

Mongghul Phonology Sketch

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0 Abstract

The phonological sketch of Mongghul (mjg) presented here is based on the dialect spoken in Dazhuang village in Donggou district, located in Huzhu Tuzu Autonomous County, Qinghai Province (青海省海东地区互助土族自治县东沟乡大庄村). Mongghul spoken in DongGou is generally claimed to be the standard dialect of the language. In China, Mongghul is known as the “Tu Language” (土族语). Earlier, Mongghul was seen as one of the two main dialects of the Tu language, spoken by the biggest group of the Tu nationality (土族). Today, they are considered to be two different languages, Mongghul and Mangghuer (spoken in Minhe County in Qinghai Province). The data here comes from interviewing several people in Dazhuang village, but my main informant has been a 62-year-old retired teacher. He has lived his whole life in Dazhuang village.

1 Introduction

The orthography used in this paper differs in some aspects from the semi-official orthography, created in 1980s by a Tu linguist. The orthography was based on Pinyin Romanization of Mandarin Chinese, and the few changes that I have made bring the orthography even closer to Pinyin.

2 Phonemic inventory

2.1 Consonants

The Mongghul consonant phoneme inventory is given in table 1. Both phonetic and orthographic symbols are given.

		labial	alveolar	palatal	retroflex	velar	uvular
-Vc	stop +asp	p ^h (<i>p</i>)	t ^h (<i>t</i>)			k ^h (<i>k</i>)	
	stop -asp	p (<i>b</i>)	t (<i>d</i>)			k (<i>g</i>)	q (<i>gh</i>)
	affr. +asp		ts ^h (<i>c</i>)	tɕ ^h (<i>q</i>)	tʂ ^h (<i>ch</i>)		
	affr. -asp		ts (<i>z</i>)	tɕ (<i>j</i>)	tʂ (<i>zh</i>)		
	fricative	f (<i>f</i>)	s (<i>s</i>)	ɕ (<i>x</i>)	ʂ (<i>sh</i>) ʐ (<i>r</i>)	x (<i>h</i>)	
+Vc	nasal	m (<i>m</i>)	n (<i>n</i>)			ŋ (<i>ng</i>)	
	trill		r (<i>r</i>)				
	lateral approximant		l (<i>l</i>)				
	central approximant	v (<i>w</i>)		j (<i>y</i>)			

Table 1. Mongghul Consonant Phonemes
(Orthographic symbols in parentheses)

We look now at the environments and realizations of the consonants one by one. To provide contrast between the phonemes, where possible, we give an environment where the phoneme is word-initial and followed by the phoneme /u/ ([u] or [y]).

2.1.1 Aspirated Stops /p^h/, /t^h/, /k^h/

/p^h/ is a voiceless aspirated bilabial stop [p^h]. It appears word-initially, as in (1a); /p^h/ appears word-medially only in Chinese borrowings, such as (1b). /p^h/ does not appear in any syllable coda.

- | | | | | |
|-----|----|---------------------------|------------------|-------------------|
| (1) | a. | [p ^h u'sə] | <i>pusi</i> | 'get up' |
| | b. | [mien ^h intsə] | <i>mienpinzi</i> | 'kind of noodles' |

/t^h/ is a voiceless aspirated alveolar stop [t^h]. It appears word-initially, as in (2a), and word-medially, as in (2b). /t^h/ does not appear in syllable codas.

- | | | | | |
|-----|----|-----------------------|---------------|----------|
| (2) | a. | [t ^h u'ro] | <i>turo</i> | 'inside' |
| | b. | [nta ^h en] | <i>ndaten</i> | 'sweet' |

/k^h/ is a voiceless aspirated velar stop [k^h]. It appears word-initially, as in (3a), and word-medially, as in (3b). /k^h/ does not appear in syllable codas.

- | | | | | |
|-----|----|-----------------------|--------------|-----------|
| (3) | a. | [k ^h u'tu] | <i>kudu</i> | 'home' |
| | b. | [la:k ^h ə] | <i>laaki</i> | 'to pull' |

2.1.2 Unaspirated Stops /p/, /t/, /k/, /q/

/p/ is a voiceless unaspirated bilabial stop [p]. It appears word-initially as in (4a), word-medially as in (4b), and in syllable codas as in (4c).

