LEXICAL STRESS PLACEMENT IN MONOMORPHEMIC WORDS IN PAHARI

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Summary: The study was undertaken with the objective to compile a detailed description of the lexical stress pattern in Pahari. The study found out the following: 1) from a typological point of view, Pahari is a quantity-sensitive, rhythmic, and unbounded language; 2) superheavy syllables get the main stress irrespective of their place of occurrence in the word; 3) the penult gets the main stress when all syllables have equal weight (heavy-heavy or super-heavy-superheavy); 4) when a syllable does not fit into the stress pattern of the language, extrametricality is used to make it fit.

1. Introduction

The accent or stress in a word can be characterized by several tendencies. Typologically, lexical stress can be differentiated into free vs. fixed and rhythmic vs. morphological, whereby rhythmic languages can be subdivided into bounded vs. unbounded. In the following paragraph we will shortly discuss several studies for stress patterns in certain Indo-Aryan languages. However, there are no such studies for Pahari.

Stress is generally predictable because it usually depends on factors like syllable weight and, in some languages such as Hindi, Gujarati, and Punjabi, number of syllables in a word [Dhillon 2010, Masica 1991]. Jain [1926] states that a number of Indo-Aryan languages – Hindi, Punjabi, Gujarati, Rajasthani, and possibly Bengali and Singhalese – are descendants of Prakrit, which had developed penultimate stress. Jain's account shows that a change in the position of stress occurred in these Indo-Aryan languages, whereby all words except those containing long vowels in non-final syllables received stress on the initial syllable. Other words received stress on the syllable containing a long vowel that was nearest to the final syllable. According to Jain [1926], these changes were then followed by a process of compensatory lengthening of short vowels. It is very much possible that Prakrit with its fixed stress position led to the development of a fixed stress in those Indo-Aryan languages which exhibit the very same tendency. Dhillon [2010] showed that other Indo-Aryan languages of the region such as Gojri, Dogri, and Kangri rely entirely on syllable weight in the determination of the placement of stress. In the case of Hindi, for instance, stress assignment is predictable and distributed according to a pattern based on the weight and concatenation of the syllables within a word, and, as a result, stress is not contrastive [Hayes 1995, Kelkar 1968, Pandey 1989]. However, Arun [1961] and Bhatia [1993] claim that stress is indeed contrastive in some instances.

The aim of the study is to examine the lexical stress pattern in Pahari, an undocumented and unwritten Indo-Aryan language spoken in the Pakistan administered part of Kashmir. No work has been conducted so far on the stress

pattern of this language. First of all, the study presents data to establish the typology of lexical stress in this language. The work bases on the typological framework by Hayes [1995]. After establishing the lexical typology, the study looks into the stress pattern in monomorphemic words in Pahari.

2. Typology of Lexical Stress

Hayes [1995] outlines a typology of stress assignment in languages. He gives the following three distinct axes upon which languages may differ in terms of rules for stress placement.

2.1. Free vs. Fixed

The terms «fixed» and «free» refer to the phonemic status of stress in a language [Hayes 1995]. Fixed stress is predictable in its location and may be derived by rule, while free stress is unpredictable and must be listed lexically. In other words, it has to do with whether the stress pattern in a language is predictable due to location or phonological features of a word (fixed) or not (free), in which case the stress is phonemic and must be specified in the lexicon. According to Hayes [1995], the fixed vs. free stress opposition is blurry. He cites from Spanish which shows phonemic stress (its location is limited to the last three syllables, though). Hyman [1977] surveyed 306 languages with a fixed stress pattern and divided them into the five groups discussed below:

(1)
  a. Initial syllable stress, 114 languages (37%)
  b. Final syllable stress, 97 languages (32%)
  c. Penult syllable stress, 77 languages (25%)
  d. Second syllable stress, 12 languages (4%)
  e. Antepenult syllable stress, 6 languages (2%)

Some examples of fixed stress languages given by Hussain [2010], taken from Hyman [1977], are listed below:

