

# Loanwords, prominence, and the basis for Mongolian vowel harmony

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# Outline

- Halh & Horchin dialects
- Source-language stress & vowel harmony in loanwords
- Field study design & methods
- Results
- Future directions

# Geographic distribution of the Mongolian dialects



<sup>0</sup>Map redrawn by D. McCloy from Svantesson, J., Tsendina, A., Karlsson, A., & Franzén, V. (2005). *The phonology of Mongolian*. Oxford University Press, USA, p. 141.

# Halh (Khalkha) Mongolian vowel harmony

**Pharyngeal (ATR) harmony:** all vowels within a non-compound word must agree in pharyngeality.<sup>1</sup>

**Rounding harmony:** all non-high vowels within a non-compound word must agree in rounding. Applies to /e o a ɔ/.

[-pharyngeal]	[+pharyngeal]	With instrumental suffix /-E:r/			
(e), e:	a, a:	ts <sup>h</sup> e:tʃ + e:r	"chest"	ts <sup>h</sup> a:s + a:r	"paper"
o, o:	ɔ, ɔ:	xoɭ + o:r	"foot"	χɔɭ + ɔ:r	"far"
u, u:	u, u:	u:ɭ + e:r	"cloud"	u:ɭ + a:r	"mountain"
i, i:	--	pi:r + e:r	"brush"		

**Standard analysis:** rightward feature spreading from the initial syllable.

<sup>0</sup>Source: Svantesson, J., Tsendina, A., Karlsson, A., & Franzén, V. (2005). *The phonology of Mongolian*. Oxford University Press, USA

<sup>1</sup>The label "pharyngeal" is found in Svantesson, J. O. (1985). Vowel harmony shift in Mongolian. *Lingua*, 67(4), 283 - 327 and Ladefoged, P., & Maddieson, I. (1996). *The sounds of the world's languages*. Wiley-Blackwell.

# Horchin Mongolian vowel harmony

Same harmony rules, **different vowel inventory**

[-pharyngeal]	[+pharyngeal]	With instrumental suffix /-E:r/			
ə, ə:	a, a:	ʃə:tʃ + ə:r	"chest"	ʃa:s + a:r	"paper"
-- (> u)	ɔ, ɔ:			χɔ:l + ɔ:r	"far"
--	ɛ, ɛ:			χɛ:r + a:r	"love"
--	œ, œ:			mœr + ɔ:r	"horse"
(y), y:	--	tʃy:l + ə:r	"kind"		
u, u:	u, u:	u:l + ə:r	"cloud"	u:l + a:r	"mountain"
i, i:	--	pi:r + ə:r	"pen"		

<sup>1</sup>Source: Bayancogtu (2002). *Qorcin aman ayalyun-u sudulul (A study of the Horchin dialect)*. Obur mongyul-un yeke suryayuli-yin keblel-un qoriy-a (Inner Mongolia University Press).

# Vowel harmony in loanwords

## Chinese loans in Horchin: disharmony<sup>2</sup>

"Pharyngeal and non-pharyngeal vowels generally co-occur freely [in loans]. Therefore...the operation of vowel harmony can only be seen between the root and the suffix."

Chinese	Horchin	Gloss
旅长 'ly:ʔʂaŋ	ly:ʔʂaŋ (+ a:r)	brigade commander
班车 'pænʔʂʰʌ:	pænʂə: (+ ə:r)	bus

<sup>2</sup>Bayancogtu (2002). *Qorcin aman ayalyun-u sudulul (A study of the Horchin dialect)*. Obur mongɣul-un yeke surɣayuli-yin keblel-un qoriy-a (Inner Mongolia University Press), p.101-106.

# Vowel harmony in loanwords

## Russian loans in Halh: bidirectional spreading<sup>3</sup>

"The Russian stressed vowel...tends to decide the vowel harmony class [in loans into Mongolian], even when it is not found in the first syllable."