- | | | | | |
|-----|----|-----------|--------------|-------------|
| (4) | a. | [pu'li:] | <i>bulii</i> | 'child/son' |
| | b. | [a:'pa] | <i>aaba</i> | 'father' |
| | c. | [læp'tɕi] | <i>labji</i> | 'leaf' |

/t/ is a voiceless unaspirated alveolar stop [t]. It appears word-initially, as in (5a), and word-medially, as in (5b).

- (5) a. [tu¹zãŋ] *durang* ‘still’ (adv.)
 b. [xa¹tõŋ] *hadong* ‘hard’

/k/ a voiceless unaspirated velar stop [k]. It appears word-initially, as in (6a), and word-medially, as in (6b). It does not appear in syllable codas.

- (6) a. [ku¹lie] *gulie* ‘to talk’
 b. [tai¹ki:] *daigii* ‘earlier’

/q/ is a voiceless unaspirated uvular stop [q]. It appears word-initially, as in (7a), word-medially, as in (7b), and in syllable codas as in (7c). In syllable codas it can also be realized as a voiceless unaspirated uvular fricative [χ]. /q/ is the only phoneme that does not also appear in the Mandarin Pinyin system.

- (7) a. [qu¹lo] *ghulo* ‘two’
 b. [pa¹qa] *bagha* ‘to hit’
 c. [moku¹loq] *mogulogh* ‘round’

2.1.3 Aspirated Affricates /ts^h/, /tɕ^h/, /tʂ^h/

/ts^h/ is a voiceless aspirated alveolar affricate [ts^h]. It appears only in loanwords from Chinese and Tibetan. In my data, it appears only word-initially.

- (8) [ts^hi¹tien] *cidien* ‘dictionary’

/tɕ^h/ is a voiceless aspirated alveolo-palatal affricate [tɕ^h]. It appears word-initially, as in (9a), and word-medially, as in (9b). /tɕ^h/ does not appear in the coda of a syllable.

- (9) a. [tɕ^huo¹kon] *quogon* ‘a little’
 b. [u¹tɕ^hi] *uqi* ‘to drink’

/tʂʰ/ is a voiceless aspirated retroflex affricate [tʂʰ]. It appears both word-initially, as in (10a), and word-medially, as in (10b). /tʂʰ/ does not appear in any syllable coda. It occurs mostly in Chinese loanwords.

- | | | | | |
|------|----|--------------|-----------------|-----------|
| (10) | a. | [tʂʰuan] | <i>chuan</i> | ‘boat’ |
| | b. | [ja:n'tʂʰen] | <i>yaanchen</i> | ‘ceiling’ |

2.1.4 Unaspirated Affricates /ts/, /tɕ/, /tʂ/

/ts/ is a voiceless unaspirated alveolar affricate [ts]. It appears word-initially, as in (11a), and also word-medially, as in (11b). It does not appear in syllable codas. This phoneme often occurs in free variation with the phoneme /s/. This is illustrated in (11c).

- | | | | | |
|------|----|------------------------|--------------------------|--------|
| (11) | a. | [tsutuor'qa] | <i>zuduorgha</i> | ‘rice’ |
| | b. | [pa'tsar] | <i>bazar</i> | ‘city’ |
| | c. | [funie'tsə ~ funie'sə] | <i>funiezi ~ funiesi</i> | ‘soul’ |

/tɕ/ is a voiceless unaspirated alveolo-palatal affricate [tɕ]. It appears word-initially, as in (12a), and word-medially, as in (12b). /tɕ/ does not appear in syllable codas.

- | | | | | |
|------|----|-------------|----------------|---------|
| (12) | a. | [tɕy'tɕyæn] | <i>jujuan</i> | ‘thick’ |
| | b. | [qa'tɕiær] | <i>ghajiar</i> | ‘land’ |

/tʂ/ is a voiceless unaspirated retroflex affricate [tʂ]. It appears word-initially, as in (13a), and word-medially, as in (13b). /tʂ/ does not appear in syllable codas. It appears mostly in Chinese loanwords.

- | | | | | |
|------|----|-------------|-----------------|------------------|
| (13) | a. | [tʂun'la] | <i>zhunla</i> | ‘to get well’ |
| | b. | [tʂyn'tʂaŋ] | <i>junzhang</i> | ‘army commander’ |

2.1.5 Fricatives /f/, /s/, /ç/, /ʃ/, /x/

/f/ is a voiceless labio-dental fricative [f]. /f/ appears word-initially (14a) and word-medially (14b), but not in syllable codas.