Table 1: Fixed stress languages

language	lexical stress
Czech	first syllable of the word
French	last syllable of the word
Polish	penultimate syllable of the word
Macedonian	antepenultimate syllable of the word
Latin	penultimate syllable if it has a long vowel; otherwise antepenultimate syllable
Old Lesbian	penultimate syllable if the last syllable is long; antepenultimate if the last syllable is short
Classical Arabic	long syllable closest to the beginning of the word; first syllable if all syllables are short

A fixed stress pattern mainly depends on two factors. The first four languages in Table 1 (Czech, French, Polish, and Macedonian) set the accent in a fixed distance from a word edge, whereas the last three (Latin, Old Lesbian, Classical Arabic) rely on syllable weight for the same purpose.

It is not possible to devise a simple algorithm for the assignment of stress in languages with a free stress pattern, because there are no restrictions for stress placement. Laver [1994] reports Dutch, English, Greek, Russian, and Assamese as free stress languages. In these languages, stress placement can change the meaning or grammatical category of words. In English, for example, several words have the same segmental sequence, but are differentiated as nouns or verbs on the basis of stress. On the contrary, in Greek, stress placement can change the meaning of a word. Laver [1994] also gives an example of Terena, spoken in the Southwest of Brazil, which uses stress placement to distinguish subject from object. Thus, in free stress languages, stress can be associated with different functions.

Given this typology, Pahari exhibits a fixed rather than free stress language behavior. This is because the stress in a given word is predictable and primarily bases on phonological factors (such as syllable weight; see part 2.2.): The heaviest syllable takes the stress in any word, for example [maː.'seːr] 'cousin' and ['maːs.laː] 'flexible'. In Pahari, stress is neither phonemic/ lexically contrastive, nor does it change the meaning or grammatical function of the word.

Table 2: Pahari as a fixed stress language

word	gloss	templates	factor
maː.'seːr	cousin	CVV. **'CVVC**	syllable weight
'ḍeːɣ.tʃiː	pot	**'CVVC**.CVV	syllable weight
'aːɣ. vaː. ɽiː	yawn	**'CVVC**.CVV.CVV	syllable weight

2.2. Rhythmic vs. Morphological

Hayes [1995] states that languages may mark stress according to phonological factors such as syllable weight and distance from word boundaries. He classifies these languages as rhythmic stress languages. These are further classified into bounded and unbounded languages (see 2.2.1.).

In morphological stress languages, by contrast, stress works to elucidate the morphological structure of the word [Hayes 1995]. When different morphemes combine to form a word, the root may bear the primary stress and an affix may bear the secondary stress. Hayes [1995] explains that the English word *unboundedness* has an antepenult stress because the accented stem syllable is in the antepenult position of this word. In English, suffixes are stress shifting and stress maintaining as well.

In terms of the rhythmic vs. morphological axis, Pahari exhibits rhythmic behavior in the sense that stress correlates with syllable weight, not with morphological complexities, i.e. stress is marked independently from stem and affixes. It allows trochaic feet as well when syllable weight ties in stem.

Table 3: Pahari as a rhythmic language

word	gloss	templates	stressed syllable
'lʊk.riː.jã̄ː	wood	**'CVC**.CVV.CVV	stem
a:'ləm.baː	flame	VV.**'CVC**.CVV.	stem
'kʰət.tã̄ː	beds	**'CVC**.CVV	stem

However, Hayes [1995] states that the notions of morphological and rhythmic stress system are usually not manifested in pure form; most stress systems are a mix of the two: for example, English has a rhythmic stress system in the stem, but mostly morphological stress for productive affixes.

2.2.1. Bounded vs. Unbounded

The (rhythmic) stress systems of the world's languages are roughly divided into two categories: bounded (or alternating) and unbounded (or non-alternating). This distinction only applies to rhythmic stress systems and defines whether stress falls within a certain distance from a boundary or another stressed syllable, or whether there are no restrictions on where the stress may fall.

