantic relationship and joined by some syntactic device such as ‘and’ or ‘or’” (1993: 108).

In general, linguistic studies on binomials can be classified into two main types: studies that look

at the linear word order preference in binomials and studies that look at the overall structure of the entire binomial phrase. The first type has been commonly referred to as studies on binomial order (Benor and Levy, 2006) while the second as studies on binomial formation (Benor and Levy, 2006; Mollin, 2012) or binomial construction (Masini, 2006). The current research is concerned with the first type of studies as it is an attempt to describe one of the phonological factors that may have a role to play in linear word order in binomials in Kurdish language, particularly in Badini Kurdish (BK).

As its title suggests, studies on binomial order aim at finding the rules (or constraints) that determine linear word order on binomials. The relevant literature (e.g., Abraham, 1950; Malkiel, 1959; Cooper and Ross, 1975; Benor and Levy, 2006) indicates that many such studies exist and that their findings verify the existence of both linguistic and non-linguistic constraints to govern binomial order. The linguistic constraints are of

various types; the phonological type is one of them. One of the basic phonological constraints found to be highly active in binomial order is vowel length (see section 2 for details). The present study describes the role of vowel length in binomial order in BK binomials; it carefully examines the importance, activity and statistical significance this phonological constraint may have in BK binomials. This is based on a quantitative analysis of a huge number of data examined in the present study.

The structure of this research paper is as follows: Section 2 reviews the literature. Section 3 briefly describes the variety of the Kurdish language investigated in this work. While section 4 states the research questions posed in this study, section 5 presents the proposed research hypothesis. Section 6 spells out the research methodology adopted in this study. Section 7 reports the findings of the study and section 8 concludes the study.

## 2. LITERATURE REVIEW

Previous studies on binomial order agree that phonology has a central role to play in the process of linear ordering in binomial phrases. In the relevant literature there have been many attempts to discuss the phonological constraints that determine binomial order. To introduce a comprehensive account of the subject, we will first look at all the phonological constraints presented in the relevant literature and then specify our review to the vowel length constraint which is the main focus of the current research paper.

### 2.1 THE PHONOLOGICAL CONSTRAINTS

Previous studies strongly indicate that phonology has a big role to play in binomial order. Almost all relevant studies hypothesize phonological constraints of binomial order. In this section we will consider all the phonological constraints proposed in the literature.

To begin with, let us look at the account made by Jespersen (1905), who, as reported by Abraham (1950: 279), believed that binomial order in English could be largely determined by rhythm. Here is the explanation offered by Jespersen:

In combinations of a monosyllable and a disyllable by means of *and*, the practice is always to place the short word first because the rhythm then becomes the regular 'aa 'aa instead of 'aaa 'a (

' before the a denotes the strongly stressed syllable). Thus we say *bread and butter, not butter and bread; further bread and water, milk and water, cup and saucer, wind and weather, head and shoulders, by fits and snatches, from top to bottom, rough and ready, rough and tumble, free and easy, dark and dreary, high and mighty, up and doing ...*

As a matter of fact, it is this phonological explanation that forms the basis of one of the main phonological constraints applied by subsequent researchers in this field. This will be evident in the course of this review as we shall pass through several studies making use of the same constraint.

Another linguist who tried to deal with binomial order phonologically was Behaghel (1909) as mentioned in Abraham (1950: 283). Behaghel, who worked on German binomials, reiterated Jespersen's theory, adding another phonetic rule to the effect that binomials with words containing accented *i* or *u* precede those with accented *a*. Applying this rule to Spanish binomials, Abraham observed that this rule could account for a few cases. But he also found that there are other cases in Spanish where *a* precedes *i* or *u*. Once again, there were many exceptions to this rule and, therefore, the search continued for a better account.

Contrary to Jespersen's rhythm theory, Scott (1913), as reported in Abraham (1950), examined two hundred seventy-six English binomials chosen at random and found that in forty-two percent of his cases the longer word preceded the shorter. The following are some of his examples:

1. butter and eggs  
chapter and verse  
summer and fall  
profit and loss

Although Scott was correct in showing such counter examples to the rhythm theory suggested by Jespersen, he offered no theory of his own as a substitute to explain order preference in binomials.

Morawski (1927) was the next scholar who developed another phonological theory of binomial order. As mentioned in Abraham (1950), he suggested a number of further phonological rules to determine the order of rhymed words of equal syllabic length. These are the rules he proposed (cited in Abraham 1950: 281):

1- Words beginning with a vowel or *h* precede those beginning with a consonant.

2- In the case of words of equal length or nearly equal length both beginning with a consonant, the voiceless precede the voiced, the palatal the dental, and the dental precedes the labial.

3- Of the three labials *f*, *m* and *p*, *f* precedes *p* and *f* and *p* precede *m*.

These rules, as shown by Abraham, fitted only the cases of rhymed binomials, and could not account for the unrhymed ones. Although Morawski claimed he could hardly find counter examples to his rules, Abraham (p.282) stated many exceptions which invalidate them. For example, the rules could not account for binomials in which the two words begin with vowel sounds. This is why Abraham thought that these rules could not cover all binomials and many of them were, therefore, left unclassified.