- | | | | | |
|------|----|------------|----------------|-------------|
| (14) | a. | [fu'lə] | <i>fuli</i> | ‘to plough’ |
| | b. | [poufu'la] | <i>boufula</i> | ‘parcel’ |

/s/ is a voiceless alveolar fricative [s]. It appears word-initially, as in (15a), word-medially, as in (15b), and in syllable codas, as in (15c).

- | | | | | |
|------|----|----------------------|-------------|-----------------|
| (15) | a. | [su ¹ zə] | <i>suri</i> | ‘to study’ |
| | b. | [na ¹ sə] | <i>nasi</i> | ‘year (of age)’ |
| | c. | [¹ lus] | <i>lus</i> | ‘country’ |

/ç/ is a voiceless palatal fricative [ç]. It appears word-initially, as in (16a), word-medially, as in (16b).

- | | | | | |
|------|----|-----------------------|--------------|-----------------------|
| (16) | a. | [çy ¹ zje] | <i>xurie</i> | ‘to believe’ |
| | b. | [mu ¹ çi] | <i>muxi</i> | ‘before, in front of’ |

/ʃ/ is a voiceless retroflex fricative [ʃ]. It appears in word-initial and word-medial position, as illustrated by (17a) and (17b). /ʃ/ does not appear in syllable codas.

- | | | | | |
|------|----|------------------------------------|-----------------|-------------|
| (17) | a. | [ʃi ¹ ke ^a] | <i>shige</i> | ‘big’ |
| | b. | [mar ¹ ʃta:] | <i>marshdaa</i> | ‘to forget’ |

/x/ is a voiceless velar fricative [x]. It appears in initial (18a) and medial (18b) positions in a word. /x/ does not appear in syllable codas.

- | | | | | |
|------|----|----------------------|-------------|---------|
| (18) | a. | [xu ¹ nə] | <i>huni</i> | ‘sheep’ |
| | b. | [ma ¹ xa] | <i>maha</i> | ‘meat’ |

2.1.6 Nasals /m/, /n/, /ŋ/

/m/ is a bilabial nasal [m]. It appears word-initially as in (19a), word-medially as in (19b), and in syllable codas as in (19c).

- | | | | | |
|------|----|---------------------------------------|----------------|-----------|
| (19) | a. | [mu ¹ tie] | <i>mudie</i> | ‘to know’ |
| | b. | [a ¹ ma] | <i>ama</i> | ‘mouth’ |
| | c. | [k ^h ier ¹ kæm] | <i>kiergam</i> | ‘stairs’ |

/n/ is an alveolar nasal [n]. It appears in word-initial position, as in (20a), word-medial position, as in (20b), and in syllable codas, as in (20c).

- | | | | | |
|------|----|-------------------------|---------------|------------|
| (20) | a. | [nu ¹ tu] | <i>nudu</i> | ‘eye’ |
| | b. | [xa ¹ na:] | <i>hanaa</i> | ‘to cough’ |
| | c. | [xou ¹ tɕin] | <i>houjin</i> | ‘old’ |

/ŋ/ is a velar nasal [ŋ]. It appears only in syllable codas, as in (22a) and (22b). In my database, only the vowels /a/ and /o/ precede /ŋ/. They are often nasalized.

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|------|----|------------------------|-----------------|-------------|
| (22) | a. | [ʃte ¹ nõŋ] | <i>shdenong</i> | ‘last year’ |
| | b. | [tu ¹ zãŋ] | <i>durang</i> | ‘still’ |

2.1.7 Liquids /l/, /r/

/l/ is a voiced alveolar lateral approximant [l]. It appears word-initially, as in (23a), word-medially, as in (23b), and in syllable codas, as in (23c).

- | | | | | |
|------|----|-----------------------|---------------|--------------------|
| (23) | a. | [lu ¹ la:] | <i>lulaa</i> | ‘to set in office’ |
| | b. | [ma ¹ lãŋ] | <i>malang</i> | ‘tomorrow’ |
| | c. | [¹ skəl] | <i>sgil</i> | ‘heart’ |

/r/ is a voiced liquid which has two allophones: a voiced alveolar trill [r], and a voiced retroflex fricative [z]. It appears word-initially, as in (24a), word-medially, as in (24b), and in syllable codas, as in (24c) and (24d). The allophone [r] appears in syllable codas; elsewhere the allophone [z] appears.