Russian		Halh	Gloss
колбаса	kəl ba'sa	gaḷḷäwsa: (+ ga:r)	sausage
молоко	mə la'ko	mɔḷḷko: (+ ɔ:r)	milk

<sup>3</sup>Svantesson, J., Tsendina, A., Karlsson, A., & Franzén, V. (2005). *The phonology of Mongolian*. Oxford University Press, USA, p.31-33.

# Comparing the role of stress

	Russian	Chinese	Mongolian
Lexically distinctive?	yes	yes	no
One primary stress per word?	yes	no	yes
Stressed vowels longer?	yes	yes	yes
Contrastive vowel length?	no	no	yes

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<sup>3</sup>Russian: see Jones, D., & Ward, D. (1969). *The Phonetics of Russian*. Cambridge University Press.  
Chinese: Duanmu, S. (2007). *The phonology of standard Chinese*. Oxford University Press, USA.  
Mongolian: Svantesson, J., Tsendina, A., Karlsson, A., & Franzén, V. (2005). *The phonology of Mongolian*. Oxford University Press, USA



## Field study design & methods

**Research question:** in loanwords into Mongolian, which is more important in triggering vowel harmony, initial syllables or stressed syllables?

**Preliminary hypothesis:** stressed syllables trigger vowel harmony, unstressed syllables are harmonized to neighboring stressed syllables.

**Purpose of this study:** to test the hypothesis above using speech production data from loanwords in different dialects.

# Field study design & methods

- Recorded 4 speakers per dialect in Ulaanbaatar and Hohhot in 2011
- Elicited using images for Halh speakers, Chinese characters for Horchin speakers
- Larger study includes Chahar and other Inner Mongolian dialects



电影

对象

火车

## Field study design & methods

- 40+ words for Halh, 60+ words for Horchin
- 4 tokens per word, 2 plain and 2 suffixed
- Disyllabic, potentially disharmonic roots

# Overview of results

## Roots:

- Chinese as predicted
- Russian varies by word and by speaker

## Root-suffix:

- Transparency
- Pharyngeal/non-pharyngeal asymmetry
- New transparent vowels?

## Results: Roots from Chinese

Within-root disharmony is common, consistent with Bayancogtu (2002).

Gloss	Chinese		Horchin	Harmony
photograph	照相	'tʂau'ɕaŋ	tʂɔ:ɕaŋ	disharmonic
plastic	塑料	's <sup>w</sup> u:l'jau	su:ljo:r	disharmonic
bus	班车	'pæn'tʂ <sup>h</sup> ʌ:	pantʂ <sup>h</sup> ə:	disharmonic

## Results: Roots from Russian

Roots only sometimes harmonize with the stressed syllable as per Svantesson et al. (2005).

Gloss	Russian		Halh	Harmony
train carriage	вагон	<sub>1</sub> va'gon	β <sub>1</sub> g <sub>2</sub> ɔ:n	follows stressed syll.
pawnshop	ломбард	<sub>1</sub> lam'bard	ʒ <sub>1</sub> am <sub>2</sub> pa:rt	follows stressed syll.
company	компани(я)	<sub>1</sub> kam'panjə	k <sup>h</sup> am <sup>h</sup> a:n (sp. A) k <sup>h</sup> ɔmp <sup>h</sup> ɔ:n (sp. B) k <sup>h</sup> ɔmp <sup>h</sup> a:n (sp. C)	follows stressed syll. harmonized to /ɔ/ (??) disharmonic
model	модель	<sub>1</sub> ma'dɛlʲ	m <sub>1</sub> te:ʒ	disharmonic

## Results: Suffixes

**Pattern 1 (as expected):** Suffixes agree with rightmost vowel.

Gloss	Source language		Mongolian + INST
photograph	照相	<sup>1</sup> tʃau'ɕaŋ	tʃɔ:ɕaŋ + a:r
plastic	塑料	<sup>1</sup> s <sup>w</sup> u:l'pau	su:lɔ:r + ɔ:r
bus	班车	<sup>1</sup> pæn'tʃ <sup>h</sup> ʁ:	paŋtʃ <sup>h</sup> ə: + gə:r
cursor	курсор	<sup>1</sup> kur'sor	k <sup>h</sup> ursɔ:r + ɔ:r
company	компани(я)	<sup>1</sup> kam'panjə	k <sup>h</sup> ɔmp <sup>h</sup> a:n + a:r