In his study, Malkiel (1959) mentioned what he called *orchestration*. Looking at examples such as those in (2), he asserted that rhyme and alliteration play a major supporting role which produces “a powerful welding effect on the whole” (p.122):

2. heckle and jeckle  
by hook or (by) crook  
to toil and moil  
rough-and-tough (speech)

Apart from rhyme, he referred to other such welding supporting effects as: first, instances of *assonance* as in:

3. hit or miss  
rise and shine  
second, some other examples showing “...significant coincidence between concluding segments smaller than required for a rhyme, e.g. single consonants and consonant clusters” (p.122):

4. east and west  
north and south  
first and last  
good and bad

and third, instances of what Malkiel called *imperfect rhymes* involving one accented and one unaccented vowel:

5. male and female  
man and woman

The other effective factor he mentioned as being widespread is *alliteration* which refers to the repetition of initial consonants:

6. bed and board  
big and black  
birds and bees  
deaf and dumb  
dust and dirt

Moreover, Malkiel showed the role that morphology might play in binomial order when he mentioned morpheme repetition. The following are some of his examples in this regard:

7. obverse and reverse  
sooner or later  
upwards and downwards

In addition, he also touched upon cases where these factors might interact with each other. For example, he found that *alliteration* and *echoing* of the word final segment may work jointly as in:

8. tit or tat  
to meddle and muddle

He also noticed that this effect might be doubled if a certain morpheme is being repeated as well:

9. bigger and better  
farther and faster

Furthermore, he pointed out that “the repetition of a final morpheme easily coincides with rhyme” (p.124):

10. hither and thither  
highways and byways

Having introduced these examples, we can point out that Malkiel treated rhyme and alliteration, on the phonological level, and parallelism, on the morphological level under the rubric of *orchestration*, showing that “...all three tend to support one another and separately or jointly serve to underpin binomials” (p.125). But we may, quite reasonably, note that the above-mentioned points made by Malkiel cannot explain why the first item in a binomial is given a preference over the second one. In fact, this observation is quite right as Malkiel’s *orchestration* account was not given as an explanation of order preference of the first word over the second in a binomial but rather as an explanation of binomial formation as a whole.

As for his account of sequential order preference, Malkiel set a number of phonological factors that may have a role to play in binomial order. He summarized these factors saying that they are "...describable by the qualitative and quantitative distribution of sounds, accentual and tonal schemas, total length of segments (with separate attention to the number of syllables, to the number of phonemes, and to the phonetic duration)" (p.149). In this connection, the operative phonological tendency that he observed was this: "Modern English displays a very marked partiality to short plus long: either monosyllable plus (normally paroxytonic) disyllable or two monosyllables of unequal size; rarely a mono- or di-syllable plus a polysyllable" (p.149). Here are some of the examples he gave to show this short-before-long ordering preference:

**11.** big and little  
death and destruction  
fame and fortune  
far and away  
salt and pepper

We should not forget that this finding is the same as that made previously by Jespersen (1905) as we mentioned earlier. But Malkiel also noticed that exceptions to this phonological constraint do exist and he gave some instances such as these in (12):

**12.** chapter and verse  
classes and masses  
a gentleman and a scholar  
hither and yon  
salaries and wages

However, we should also note here that this finding is not new for Malkiel as it was made earlier by Scott (1913) as mentioned above. Malkiel's contribution in this regard is probably his statement that such exceptional cases do not "...exceed 10% and can almost invariably be accounted for by powerful constellations of special circumstances inimical to this deep-rooted predilection" (Malkiel, 1959: 150). In addition, it is worth mentioning that he also observed that the same tendency is operative in various other languages such as German, French, Spanish, Portuguese, Russian, and Polish.

The next scholar who dealt with binomial order phonologically is Bolinger (1962). In this paper, Bolinger tried to answer some questions asked by

Malkiel (1959) who posed two specific phonological questions. After noting that "[m]odern English displays a very marked partiality to short plus long: either monosyllable plus (normally paroxytonic) disyllable, or two monosyllables of unequal size", Malkiel went on to ask, apropos of *bright and shiny* with five phonemes each, "[d]oes the fact that the latter [the word "shiny"] spreads them over two syllables recommend it for the position of B [second member]?" The second question was asked with reference to cases like *pots and pans*: "[w]here the number of the phonemes is equal, does the phonetic duration of contrastable sounds merit separate consideration?" (p.149). Trying to address these questions, Bolinger (1962) offered evidence that the answer to both questions was yes.

With these questions in mind, Bolinger gave a phonological account of binomial order. He noted that prominence could be regarded as an important factor responsible for the binomial order due to the fact that the most convenient arrangement of syllables and, therefore, of the words containing them "is one in which those to be made prominent alternate with those to be kept subdued" (p.129). After classifying and inspecting a number of English binomials, he pointed out that when we order elements in binomials, "we look for the following three things: the accented syllable flanked by unaccentable ones; the accented syllable open and sonorous; the accented syllable in terminal position (p. 131). In addition to showing how these points were effective in binomial order, Bolinger supported his explanation by running three preference tests the results of which were all positive. In the end of his study, Bolinger concluded that such a preference for the above-mentioned phonological features in binomial order may result from the fact that they "make speech more intelligible" (p.138). Unlike his phonological account, which has been tested experimentally, Bolinger's statement that the phonological features regulating binomial order *make speech more intelligible* could have been discussed further and experimentally verified as well.

Up to this point, we have introduced the main phonological arguments on binomial order in the 1950s and 1960s. We would like to draw attention to the fact that although different scholars approached the subject phonologically, they



focused on more or less similar points such as rhythm and the number of syllables that each word has. Nothing or very little was said about other phonological features such as vowel length, vowel quality, consonant sonority and consonant clusters. These features were described in detail by Cooper and Ross (1975) which is our next stop.

As a matter of fact, the study of Cooper and Ross is one of the comprehensive works in the field of binomials. Dealing with binomial order both phonologically and semantically, Cooper and Ross presented one of the detailed studies of expressions characterized by a frozen word order. In this section, we will introduce their phonological account only as it is the main focus of the present research.