- | | | | | |
|------|----|---------------------------------------|----------------|-----------|
| (24) | a. | [zɸ ¹ sə] | <i>rusi</i> | ‘to flow’ |
| | b. | [a ¹ zɪn] | <i>arin</i> | ‘clean’ |
| | c. | [¹ tur] | <i>dur</i> | ‘day’ |
| | d. | [k ^h ier ¹ kæm] | <i>kiergam</i> | ‘stairs’ |

2.1.8 Approximants /ʋ/, /j/

/ʋ/ is a voiced labio-dental approximant [ʋ]. It appears word-initially, as in (25a), and word-medially, as in (25b).

- (25) a. [ʋu¹sə] *wusi* ‘grass’
 b. [a¹ʋu] *awu* ‘to buy’

/j/ is a voiced palatal approximant [j]. It appears word-initially, as in (26a), and word-medially, as in (26b).

- (26) a. [ju¹t^hæn] *yutan* ‘narrow’
 b. [sa¹juo] *sayuo* ‘potato’

2.2 Vowels

Mongghul has 5 phonemic vowels, symbolized /i/, /e/, /a/, /o/, and /u/. All five vowels appear also as long vowels.

	front	back
high	i	u
mid	e	o
low	a	

Table 2. Mongghul Vowel Phonemes

Before looking at the environments and realizations of the vowels, we provide here minimal pairs for the front vowels and back vowels. We also show all the vowels in similar environments.

Minimal pairs for the front vowels:

- [skəl¹te] *sgilde* ‘in the heart’
 [skel¹te] *sgelde* ‘to see each other’

Minimal pairs for the back vowels:

- [mu¹ɕi] *muxi* ‘before, in front of’
 [mo¹ɕi] *moxi* ‘to study’

The five vowels in somewhat similar environments:

[skəl'te]	<i>sgilde</i>	'in the heart'
[skel'te]	<i>sgelde</i>	'to see each other'
[^l qal]	<i>ghal</i>	'fire'
[^l qul]	<i>ghul</i>	'valley'
[xor'mi:]	<i>hormii</i>	'skirt'

2.2.1 /i/

/i/ is a high front vowel. It is realized as [ɪ], [ə], and [i]. Allophones [ɪ] and [ə] are in free variation.

/i/ is realized as [i], when it

1. is a long vowel; (27a and 27b)
2. occurs in a vowel cluster; or (27c)
3. occurs after /tɕ/, /tɕ^h/ or /ɕ/. (27d and 27e)

When the syllable is stressed (usually the last syllable), and the above mentioned conditions are not true, /i/ is realized as [ɪ] or [ə], as in (27f) and (27g).

When the syllable is unstressed, /i/ is usually realized as [i] whether or not the above-mentioned conditions are true. But it is also realized as [ɪ] or [ə], and it seems that these three allophones are in free variation in this environment. See examples (27h)–(27j).

(27)	a.	[i:lə]	<i>iili</i>	'all'
	b.	[ma:'li:]	<i>maalii</i>	'fast'
	c.	[^h ie]	<i>tie</i>	'he, that'
	d.	[hou'tɕin]	<i>houjin</i>	'old'
	e.	[xu'çi]	<i>huxi</i>	'mouth'
	f.	[t ^h a:'vɪn]	<i>taawin</i>	'five'
	g.	[pie'zə]	<i>bieri</i>	'wife'
	h.	[ni'zə]	<i>nira</i>	'name'
	i.	[kə'tɕi]	<i>giji</i>	'this way/so'
	j.	[tr'tie k ^h un]	<i>didie kun</i>	'man'

2.2.2 /e/

/e/ is a mid front vowel. It is realized as [e]. It doesn't occur word-initially. It appears as a long vowel, as in (28e), but only rarely. When /e/ is the last phoneme of the utterance, there is most often an offglide ^a as in (28f) and (28g).