In bounded languages, stress falls within a fixed distance from a word edge or from another stress. Carlson [1978] classifies Finnish as a bounded stress language. In unbounded languages, distance from a word boundary or another stressed syllable is not necessary. Lehiste [1970] sets classical Arabic as an example of unbounded stress with stress on the first heavy syllable in a word, i.e. the determination of stress position bases on syllable weight. In some unbounded stress systems, the main stress consistently falls on a syllable at or near a word boundary (left or right), regardless of syllable weight. In other unbounded stress systems, the main stress falls on the leftmost or rightmost heavy syllable, and in the absence of heavy syllables, on the leftmost or rightmost syllable. Each of the four combinations of leftmost and rightmost can be found in attested languages [Hayes 1995]. The two cases, in which the sides are the same, are called «default to same side», and the two cases, in which the sides are different, are called «default to opposite side».

Lists of languages corresponding to each of these rough typological characterizations are given in (2). These lists base on those of Hayes [1995] and are completed by some additional languages from Walker [1997].

(2)

Unbounded stress systems: rough typological instantiations
a. Consistently edge-most
   Leftmost: Tinrin, Yeletnye
   Rightmost: Uzbek, Yavapai, Yawelmani
b. Default to same side (DTS)
   Leftmost heavy, otherwise leftmost: Amele, Au, Khalkha Mongolian, Lhasa Tibetan, Lushootseed, Mordwin, Murik, Yana
   Rightmost heavy, otherwise rightmost: Aguacatec, Golin, Kelkar's Hindi, Klamath, Sindhi, Western Cheremis
c. Default to opposite side (DTO)
   Leftmost heavy, otherwise rightmost: Komi Yaz'va, Kwakw'ala
   Rightmost heavy, otherwise leftmost: Chuvash, Classical Arabic, Eastern Cheremis, Huasteco, Kuuku-Yaˆu, Selkup

In terms of boundedness, Pahari exhibits an unbounded stress system without any positional limits (within a stem). Stress can fall at varying distances from a boundary or another stress, provided that the appropriate conditions are met. In tri-syllabic words, the heaviest syllable is stressed, be it in the final, pe-

nult, or antepenult position, as shown in Table 4. If the final syllable is not heavy, the stress falls on the penult. This means that the language has characteristics of an unbounded «default to the same side» (DTS) system. The placement of stress on the superheavy syllable in the word is also shown in Table 4. If all syllables have the same weight, stress is assigned to the penult, as shown in Table 5.

Table 4: Pahari as an unbounded language

word	gloss	syllable template	stressed syllable
'dʒaːɣ. raː.t̪aː	sleeplessness	**'CVVC**.CVV.CVV	antepenult
sãː. 't̪aːr.jãː	butterflies	CVV. **'CVVC**.CVV	penult
zæb.bʊr.'d̪æs t̪	excellent	CVC.CVC. **'CVCC**	final

Table 5: Unbounded 'default to the same side' (DTS) system

word	gloss	syllable template	stressed syllable
op. 'la.t̪aː.	superficial	VC. **'CVV**.CV\<V\>	penult
a:'ləm.baː	flame	VV. **'CVC**.CV\<V\>.	penult
baː.'sɪn. d̪ær	living room	CVV. **'CVC**.CV\<C\>.	penult

3. Monomorphemic Words

Before discussing stress in monomorphemic words in Pahari, it is important to mention the minimal and maximal monomorphemic words and syllable weight in Pahari. Pahari allows light syllables, heavy syllables and superheavy syllables. Light syllables cannot form a monosyllabic word independently. Their use is limited to disyllabic or polysyllabic words. This shows that a word must contain at least two moras that can be either (VV), as in [baː] 'put', or (VC), as in [sət] 'throw'. Maximally, a syllable can have three moras (VVC, VCC), as in [moːr] 'peacock' and [kənd] 'back', respectively. The number of syllables in monomorphemic words in Pahari ranges from one to four, as shown in Table 6.