Phonological constraints in binomial order have received a comprehensive investigation by Cooper and Ross (1975) and, later on, by Ross (1982). In their co-authored study, Cooper and Ross proposed seven phonological principles that, taken together, can account for the great majority of English binomials as they assume. These rules are reproduced in (13):

**13.** Compared to place 1 elements, place 2 elements contain, other factors being equal:

1. More syllables [P (Pānini's law)]
2. Longer resonant nuclei [V]
3. More initial consonants [Ci#]
4. A more obstruent initial segment, if both place 1 and place 2 elements start with only one consonant [Ci]
5. A vowel containing a lower second formant frequency [F2]
6. Fewer final consonants [Cf#]
7. A less obstruent final segment, if both place 1 and place 2 elements end in a single consonant [Cf]

(Cooper and Ross, 1975: 71)

In most cases, they based the above principles on examples made up of conjoined elements which differ minimally in the segment under investigation, i.e. examples that are minimal pairs, to use a phonological term. However, there exist no minimal pairs for some rules and in such cases the validity of the principle in question is based on examples which are non-minimal pairs but nevertheless suggestive. Supportive examples given by Cooper and Ross of each of the constraints stated above appear in (14) respectively:

**14.**

a- vim and vigor; hot and heavy; hale and hearty; wild and wooly; rough and ready.

b- stress and strain; trick or treat.

c- fair and square; sink and swim; make or break; helter-skelter.

d- wear and tear; walkie-talkie; razzle-dazzle; wheel and deal.

e- this and that; one or two; man and boy; fiddle-faddle; criss-cross.

f- sink or swim; betwixt and between; wax and wane.

g- kith and kin; push and pull; thick and thin; hit or miss; safe and sane.

The first thing to note is that Cooper and Ross's phonological account is more detailed than those of their predecessors. Thus, unlike their predecessors' attempts, their attempt is not restricted to the description of the syllable structure in terms of quantity or quality. They rather suggest dealing with matters that were newly tackled in the investigation of binomial order at that time such as vowel length, sonority of both initial and final segments, and consonant cluster.

Since the publication of Cooper and Ross's paper, the constraints which they put forward have been the subject of further analysis in several subsequent works. Let us begin with Cutler and Cooper (1978) who carried out "a phoneme-monitoring experiment" to indicate that the phonemes are recognized more quickly in the sequence "monosyllabic before bisyllabic" than in the reverse order. Also, they argued that the vowel of the first word is actually higher than that of the second word. This means that it is a vowel with a lower first formant, not second as suggested by Cooper and Ross.

Also interested in a further investigation of Cooper and Ross's constraints were a couple of psycholinguists, Pinker and Birdsong (1979), who ran a number of experiments aiming at checking the "speaker's sensitivity to rules of frozen word order" which is the title of their research. After examining the phonological rules proposed by Cooper and Ross experimentally, they concluded that "rules of frozen word order are psychologically real".

Oden and Lopes (1981) also performed experimentally based research on the same topic but their aim was to account for how these rules operate in combination. They concluded that when different rules are combined in determining the frozen order, "it does not appear that the effects

produced by these rules can be compounded independently” (p.678). Thus, constraint interaction was another point that raised the need for further research.

Ross (1982), this time working on his own, introduced another investigation basically related to the phonological rules alone. Based on examining some more data, he suggested a number of modifications. These were associated with two rules: F2 and Cf#. In another study, Oakeshott-Taylor (1984) examined experimentally the role of just one of the rules mentioned in Cooper and Ross. In particular, this study was restricted to investigating “the identity of the vowels in conjoined CVC syllables” (p.236). It concluded that the quality of the vowel is an important factor in determining BO.

In studies confined to the question of why in paired popular names (e.g. *Fred and Wilma*, *Barney and Betty*, *Sonny and Cher*) the male name tends to precede the female name in English, Wright and Hay (2002) and Wright et al., (2005) studied linear order in popular names in American English applying, among other rules, the phonological constraints proposed by Cooper and Ross. They found that compared with the female name, the male name tends to contain more of the phonological features that give them preference to take up the first position.

Finally, it has to be pointed out that the recent studies pertaining to binomial order adopted the same constraints suggested by Cooper and Ross (1975). Benor and Levy (2006) is considered one of the most inclusive recent accounts of not only phonological constraints but of all the remaining types of constraints. This study is remarkable mainly because the authors adopted ordering constraints already posed in the literature and made good use of potential linguistic findings that have come to light since then. Thus, while it is true that they followed all the phonological constraints proposed by Cooper and Ross in their analysis, they contributed to this field by offering phonological justifications for the constraints and by proposing some further phonological constraints such as those relevant to stress, syllable weight and syllable openness. To conclude this section, it should be emphasized that the same phonological account suggested in Cooper and Ross and improved by Benor and Levy is followed by the most up-to-date studies on binomial order (e.g. Lohmann, 2011 and 2012; Mollin, 2012).

## 2.2 THE VOWEL LENGTH CONSTRAINT

Now that we have finished reviewing the phonological constraints on binomial order, we may narrow down our discussion to consider the phonological constraint which is the central focus of the current study. As we have introduced in the above review, Cooper and Ross (1975) suggested a set of seven phonological constraints that determine binomial order in English. Vowel length is one of the constraints that they suggested and explained as follows: the word containing the shorter vowel tends to occur in the first position while the word containing the longer vowel tends to occur in the second position in the same binomial phrase in English. Here are some of the examples they give:

### 15. stress and strain

trick or treat

hem and haw

The existence of the same constraint was confirmed by many subsequent scholars. In a different research paper in which he worked independently, Ross (1982: 276) specified the first position of English binomials for a “short monophthong” and the second position for a “long vowel or diphthong”. Oakeshott-Taylor (1984) carried out a number of experiments to investigate the phonological constraints which are influential in binomial order and found that vowel length is an important factor in English where the second position tends to be taken by the word with the longer vowel. The more recent works on binomial order in English have also found an outstanding preference for the second position to have a longer vowel: Wright et al. (2005), Benor and Levy (2006), Lohmann (2011) and Mollin (2012) have asserted the remarkable preference for B to have a longer vowel.

If we look at relevant studies of binomial order in languages other than English, we can find that there are some studies which concern binomial order in both Arabic and Kurdish languages. Saaed (1997) presented a detailed investigation of binomial order in Iraqi Arabic and Saaed (2013) worked on a detailed investigation of binomial order in Standard Arabic. The productive existence of the vowel length constraint has been confirmed for Arabic binomials in both of these studies. Binomials in Kurdish have also been the subject of few studies recently: Hamasoor (2007), Jameel (2013) and Saaed and Simo (2016). Hamasoor’s work is not related to binomial order

since it is mainly concerned with the classification of Kurdish binomials into their syntactic parts of speech. Although Jameel (2013) is a study of binomial order in Kurdish, it is limited to the investigation of the semantic and pragmatic constraints of ordering only. Saaed and Simo (2016) is a study which focuses mainly on the effect of the phonological constraint of syllable count on Kurdish binomials. Therefore, the present study is a pioneering work aiming at contributing to the field of binomial order studies in BK by investigating the role of vowel length in the process of linear ordering in Kurdish binomials.