(28)	a.	[nti ¹ zje]	<i>ndirie</i>	'here'
	b.	[jæ:n ¹ tʂ ^h en]	<i>yaanchen</i>	'ceiling'
	c.	[t ^h inke ¹ zə]	<i>tingera</i>	'sky'
	d.	[sei ¹ na]	<i>seina</i>	'good'
	e.	[ku ¹ je:]	<i>guyee</i>	'widow'
	f.	[ni ¹ ke ^a]	<i>nige</i>	'one'
	g.	[ni ¹ ke t ^h ir ¹ ke ^a]	<i>nige tirge</i>	'one car'

2.2.3 /a/

/a/ is a low vowel. It is realized as [a] and [æ].

The allophone [æ] appears when followed by the alveolar nasal /n/, bilabial nasal /m/, bilabial stop /p/, or alveolar trill /r/, unless it is preceded by the velar fricative /x/ or uvular stop /q/.

(29)	a.	[mæn ¹ t ^h a]	<i>manta</i>	'to dig'
	b.	[k ^h ier ¹ kæm]	<i>kiergam</i>	'stairs'
	c.	[læp ¹ çi]	<i>labxi</i>	'leaf'
	d.	[nær ¹ qai]	<i>narghai</i>	'tender'

Otherwise, /a/ is realized as [a]. Notice (30d) and (30e), where /a/ is followed by /n/ and /r/, respectively, but preceded by /x/ or /q/. It is often nasalized when preceding a velar nasal /ŋ/, as in (30f).

(30)	a.	[a ¹ ma]	<i>aama</i>	'mother'
	b.	[xampu ¹ zə:]	<i>hamburaa</i>	'to rest'
	c.	[¹ ja:n]	<i>yaan</i>	'what'
	d.	[xanta ¹ tsə]	<i>handaazi</i>	'undershirt'
	e.	[¹ qar]	<i>ghar</i>	'hand'
	f.	[tu ¹ zəŋ]	<i>durang</i>	'still, yet'

2.2.4 /o/

/o/ is a mid back rounded vowel. It is realized as [o], as in (31a–d). It is often nasalized when preceding a velar nasal /ŋ/, as in (31d).

(31)	a.	[¹ o:la]	<i>oola</i>	‘yes, ok’
	b.	[xou ¹ tçin]	<i>houjin</i>	‘old’
	c.	[xui ¹ no]	<i>huino</i>	‘after’
	d.	[xa ¹ lõŋ]	<i>halong</i>	‘warm’

2.2.5 /u/

/u/ is a high back rounded vowel. Its allophones are [u] and [y]. /u/ is realized as [y] after phonemes /ç/, /tç/, /tç^h/, and /j/, unless it is part of the vowel cluster /uo/. Otherwise it is realized as [u], as in (32e–h).

(32)	a.	[çy ¹ zje]	<i>xurie</i>	‘to study’
	b.	[¹ çtçyn]	<i>xjun</i>	‘girl’
	c.	[¹ tç ^h y]	<i>qu</i>	‘drink!’
	d.	[i ¹ jyen]	<i>iiyuen</i>	‘hospital’
	e.	[u ¹ læ]	<i>ula</i>	‘hill’
	f.	[sim ¹ su:l]	<i>simsuul</i>	‘fly’
	g.	[a ¹ vu]	<i>awu</i>	‘big brother’
	h.	[çtçuo ¹ sə]	<i>xjuosi</i>	‘tree’

3 Syllable structure

3.1 Maximal syllable template

The maximal syllable template for Mongghul is given in (33).

$$(33) \quad ((C_1)C_2)V_1(V_2(V_3))(C_3)$$

where:

- if C_1C_2 , then $C_1 = /x, n, r, s, \text{ç}/$
 $C_2 = /p, t^h, t, ts^h, k, q, tç, ts/$
- if only C_2 , then $C_2 \neq /ŋ/$
- $C_3 = /p, t, q, l, m, n, ŋ, r, s, \text{ç} /$
- if V_3 , then also C_2 .