Table 6: Number of syllables in monomorphemic words in Pahari

monosyllabic	disyllabic	tri-syllabic	tetra-syllabic
mã 'mother'	kɪs.mʊt̪t̪ 'fate'	tʃɪn.pʰoː.t̪ʰʊl 'pine hair'	fæː.raː.ʃiː.ʃiː 'pear'
loː 'light'	lək.ɽiː 'wood'	sɪl.si.la. 'series'	bəg.guː.goː.ʃaː 'pear'
hət̪ʰ 'hand'	tʃaːp.luːs 'flatterer'	op.la. t̪aː 'superficial'	tʃɪɽ.ɽiːkəg.goː 'a wild vegetable'

Table 7 shows the syllable templates of Pahari.

Table 7: Syllable templates of Pahari

syllable type	lexeme	gloss
VV	aː	come
VC	ət̪ʰ	eight
VVC	oːs	dew
CV	fə.kiːr	beggar
CVV	t̪aɪ	aunt
CVC	t̪ɪl	mole

CVVC	ra:ʈ	night
CVCC	kənd	back
CCVV	kloɪ	a slab of stone
CCVC	pʰɽək	sudden
CCVVC	ʈra:ɽ	plain stone

Table 7 shows that open syllables with a short vowel are monomoraic. Open syllables with diphthongs or long vowels are bimoraic. Closed syllables with a short vowel and a coda consonant are also bimoraic. Closed syllables with a long vowel and a coda consonant, and closed syllables with a short vowel and two coda consonants are trimoraic. In short, Pahari has light, heavy, and superheavy syllables. All possible combinations of syllable weights in Pahari monomorphemic words (1-4 syllables) are discussed in the following subsections. The data are presented in the form of tables based on complexity of words (monosyllabic, disyllabic, tri-syllabic, and tetra-syllabic words).

3.1. Monosyllabic Words
Table 8 shows that all monosyllabic content words are stressed in Pahari.

Table 8: Monosyllabic words in Pahari

'pra:ʈ	a big plate	'CCVVC
'tʃa:	tea	'CVV
'loɪ	woolen quilt	'VCC
'kru:	name of a plant	'VCCV
'həʈʰ	hand	'CVC
'əm	mango	'VC
'kənd	back	'CVCC
'ra:ʈ	night	'CVVC

The monosyllabic words have different syllable templates: CCVVC, CVV, CCVV, CVC, CVVC, CVCC, and VC. This shows that monosyllabic words allow both open and closed syllables. In terms of weight, both heavy (CVV, CVC) and superheavy syllables (CCVVC, CVVC, CVCC) are allowed, but it does not allow a word to end in a light, open syllable (CV).

3.2. Disyllabic Words
Disyllabic monomorphemic words form the following five combinations in Pahari:

- Heavy (CVV, CVC) and superheavy (CVVC),
- Superheavy (CVVC, CVCC) and heavy (CVV),
- Heavy(CVV, CVC) and heavy (CVV, CVC),
- Superheavy(CVVC) and superheavy (CVVC),
- Light (CV) and superheavy (CVVC).

All five combinations are discussed with examples in Table 9.

Table 9: Combinations of syllables in disyllabic words in Pahari

(a) Heavy and superheavy syllables		
xæ:.'ra:ʈ	charity	CVV. **'CVVC**
əkʰ.'kʰo:ɽ	walnut	VC. **'CVVC**
kʰe:.'la:ɽ	toy	CVV. **'CVVC**
(b) Superheavy and heavy syllables		
'ma:s.la:	flexible	**'CVVC**. CVV
'ba:r.la:	pig	**'CVVC**.CVV
'ma:s.ɽa:	uncle	**'CVVC**.CVV
(c) Heavy and heavy syllables		
ɖra:.ti:	sickle	**'CCVV.** CVV
ɖæs.ʈa:	handle	**'CVC.** CVV
bu:.ta:	plant	**'CVV.**CVV
(d) Superheavy and superheavy syllables		
'a:s.ma:n	sky	**'VVC**.CVVC
'sa:r.va:ɽ	a kind of lizard	**'CVVC**.CVVC
'so:ɽ.ja:l	congested	**'CVVC**.CVVC
(e) Light and superheavy syllables		
be.'ma:r	sick	CV. **'CVVC**
mə.'ri:z	patient	CV. **'CVVC**
lə.'ki:r	line	CV. **'CVVC**

Table 9 shows that a minimal syllable is monomoraic in disyllabic words and maximal is tri-syllabic. Table 9(a, b) shows that one of the syllables in each word is superheavy and stressed. This means that the heaviest syllable is stressed in disyllabic words. But we cannot generalize this rule to all disyllabic words, as Table9(c, d) shows that both syllables are heavy or superheavy, respectively, which makes it difficult to decide which syllable to stress. Native speakers confirmed that the first syllables in both types are stressed.