### 3. KURDISH VARIETY

The variety of the Kurdish language studied in this research is Kurmanji which is also called Badini Kurdish (henceforth BK) in Iraq. Kurdish is a language that belongs to the Indo-Iranian branch of the Indo-European family of languages. Although it contains a number of varieties, it is generally agreed upon among linguists that Kurmanji and Sorani are the most outstanding Kurdish varieties (Gerard and Daniel, 1998; Thackston, 2006). Among these two dialects, Kurmanji is the more frequently used one since it is the dialect used by the largest number of Kurds (cf Kurdish Academy of Language's, 1992).

### 4. RESEARCH QUESTIONS

The primary aim of the present research is to answer the following questions: Is the vowel length ordering constraint active in binomials in BK? If the answer is found to be yes, then the second research question would be to double check if this activity is so productive that it is statistically significant and that it is not just a matter of chance.

### 5. RESEARCH HYPOTHESES

To answer the abovementioned questions convincingly, we propose to check out the following hypothesis in our data: The word with the shorter vowel precedes the word with the longer vowel in the same binomial phrase.

## 6. RESEARCH METHODOLOGY

### 6.1 DATA

The data studied in the current work are the binomial phrases which are characterized with a high frequency of occurrence in BK. They are completely based on the data analyzed in the recent research of Saaed and Simo (2016). The total number of binomials is 263 pairs. They have all been written in Latin orthography,

phonemically transcribed and then reviewed by some colleagues specialized in BK.

### 6.2 METHODOLOGY

Recent studies on binomial order constraints ((Benor and Levy, 2006; Lohmann, 2011; Mollin, 2012; Saaed, 2013; Saaed and Simo, 2016) apply a special kind of a statistical quantitative analysis as the main research methodology in their works. The main reason is that this type of analysis enables the researcher to double check the actual existence of the ordering constraint under investigation and to make sure that the constraint is statistically active and productive, and does not just exist as a matter of chance. Previous studies concerned with binomial order were subjective in their judgment as they were based on mere observations. Therefore, some of them were really doubtful about the actual productivity of their results. Thus, Cooper and Ross (1975: 79) were among the first scholars who raised the need for a statistical quantitative analysis of binomial order:

Since such [their] data consist of non-minimal pairs, however, strong support can only be provided by sampling a very large number of such pairs and stating the statistical probabilities of a phonological regularity of interest, regarding other phonological factors as undesirable "noise" in the data. Since English contains very few minimal pairs with which to test certain regularities, it appears necessary to resort to such statistical sampling procedures in the future if we hope to be able to state with any degree of certainty the existence of certain regularities, and, of at least equal importance, the relative strengths of these regularities.

Two basic quantitative measurements are employed in this type of analysis. The first one measures the activity of the constraint under investigation. This is achieved by calculating the satisfaction rate of the constraint in the data. While the second one measures the productivity of the activity of the constraint under investigation. This is achieved by considering the statistical significance of the constraint under investigation. The results of these calculations are shown by reporting the alignment trends of the constraint in terms of the proportion  $\pi_{\text{active}}$  of the binomials active for the constraint under investigation and which are aligned with the constraint; p-values for these proportions are derived from the null hypothesis of the binomial distribution with parameter 1/2. These statistical measurements

have been made using the SPSS (Statistical Package for the Social Sciences).

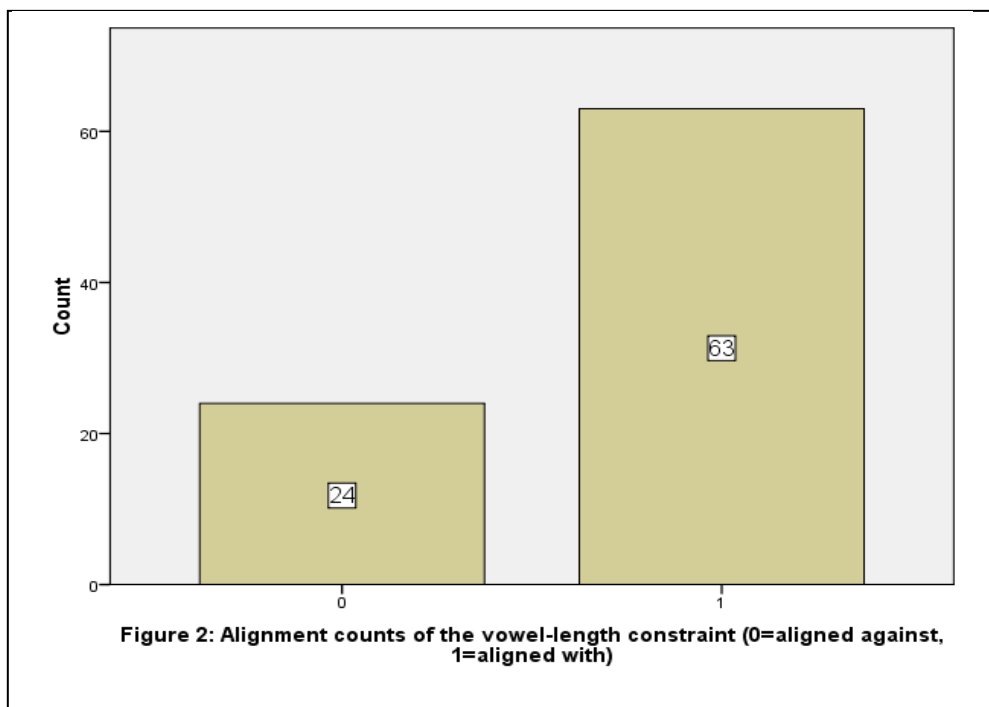
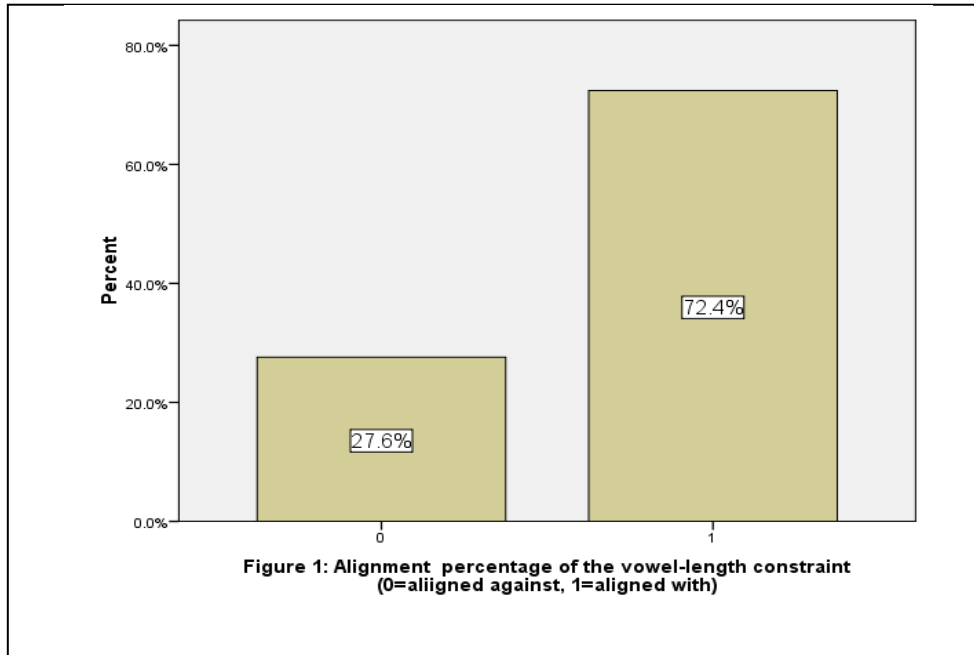
### 6.3 CODING