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plastic	塑料	<sup>1</sup> s <sup>w</sup> u:l'pau	su:lɰɔ:r + ɔ:r
bus	班车	<sup>1</sup> pæn'tʃ <sup>h</sup> ʁ:	paŋtʃ <sup>h</sup> ə: + gə:r
cursor	курсор	<sup>1</sup> kur'sor	k <sup>h</sup> ursɔ:r + ɔ:r
company	компани(я)	<sup>1</sup> kam'panjə	k <sup>h</sup> ɔmp <sup>h</sup> a:n + a:r

Native compounds are similar:

custom	(tʃaŋ "habit" + y:ls "action")	tʃaŋ y:ls + ə:r
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## Results: Suffixes

**Pattern 2 (unexpected):** Suffixes agree with the first vowel.

Gloss	Source language	Mongolian + INST
(placename)	巴盟	'pa:'mən
to print	打印	'ta:'in
aspirin	аспирин	ə,spʲi'rin
model	модель	ma'dɛlʲ

## Transparent vowels in the native vocabulary

Halh /i/

Horchin /i u/

## Results: Transparency

Loanword data reveals novel transparent vowels in both Halh & Horchin.

Transparency	Gloss	Source language	Mongolian + INST
/ə/ in Horchin	(placename)	巴盟	'pa:'məŋ p <sup>a:</sup> məŋ + a:r
	(placename)	锡盟	'ci:'məŋ ɕi:məŋ + ə:r
/y:/ in Horchin	Korean	韩语	'xæn'y: χan <sup>a:</sup> jy: + ga:r
	English	英语	'jən'y: jiŋ <sup>a:</sup> jy: + gə:r
	German	德语	'tʁ:'y: tə: <sup>a:</sup> jy: + gə:r
/e:/ in Halh	model	модель	ma'dəlʲ m <sup>a:</sup> te: <sup>a:</sup> ɣ + ɔ:r
	pharmacy	аптек(а)	a'ptʲekə a <sup>a:</sup> ɸt <sup>h</sup> e: <sup>a:</sup> k <sup>h</sup> + a:r
	spark plug	свеча	svʲi'tʃa si <sup>a:</sup> ɸtʃ <sup>h</sup> e: <sup>a:</sup> g + e:r

## Summary of results

**Research question:** which is more important in triggering vowel harmony, initial syllables or stressed syllables?

*Answer: reflexes of stressed syllables trigger vowel harmony only if they contain certain vowels. Otherwise, initial syllables dominate.*

### Strong vowels

Halh: /a ɔ/

Horchin: /a ɔ ɛ/, long /ə/

### Weak vowels

Halh: /i e/

Horchin: /i y u/, short /ə/

### Unknowns

Halh: /u o ʊ/

Horchin: /œ/

## Future directions

### Solidify current findings

- More stress patterns
- More vowel types

### Relate to phonetic & typological research on transparency

- Variation across Mongolian dialects
- Merger of /i/ and /e/ in Halh<sup>4</sup>
- Role of height and frontness<sup>5</sup>

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<sup>4</sup>See Svantesson, J., Tsendina, A., Karlsson, A., & Franzén, V. (2005). *The phonology of Mongolian*. Oxford University Press, USA, p.6.

<sup>5</sup>See e.g. Kaun, A. (2004). The typology of rounding harmony. *Phonetically based phonology*, (p. 87 - 116); Benus, S., & Gafos, A. I. (2007). Articulatory characteristics of Hungarian "transparent" vowels. *Journal of Phonetics*, 35(3), 271--300

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