Hayes [1981] applies the concept of extrametricality, because an accent on the first syllable can only be achieved if we exclude the final mora of the syllable (see also 4(d)). At the periphery of a word, i.e. at the left or right edge, a phonological constituent (segment, syllable, consonant, vowel, rhyme, mora, etc.) may be declared extrametrical. In other words, it is made invisible to the metrical rules. The Pahari data above show that the last mora of the word (or the final mora of the final syllable) is made extrametrical if there is a tie in syllable weight. After having applied extrametricality, the final syllable loses one mora, hence the penult becomes heavier than the final syllable and therefore takes the stress. Now we can generalize for disyllabic words that the rightmost heavy syllable is accented.

3.3. Tri-Syllabic Words
Tri-syllabic monomorphemic words in Pahari have four different combinations on the basis of syllable weight, as shown below:
- Superheavy, heavy, and heavy syllables,
- Heavy, superheavy, and heavy syllables,

- Heavy, heavy, and superheavy syllables,
- Heavy, heavy, and heavy syllables.

Table 10: Combinations of syllables in tri-syllabic words in Pahari

(a) superheavy, heavy, and heavy		
'dʒaːɣ. raː. ʈaː	sleeplessness	**'CVVC**.CVV.CVV
'ɖaːr. vã̰ːni	doorstep	**'CVVC**.CVV.CVV
'kaːk. ɽoː. la	wild plant	**'CVVC**.CVV.CVV
(b) heavy, superheavy, and heavy syllables		
sã̰ː.' ʈaːr.jã	butterflies	CVV. **'CVVC**.CVV
həm.'baːr.nã	sounds made by cow/ bull	CVC. **'CVVC.**CVV
boː'kaːr.nã	shouting	CVV. **'CVVC.**CVV
(c) heavy, heavy, and superheavy syllables		
zæb.bʊr.'ɖæs ʈ	excellent	CVC.CVC. **'CVCC**
zɪm.mẽ.'vaːr	responsible	CVC.CVV. **'CVVC**
zɪm.miː.'ɖaːr	farmer	CVC.CVV. **'CVVC**
(d) heavy, heavy, and heavy syllables		
op.'laː. ʈaː.	superficial	VC. **'CVV**.CVV
aː.'ləm.baː	flame	VV. **'CVC**.CVV.
baː. 'sɪn. ɖær	living room	CVV. **'CVC**.CVC
gã̰ː.'vã̰ː.di	neighbor	CVV. **'CVV**.CVV
Paː.'saː.ra	terrace	CVV. **'CVV**.CVV

Table 10 shows that in tri-syllabic words, superheavy syllables can be final, penult or antepenult. Superheavy syllables (trimoraic) combine with two heavy syllables (bimoraic) in three different combinations here, in which the former is always accented, irrespective of its position (also see Tables 12 and 13). This means that the generalization made above (that the heaviest syllable is stressed in disyllabic words) is also true for tri-syllabic words. In the fourth type, only bimoraic syllables combine to form tri-syllabic words. In this case, though, we cannot apply this generalization: If the final syllable was accented, it would be a violation of Hayes' [1995] claim that the final syllable is only stressed when it is superheavy. Here again, if we exclude the last mora of the final syllable, the stress falls on the penult.

3.4. Tetra-Syllabic Words

In tetra-syllabic monomorphemic words, only one combination of all the bimoraic syllables is possible in Pahari, as shown in Table 11:

Table 11: Heavy + heavy + heavy + heavy tetra-syllabic words in Pahari

fæː.ɹaː.'ʃiː.ʃi	pear	CVV.CVV. **'CVV**.CVV.
bəg.guː.'goː.ʃa	pear	CVC.CVV. **'CVV**.CVV.
tʃɪɽ.ɹi'kəg.goː]	a kind of wild vegetable	CVC.CVV. **'CVC**.CVV.