In coding for vowel length in the data analyzed in the current study, the following Phonemic length division, suggested in Hasan (2012), has been depended on:

- a) Short vowels: i , u , o , a
- b) Long vowels: i : , e : , a :

### 7. FINDINGS

In this section we report the findings of the study. We will start first by recalling the hypothesis proposed in the current study: the word with the shorter vowel precedes the word with the longer vowel in the same binomial phrase. Figures 1 and 2 show the satisfaction rates in the binomials analyzed in our data:





As can be seen in the abovementioned figures, there is an outstandingly frequent pattern in the binomials in our data to have the word with the shorter vowel in the first position and the word with the longer vowel in the second position. This finding can be expressed statistically by saying that the number of binomials which are aligned with the ordering constraint hypothesized in the 16.

ser u çav /sar u tʃa:v/ ‘head and eye’  
 jin u mêr /ʒin u me:r/ ‘wife and husband’  
 reş u spî /raş u spi:/ ‘black and white’  
 dev u lêv /dav u le:v/ ‘mouth and lip’  
 şeş u bêş /ʃaʃ u be:ʃ/ ‘six and five’  
 sist u xar /sist u xa:r/ ‘unstick and askew’  
 çep u rast /tʃap u ra:st/ ‘left and write’  
 kevn u nwî /kafn u nwi:/ ‘old and new’  
 dil u can /dil u dʒa:n/ ‘heart and soul’

current study is obviously higher than the number of cases aligned against the hypothesis. Therefore, this finding provides clear evidence that there is a prominent tendency in BK binomials studied in this research towards satisfying the ordering constraint hypothesized in the current study. The list mentioned in (2) below are some of the supportive examples found in our data:

xeml u xêl /xaml u xe:l/ ‘ornamenting and scarf’

All the pairs in (2) and many more in our data evidently demonstrate the existence of a frequently occurring tendency in BK binomial phrases to have the longer vowel in the second rather than the first position. In order to confirm that this tendency stands for a predominant regularity in BK binomials, let us consider some further statistical details shown in figure 1:

**Table (1):-** Binomial test of the vowel-length constraint

	Category	N	Observed Prop.	Test Prop.	Asymp. Sig. (2-tailed)
vowel_length	Group 1	1.00	63	.72	.000 <sup>a</sup>
	Group 2	.00	24	.28	
	Total		87	1.00	

a. Based on Z Approximation.

Table 1 gives the number of the binomials that agree (statistically speaking *align with*) the hypothesis proposed in the current study as well as the number of the binomials that do not agree (*align against*) the hypothesis. First of all, let us start with the total number of cases where the ordering constraint hypothesized in this work is found to be involved (*active*). The total number is 87 binomial pairs. Out of these, 63 binomials (or 72%) are aligned with the constraint whereas 24 binomials (or 28%) are aligned against it. Table 1 also shows that the satisfaction rate of the binomials aligning with the constraint is highly significant ( $p < .001$ ). Achieving a satisfaction rate which is statistically highly significant evidently indicates the vowel length factor is one of the phonological factors which is regularly active and productive in the ordering of binomials in BK. Accordingly, this finding strongly confirms the hypothesis proposed in the current study that there is a tendency to place words of shorter vowels in the first position in BK binomials. In addition, the finding is in line with the relevant research in the literature which confirms the existence of the

same constraint for binomials in English and some other languages (see section 2).

## 8. CONCLUSION

The conclusion of the present study can be drawn by restating the research questions asked back in section 4 and answering them. The first question: (1) Is the vowel length ordering constraint active in binomials in BK? Based on the finding explained in the section 7, the answer is that the vowel length ordering constraint is an active constraint in the binomials in our data. The second question: (2) If the answer is found to be yes, then the second research question would be to double check if this activity is so productive that it is statistically significant and that it is not just a matter of chance. Based on the finding explained in the section 7, the answer to the second question is that the activity of the vowel length ordering constraint is statistically highly significant ( $p < .001$ ).

The present research therefore concludes that there is statistical evidence on the real existence of the vowel length ordering constraint in BK binomials.