Onset clusters only occur word-initially. Below, all the possible consonant clusters I have in my database are listed:

/xk, xq/
/nt, nt^h, nts^h, nk, nq, ntɕ, ntʂ/
/rm, rk, rtɕ/
/sp, sm, sn, sk, sq, sts/
/ʂt, ʂk/
/çtç/

Li KeYu (1980) reports that phonemes /p^h/, /k^h/, /tɕ^h/, and /ts^h/ are also possible in C₂ position after the phoneme /n/. He also has more combinations with phonemes /r/ and /ç/ than I have in my database. Below are the consonant clusters he reports, in addition to the clusters given above:

/np^h, nk^h, ntɕ^h, ntʂ^h/
/rp, rt, rts, rq/
/çm, çn, çt, çr, çk, çq/

Possible vowel clusters are:

ai, ao, au
ei
ia, ie, iu, iao, iau
ou
ua, ui, ue, uai

3.2 Syllable types

There are thirteen different syllable types in Mongghul. Examples of all these types are given in (34). Clusters consisting of a vowel and a glide or a glide and a vowel are interpreted as vowel sequences rather than diphthongs. If treated as diphthongs the number of vowels would increase by eleven. The syllable structure would of course be much simpler, but that is not worth adding so many vowels in the system.

(34)	V	[a ¹ la]	<i>ala</i>	‘to kill’
	VV	[a ¹ pa]	<i>aaba</i>	‘father’
	VC	[æ ⁿ tɕi:]	<i>anjii</i>	‘where’
	VVC	[¹ aur]	<i>aur</i>	‘air’
	CV	[xu ¹ çi]	<i>huxi</i>	‘mouth’
	CVV	[¹ tuo]	<i>duo</i>	‘now’
	CVVV	[¹ piao]	<i>biao</i>	‘watch’
	CVC	[nim ¹ pa:]	<i>nimbaa</i>	‘right, yes’
	CVVC	[¹ quar]	<i>ghuar</i>	‘light’
	CCV	[nt ^h i ¹ za:]	<i>ntiraa</i>	‘to sleep’
	CCVV	[¹ ntie]	<i>ndie</i>	‘here’
	CCVC	[¹ çtɕyn]	<i>xjun</i>	‘girl’
	CCVVC	[¹ çtɕiur]	<i>xjiur</i>	‘bottom’

3.3 Affricates and glides

3.3.1 Affricates

I have treated the stop + fricative sequences [ts], [ts^h], [tʂ], [tʂ^h], [tɕ], and [tɕ^h] as affricates rather than clusters of two consonants. If they would be considered as CC clusters, it would extend the maximal syllable template. For instance, we would get a syllable as in (35):

(35)	*CCCVC	[¹ çtɕyn]	<i>xjun</i>	‘girl’
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Also, it would give three phonemes, /s^h/, /ʂ^h/, and /ç^h/ a very limited distribution, appearing only immediately after the phoneme /t/.

3.3.2 The glide [j]

The glide [j] is treated as a vowel, rather than a consonant, except in syllable-initial position. If it were treated as a consonant, we would get maximal syllable template ((C₁)C₂(C₃))V₁(V₂)(C₄). The template would not be any more complex than in (33), but the amount of different syllable types would increase to sixteen. Syllable types CCV, CCVC, CCCV, and CCCVC would be added, and only the syllable type CVVV would become unnecessary. The syllable types CVV, CVVC, and CCVV would still be valid because Mongghul has also long vowels.

(36) is an example of a CCC sequence, if the glide were interpreted as a consonant. We would rather interpret it as vowel as in (37).

(36) *CCCV ['ntje] *ndye* 'here'

(37) CCVV ['ntje] *ndie* 'here'

In syllable-initial position, the glide [j] is treated as a consonant. Look, for example, at the word 'yaan'. If the glide [j] were treated as a vowel, we would have an extra syllable type VVVC:

(38) *VVVC ['ja:n] *iaan* 'what'

To avoid another syllable type, we treat [j] in this position as a consonant:

(39) CVVC ['ja:n] *yaan* 'what'

Another reason to treat the glide [j] as a vowel, except in syllable-initial position, is that in this way my system conforms to the way Chinese Pinyin treats this glide.

4 Stress

As a rule, the stress is on the final syllable of the word. Occasionally, the stress falls elsewhere. In those cases, stress placement does not distinguish meanings of words; therefore, there is no need to mark stress in the orthography.

Stress consists of higher pitch and greater loudness, relative to those of neighbouring unstressed syllables.

The syllable being stressed or unstressed affects the vowel quality of the phoneme /i/, as discussed above in 2.2.1.

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