Table 11 shows that only bimoraic syllables combine to form tetra-syllabic words. There is no superheavy syllable, which is why the last mora of the final

syllable is made extrametrical so that the accent falls on the penult. Otherwise, it would fall on the final syllable, which is not accepted by native speakers.

By looking at the list of monomorphemic words, the assignment of stress in Pahari can be summarized in the following rules:

- The superheavy syllable, if present in the word, is stressed.
- The final syllable is only stressed if it is superheavy.
- The final mora of the word becomes extrametrical when there is a tie in syllable weight.
- This implies that the penult is stressed if all syllables in disyllabic, tri-syllabic, and tetra-syllabic words have the same weight.

Since the conditions listed above have a fairly complex interaction, they will be presented in order of increasing complexity.

4. Stress Pattern Generalizations

(a). The superheavy syllable, if present in the word, is stressed.

If a word contains a single superheavy syllable, it will always be stressed. In fact, the clearest examples of stress in Pahari are when a single syllable is heavier than all of other syllables in the word. The greater the difference in weight, the more apparent becomes the stress, as shown in Table12.

Table 12: The heaviest syllable is stressed in Pahari

		gloss	templates
a.	maː.ˈseːr	cousin	CVV. **'CVVV**
b.	ˈɖeːɣ.tʃiː	pot	**'CVVC**.CVV
c.	ˈaːɣ. vaː.ɽiː	yawn	**'CVVC**.CVV.CVV
d.	sãː.ˈʈaːr.jãː	butterflies	CVV. **'CVVC**.CVV
e.	zæb.bʊr.ˈɖæs ʈ	excellent	CVC.CVC. **'CVCC**

Table 12 shows that the heaviest syllable is stressed irrespective of the number of syllables in a monomorphemic word. In disyllabic words, the super-heavy syllable can occur in final and penult syllables, as shown in (a) and (b) respectively, and both are accented. Examples (c), (d), and (e) show that in tri-syllabic words, superheavy syllables are found in antepenult, penult, and final syllables. If one is a trimoraic syllable and the other is bimoraic, the heaviest syllable bears the stress irrespective of its position in the word. The final sylla-ble is only stressed when it is superheavy and there is no other superheavy syl-lable in the word.

(b). In disyllabic words, if both syllables are heavy, then stress the penulti-mate.

Table 13: If both syllables are heavy, penult is stressed in Pahari

	gloss	templates
ˈɖraː.tiː	sickle	**'CCVV**. CV\<V\>
ˈɖæs. ʈ aː	handle	**'CVC**. CV\<V\>
ˈɖã .vʊn	pig	**'CVV**.CV\<V\>
ˈnaːsãː	nostrils	**'CVV**.CV\<V\>

Table 13 shows the stress pattern of disyllabic words: If both syllables are heavy, the penult is stressed.

(c). In multi-syllabic words, if all the syllables are heavy, then stress the rightmost heavy syllable.

Table 14: If all syllables are heavy, the penult is stressed in Pahari

	gloss	templates
op.'la:ṭa:.	superficial	VC.**'CVV**.CV\<V>
a:'ləm.ba:	flame	VV.**'CVC**.CV\<V>
ba:.'sın. ḍær	living room	CVV.**'CVC**.CV\<C>
gã:.'vã:.di:	neighbor	CVV.**'CVV**.CV\<V>
pa:.'sa:.ra:	terrace	CVV.**'CVV**.CV\<V>
bəg.gu:.'go:.ʃa:	pear	CVC.CVV. **'CVV**.CVV.

These examples show that when a word has several heavy syllables, the penultimate syllable in the stem of the word is stressed.