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## Appendix

Idiomatic Translation	Literal Translation	Latin	Kurdish Binominals	No.
Sense of Thankfulness	Head and eye	ser u çav	سەر و چاڤ	1
All sides (All details)	Top and bottom	ser u bin	سەر و بن	2
	Head and foot	ser u pê	سەر و پێ	3
Outward (Appearance)	Head and front	ser u ber	سەر و بەر	4
Dependency	Hand and foot	dest u pê	دەست و پێ	5
	Front and back	ber u pişt	بەر و پشت	6
	Bosom and front	sîng u ber	سینگ و بەر	7
	Eye and eyebrow	çav u birî	چاڤ و بری	8
	I and you	ez u tu	ئەز و تو	9
	Male and female	nêr u mê	نێر و مێ	10
	Bride and groom	bwîk u zava	بویک و زافا	11
	Wife and husband	jîn u mêr	ژن و مێر	12
Parents	Mother and father	deyk u bab	دەیک و باب	13
	Uncle and nephews - Nieces	xal u xwarza	خال و خوارزا	14
	Uncle and nephews - Nieces	mam u braza	مام و برازا	15
	Mother and daughter	deyk u kiç	دەیک و کچ	16
	Father and son	bab u kur	باب و کور	17
	Sister and brother	xwîşk u bira	خویشک و برا	18
	Small and big	biçîk u mezin	بچیک و مەزن	19
	Drum and clarinet	dehol u zirna	دەهول و زرنا	20
	Black and white	reş u spî	رەش و سپی	21
	Affection and love	êşq u viyan	عەشق و فیان	22
	Physique	bejin u bal	بەژن و بال	23
	Snow and rain	befir u baran	بەفر و باران	24
	Mouth and lip	dev u lêv	دەڤ و لێڤ	25
Faithfulness	Bread and salt	nan u xwê	نان و خوێ	26
	Short and tall	kurt u dirêj	کورت و درێژ	27
	Death and life	mirin u jîyan	مەرن و ژیان	28
Dice game, Behave randomly	Six and five	eş u bêşş	ئەش و بێش	29
Organized, neat	Way	rêk u pêk	رێک و پێک	30
	Unstick and askew	sîst u xar	سێست و خوار	31
	trees	dar u bar	دار و بار	32
	Poppies	helal u beybîn	هه‌لال و به‌بێن	33
	Left and right	ep u rastç	چەپ و راست	34
	Ground and sky	êrd u esman	ئەرد و ئەسمان	35
	Concern and depression	xem u kuyan	خەم و کوفان	36



	Foodstuff	qît u mît	قیت و میت	80
	Scraps	qaf u qut	قاف و قوت	81
	Trench and pit	kend u kur	کهند و کور	82
Group of Friends or people	Group	şil u mil	شیل و میل	83
	Tricks	senî u menî	سهنی و مهنی	84
Liar	Fart and lie	tir u vir	تیر و فیر	85
	Heart and liver	dil u mêlak	دل و میلاک	86
	Heart and soul	dil u can	دل و جان	87
One works free: no payment	Bread and abdomen	nan u zik	نان و زک	88
	Meadow and garden	mêrg u çîmen	میرگ و چیمه	89
	Friend and companion	heval u hogir	ههفال و هوگیر	90
	Wind	hir u ba	هیر و با	91
	Lentil and chickpea	nîsk u nok	نيسک و نوك	92
	Curves	çep u çîr	چهپ و چیر	93
	Soft	nerm u nol	نهرم و نول	94
Simple Things	Very ting things	hîr u mîr	هیر و میر	95
Sewing	String and needle	dezî u derzîk	دهزی و دهزیک	96
	Cracks	şeq u peq	شوق و پوق	97
	Fear and flutter	tirs u lerz	تیرس و لهرز	98
	Condition and terms	hel u merc	ههل و مهرج	99
	Turnip and beet	şêlim u şilindir	شیلیم و شیلندر	100
	Here and there	vêrê u wêrê	فیرێ و ویرێ	101
Kurdish Lady's gown	Frock	kiras u fistan	کیراس و فستان	102
Kurdish wear (Male's wear)	Hat and headband	kulav u dersuk	کولاف و دهرسوک	103
	Clothes	cil u berg	جیل و بهرگ	104
	Spring and river	kanî u rîbar	کانی و ریبار	105
	Cardamom and cinnamon	hêl u darçîn	هیل و دارچین	106
24 Hours	Night and day	şev u roj	شهف و روز	107
	Gold and silver	zêr u zîv	زیر و زیف	108
	Cattle	terş u tewal	تهرش و تهوال	109
	Eat and drink	bixu u vexu	ببخو و فبخو	110
	Liver and bowel	cerg u hinav	جهرگ و هناف	111
	Path and bridge	rêk u pir	رینک و پیر	112
	Bedrock	berd u binaşe	بهرد و بناشه	113
	Discussion	gift u go	گفت و گو	114
	Debate	dan u standin	دان و ستاندن	115
Compulsory	Want and does not want	bivêt u nevêt	بهفیت و نهفیت	116
	Sour and spiced	tirş u tîj	تیرش و تیژ	117
Foolish	Donkey and bullock	ker u gulik	کهر و گولیک	118
	Flower and narcissus	gol u nêrgiz	گول و نیرگیر	119
	Foundations	dam u dezgeh	دام و دهزگهه	120
Relatives	Person and work	kes u kar	کس و کار	121
	Charity and evil	xêr u şer	خیر و شهر	122
Insects	Flies	mêş u mur	میش و مور	123