(d). Extrametricality

As mentioned above, the last mora of a word is excluded calculating relative syllable weights. However, due to the application of other rules for the stress pattern in Pahari, most of the preceding examples would have had the same results, also without extrametricality. For example, [zæb.bʊr.**'**ḍæsṭ] 'excellent' has the stress on the final syllable because it is superheavy, which, according to the earlier discussion, is a regularized automatism. However, the following words in Table 15 show that extrametricality is needed; otherwise, the preceding rules would often result in a different outcome.

Table 15: Extrametricality required in Pahari

a.	'ḍra:.ti:	sickle	**'CCVV**. CV\<V>
b.	'so:ɽ.ja:l	congested	**'CVVC**.CVV\<C>
c.	a:. 'ləm.ba:	flame	VV. **'CVC**.CV\<V>.
d.	fæ:. ra:.'ʃi:.ʃi:	pear	CVV.CVV. **'CVV**.CV\<V>.

In each of the examples given in Table 15, if the last mora was not extrametrical, the final syllable would be the rightmost heavy syllable of the stem, and therefore ought to have the primary word stress. For example, the two syllables in ['ḍra:.ti:] 'sickle' would both be heavy, if the final mora was not excluded. Subsequently, the rightmost heavy syllable should be stressed. So, in order to receive the correct result, the final mora must be excluded, so that the penult alone is heavy and stressed. The same is true of ['so:ɽ.ja:l] 'congested': If the final mora was not excluded, both the final and penult syllable would be superheavy and, therefore, the rightmost heaviest would be stressed. But by excluding the final mora, the final syllable becomes heavy, whilst the penult remains superheavy and gets stressed.

Now we come up with a simpler pattern, if we count the last moraic segment in a word as extrametrical (only in case of syllable weight). If the final mora (vowel/ consonant) is extrametrical, the whole stress algorithm can be

simplified to the following statement: The rightmost heaviest syllable is stressed (it can be bimoraic or trimoraic in a word).

The following examples illustrate that, on the other hand, extrametricality is only required when there exists a tie in syllable weight.

Table 16: Stress the heaviest syllable in Pahari

a.	maː.'seː r	cousin	**'CVV**.CVVC
b.	'ɖeːɣ.tʃiː	pot	**'CVVC**.CV\<**V**\>
c.	'saːr. vaː ɽ	lizard	**'CVVC.** CVV\<**C**\>
d.	'ɖãː .vʊn	bottom	**'CVV.** CV\<**V**\>

Example (a) shows that the last mora is not extrametrical, as extrametricality is only required when there exists a tie in terms of syllable weight between two or more bimoraic syllables, or between two trimoraic syllables, as shown in Table 16. Like example (a), (b) does not require extrametricality, as the superheavy syllable takes the stress. On the other hand, examples (c) and (d) require extrametricality because in both examples there exists a syllable weight tie. Example (c) shows that if the last mora of the final syllable becomes extrametrical, the last syllable is heavy and the penult is superheavy, so that the latter automatically takes the accent. Example (d) also requires the last mora to become extrametrical, and as a result, stress falls on the penult.

Conclusion

This study examined the stress pattern in Pahari, an undocumented and unwritten Indo-Aryan language, which is spoken in the Pakistan administered part of Kashmir. First of all, Pahari was typologically classified as a rhythmic and unbounded language with a fixed, predictable stress pattern. The lexical accent in Pahari depends on syllable weight and shows a «default to the same side» (DTS) tendency. Secondly, stress patterns for mono-, di-, tri-, and tetra-syllabic words in Pahari were surveyed, so that lastly the following generalizing conclusions could be stated:

- If a syllable is superheavy, it is always stressed.
- If the final syllable is not superheavy, the heavy syllable closest to the final syllable (penult) is stressed.
- This implies that in disyllabic words, if the final syllable is not superheavy, the penult is stressed.
- Tri-syllabic words are left with two heavy syllables if their final syllable is not heavy, and the penult is preferred for stress.
- If all syllables are heavy in a multi-syllabic word, the penult is accented.
- The final mora of the last syllable, or in other words, the last mora of the word is extrametrical and does not contribute to the syllable weight, when there is a tie between syllable weights.

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