Kurdish Epic	Person's name and Person's name	mem u zîn	مەم و زین	124
	Climbing and descending	jêhel u jurda	ژێهەل و ژووردا	125
Authentication	Straight and right	rast u dirust	راست و دروست	126
	Wet and dry	tef u hişk	تەف و هەشک	127
	Sadness and imagination	xem u xiyal	خەم و خیال	128
	Charity and joy	xêr u xoşî	خێر و خووشی	129
Kurdish Epic	Person's name and Person's name	mem u zîn	مەم و زین	130
Kurdish Epic	Person's name and Person's name	şîrîn u ferhad	شیرین و فرهاد	131
Kurdish Epic	Person's name and Person's name	xec u siyabend	خەج و سیابەند	132
Kurdish Epic	Person's name and Person's name	leyl u mecrîm	لەیل و مەجریم	133
	God and prophet	xodê u pêxember	خودێ و پێخەمبەر	134
Food meal	Rice and soup	birinc u avik	برنج و ئافک	135
Possessions	Circumstance and house	al u malî	حال و مال	136
	Little and much	kêm u zêde	کێم و زێدە	137
	Beard and mustache	rîh u simbêl	رێه و سمبیل	138
VIP	White Beard and handsome	rîh spî u maqîl	رێه سپی و ماقیل	139
	Someone	filan u bêvan	فیلان و بیفان	140
	Fast and prayer	rojî u nivêj	ڕۆژی و نەفێژ	141
	Origin and tribe	esl u îcax	ئەسل و ئیجاخ	142
Agriculture	General and old	gîst u kal	گەشت و کال	143
	Travel and tourism	geşt u gozar	گەشت و گوزار	144
	Flower and rose	gol u golzar	گول و گولزار	145
	Saying and lesson	gut u bend	گوت و بەند	146
	Fear and hunger	tîrs u bîrs	تێرس و بێرس	147
	Deficiencies	kêm u kasî	کێم و کاسی	148
	Mother in law and father in law	xesî u xezîr	خەسەسی و خەزیر	149
	Village's name and village's name	sîyar u spîndar	سییار و سپیندار	150
	Village's name and village's name	bank u eriz	بانک و ئەرز	151
	Village's name and village's name	nêrwe u rêkan	نێرۆه و رێکان	152
Abdomen and Sexual Satisfaction	Abdomen and lower part of abdomen	zik u bin zik	زک و بن زک	153
	Soul	rîh u can	رێح و جان	154
Simple things	Things	xîrxîrk u mîrmîrk	خێرخێرک و مێرمێرک	155
Simple things	Things	pirpîrk u mîrmîrk	پێرپێرک و مێرمێرک	156
Kurdish food	Bowels	êrik u rîvîk	عێرێک و رێفیک	157
Simple things	Small Parts	pîrt u mîrt	پێرت و مێرت	158
	Finger and foot	til u pê	تیل و پێ	159
	Valleys	dol u nihal	دول و نیهال	160
Noise	Slap and sound	şeq u dûq	شەق و دووق	161
Noise	Slap and solid	şeq u req	شەق و رەق	162
Beating	Slap and kick	şeq u pê	شەق و پێن	163

Environment	Around and near	dewr u ber	دهور و بهر	164
	Laughing	tîq u lîq	تقیق و لقیق	165
Simple things	Small Parts	qîç u mîç	قیچ و میچ	166
	Naked	rîs u çîmlaq	ریس و چیملاق	167
	Nut and almond	gîz u bahîv	گیز و باهیف	168
	Survival and annihilation	man u neman	مان و نهمان	169
Sound of Breaking such as Thunder	Sound	irîq u pirîqş	شریق و بریق	170
Accurate	Meter and exact	fit u fitlan	فیت و فیتلان	171
	Tone and poetry	awaz u hozan	آواز و هوزان	172
	Leg and calf	ling u pîq	لنگ و پیق	173
	Garlic and onion	sîr u pîvaz	سیر و پیفاز	174
	Flexible and resilient	nerm u helîm	نهرم و ههلم	175
	Respect and greeting	rêz u silav	رێز و سلاڤ	176
	Buying and selling	kirîn u firotin	کرین و فروتن	177
	Looker and listener	bîner u gohdar	بینهر و گوهدار	178
	Rider and walker	sîyar u peya	سیار و پەیا	179
	Grinding and plough	distar u hevcar	دستار و ههڤچار	180
	Sieve	moxil u bêjîng	موخل و بیژینگ	181
	Tobacco and pipe	tîtin u qelîn	تیتین و قهلین	182
	Lance and bow	tîr u kivan	تیر و کفان	183
Condition	Hand and wood	dest u dar	دهست و دار	184
	Scattered	tefa u befa	تەڤا و بەڤا	185
	Plain and mountain	deşt u çiya	دهشت و چیا	186
	Tillage Steering and plough	nîrik u hevcar	نیریک و ههڤچار	187
(Kurdish game), Tombstone	Stones	kêl u bêl	کێل و بێل	188
	Spear and skewer	tîr u bist	تیر و بست	189
	Wind and storm	ba u barov	با و باروڤ	190
	Obsequies and happiness	şîn u şadî	شین و شادی	191
	Hatred	kerb u kîn	کهرب و کین	192
	Father and grandfather	bab u kal	باب و کال	193
	Plait	kezî u bisk	کەزی و بێسک	194
Running of Time	Time and rotation	dem u dewran	دهم و دهوران	195
	Ornamenting and scarf	xeml u xêl	خهمل و خهیل	196
	Meadow and garden	Mêrg u bağ	مێرگ و باغ	197
	Iris and spike of a grain	susin u sunbil	سوسن و سونبیل	198
	Poverty	jar u jwîrî	ژار و ژویری	199
North and South	Up and down	jêr u jor	جێر و ژور	200
Sense of harshness	Bear and monster	hirç u hov	ههړج و هوڤ	201
	Wind and rain	ba u baran	با و باران	202
	Thicket and thorn	dehl u dirî	دههل و دری	203
	Flower and grass	gol u giya	گول و گییا	204
	Charity	Xêr u bêr	خهیر و بێر	205
	Pipe	bask u qelîn	باسک و قهلین	206
	Pain and cramp	êş u jan	ئهیش و ژان	207



Construction Items	Iron and cement	asin u çîmento	آاسن و چیمهنتو	253
Sense of Deceptiveness	Cheating	hîl u hewale	آحیل و حهواله	254
	Surface and implied	serve u binve	آسهرقه و بنقه	255
	Washing	şîştin u veşîştin	آشیشتن و فهشیشتن	256
	Foods and drinks	xarin u vexarin	آخارن و فهخارن	257
	Color and cheek	reng u rî	آرهنگ و ری	258
	String and lute	têl u tembîr	آتیل و تهمبر	259
	Neck and back	sto u navmil	آستو و نافمل	260
	Rooster and hen	dîkil u mirîşk	آدیکل و مریشک	261
Erbil City	Castle and beacon	qela u minare	آقهلا و مناره	262
	Snake and scorpion	mar u dîpişk	آمار و دپیشک	263

### دریژاھیا پیتا بزویڻ وهك پێبهندیهكا رێك و پێكری د جووت په یقین زمانی كوردی دا (دیالكتا بادینی): شروقهكرنهكا چهندی

پوخته

وهك هه رجار پتربیا فهكولینین گریډای ب رێك و پێكرا جووت په یقین زمانی (كوپر و روس، 1975 ، رایت و بین دی ، 2005 ، بینور و لیفی، 2006، لومان 2011، مولین 2012، سعید 2013) رێك دكهفن لسه ر وئ چهندی كو دریژاھیا پیتا بزویڻ رولهكئ سهرهكی دگیریت د رێك و پێكرا یا په یقان دا د گوتتین جووت په یقان دا، لهورا دریژاھیا پیتا بزویڻ وهك ئێك ژ پێبهندیڻ دهنگی بین مهزن د رێك و پێكرا جووت په یقین د زمانی دا دهیته هژمارتن. ئەف فهكولینه تهكهزی دكهت لسه ر فهكولینا رولئ پیتا بزویڻ وهك پێبهندیهكا رێك و پێكری د گوتتین جووت په یقین زمانی كوردی دا (دیالكتا بادینی). ئەف فهكولینه گریمانا وئ چهندی ددهت ب هه بوونا چهزا دانانا په یقا پێك دهیت ژ پیتا بزویڻ یا كورتر ل جهئ ئێكئ و دانانا په یقا پێك دهیت ژ پیتا بزویڻ یا دریژ تر ل جهئ دووئ د جووت په یقین زمانی كوردی دا (دیالكتا بادینی). پشت راستبوون ژ هه بوونا به رهمدار یا قی شیوازی یا جووت په یقین زمانی كوردی دا (دیالكتا بادینی)، ئەف فهكولینه رابوو په بكارینانا پهیرهوئ شروقهكرنا چهندی وهك نویتربین پهیرهوئ باوه پێكری د ئەدهبیاتین په یوهندیار دا. پشت بهستن لسه ر شروقهكرنا چهندی یا ژماره ما زور ژ جووت په یقین زمانی كوردی (263 جووت)، فهكولینئ دیاركریه ب هه بوونا چهزهكا بهرچاف یا شیوازی رێك و پێكری نهوئ گریمانكری د ئەفئ فهكولینی دا. هه رهوسا فهكولینی دیاركریه كو ئەف چهزا رێك و پێكری زور یا گرنه ژ لایئ سه ر ژمیراریئ فه. نهجامین فهكولینئ خویا دكهت كو دریژاھیا پیتا بزویڻ وهك ئێك ژ پێبهندیڻ دهنگی بین مهزن د رێك و پێكرا جووت په یقین زمانی كوردی دا (دیالكتا بادینی) دا دهیته هژمارتن، نهوژی ب چهزا دانانا د پتربیا دهمان دا په یقین پێك دهیت ژ پیتا بزویڻ یا كورتر ل جهئ ئێكئ. ل دووماهیئ، یا هه ژیه بهیته خویاكرن كو ئەف نهجامه یا رێكهفتیه د گهل فهكولینین وهكههف بین گوتتین جووت په یقان د زمانین دیتر دا .

طول حرف العلة كتفید ترتیبی فی ثنائیات اللغة الكردية (اللهجة البادية): تحلیل كمي

الخلاصة

تتفق عادة غالبية الدراسات المتعلقة بترتيب ثنائيات اللغة (كوبر وروس، 1975؛ رايت وآخرون 2005؛ بينور و ليفي، 2006؛ لومان 2011؛ مولين، 2012؛ سعيد، 2013) على أن طول حرف العلة يلعب دوراً رئيسياً في الترتيب الخطي للكلمات في التعابير الثنائية، وعليه فإن طول حرف العلة يعتبر أحد القيود الصوتية الكبرى في ترتيب ثنائيات اللغة. يركز البحث الحالي على دراسة دور طول حرف العلة كتنقييد ترتيبي في التعابير الثنائية للغة الكردية (اللهجة البادية). تفترض هذه الدراسة وجود تفضيل لثنائيات اللغة الكردية (اللهجة البادية) بوضع الكلمة التي تحتوي على حرف العلة الأقصر في الموضع الأول و وضع الكلمة التي تحتوي على حرف العلة الأطول في الموضع الثاني. للتأكد من الوجود المنتج لهذا النمط من ثنائيات اللغة الكردية (اللهجة البادية)، تطبق هذه الدراسة منهج التحليل الكمي كأحدث منهجية معتمدة في الأدبيات ذات الصلة. بعد إجراء التحليل الكمي لعدد كبير من ثنائيات اللغة الكردية (263 زوج)، وجدت الدراسة بأن هناك تفضيل ملحوظ للنمط الترتيبي المفترض في هذه الدراسة. وقد تبين أيضاً أن هذا التفضيل الترتيبي يعد مهماً للغاية من الناحية الإحصائية، عليه فقد خلصت الدراسة إلى أن هذه النتيجة تثبت أن طول حرف العلة يمكن اعتباره أحد القيود الصوتية في ترتيب ثنائيات اللغة الكردية (اللهجة البادية) حيث يتم إعطاء تفضيل في كثير من الأحيان بوضع الكلمات التي تحتوي على حرف العلة الأقصر في الموضع الأول. وأخيراً، لا بد من الإشارة إلى أن هذه النتيجة متوافقة مع دراسات مماثلة عن التعابير الثنائية في لغات أخرى.