

An Optimality Theoretic Analysis of Vowel Harmony in Kazan Tatar

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Handout to accompany poster presentation, for those interested in depth!

1. Introduction

- ★ Kazan Tatar is a *Turkic Language* in the *Kipchak* branch (e.g. Kazakh, Kyrgyz, Crimean Tatar, Bashkir)
- ★ Primarily spoken in the Russian Federation in Tatarstan



Map credit: worldatlas.com

- ★ Tatars are the largest ethnolinguistic minority in Russia
- ★ 5.2 million speakers approx (Ethnologue), with 4.28 mil in Russia
- ★ Language is provincial, and used in media, education, government, etc. (Ethnologue) although Russian is definitely the dominant language in the area.
- ★ Research presents analysis and description of the present-day phonological behaviors of vowels in Kazan Tatar

2. Background

- ★ Tatar is not a language that receives a lot of attention, research wise
- ★ Not much available in terms of English literature on linguistic research of the Tatar language - the bulk of what I have found has been in Russian.
 - Some English literature available: Poppe 1968, Comrie 1997, Johanson 1998, Berta 1998
 - Recent theses/dissertation work: Conklin 2015, Davliyeva 2011

- ★ Speakers for this study
 - Two female adult speakers, 37 and 62 at time of elicitation respectively
 - Both grew up in Kazan, Tatarstan
 - They didn't know each other nor are they related
 - Not monolingual (it is *extremely* rare for Tatar speakers to be monolingual).
 - They were monolingual until around age 5, where they started to learn Russian in school.
- ★ Word list: started with examples from Comrie 1997 to test his claims, then supplemented word list from Russian-Tatar dictionary and online dictionaries (Wiktionary, Glosbe).
 - Speakers verified word list

★ Sentence frames used to elicit data

Target cases	Expected morphemes	Tatar frame	English gloss
<i>Nominative</i>		(none, read aloud in list form)	
<i>Nominative Plural</i>	-IVr	(none, read aloud in list form)	
<i>Second Person Plural Possessive</i>	-VGVz	Сезнең [X]. /sezneŋ/ '2 ND .PL-GEN [X]'	This is your [X].
<i>Dative</i>	-gV	Мин [X] бирәм /min [X] biræm/ 1 ST .SG give-1 ST -PRES	I'm giving it to [X]
<i>Ablative</i>	-DVn	(I asked them to say 'from X' but in Tatar)	from [X]

- NOM as case to compare all allomorphy against, PL, DAT, ABL for allomorphy.
 - Wanted to test across several morphophonological domains
- 2nd person plural possessive attested by Comrie and other sources as excellent place to find the effects of rounding harmony.

3. Kazan Tatar Phonetics

- ★ As attested in Comrie 1997, Tatar has 25 consonant phonemes and 10 vowel phonemes. For the purposes of this analysis, I used his phonetic inventory.
- ★ After so much work with Tatar, however, I have come to have disagreements with the vowel space and some consonants, which is the subject of future work using big-data driven phonetic data analysis.

★

See inventory on next page.

Consonant Inventory of Kazan Tatar

	Stop	Fricative	Nasal	Trill	Approximant
Labial	p b	f	m		w
Alveolar	t d	s z	n	r	l
Aveolo-palatal		ç ʒ			j
Front Velar	k g	ʃ ʒ	ŋ		
Back Velar	q	x ɣ			
Glottal	ʔ	h			

Consonants on the right are voiced, and left are voiceless. Shaded areas are areas denoted impossible by the IPA.

Vowel Inventory of Kazan Tatar

	Front		Back	
	Unrounded	Rounded	Unrounded	Rounded
High	i	y	u	u
Mid	e	ø	ɤ	o
Low	æ	--	ɑ	--

4. Vowel Harmony in Kazan Tatar

- ★ Sensitive to features of backness
- ★ Domain: Prosodic Word
 - Roughly corresponds to the morphological / lexical word
- ★ Simple case - plural allomorphy:

	[-back]	[+back]
singular	эби /ebi/ 'grandma'	йолдыз /jolduz/ 'star'
plural	эбиләр /ebilær/ 'grandma-PL'	йолдызлар /jolduzlar/ 'star-PL'

- ★ No phonologically acceptable word-internal or allomorphic disharmony allowed in native Kazan Tatar words.
 - Loanwords, however, allow disharmony.
- ★ Compound words appear disharmonic, but are not.
 - Phonological analysis maintains that if word boundaries are preserved for individual components, and left-to-right nature of vowel harmony applies for allomorphy cases (only suffixation at the rightmost edge of the word) then the apparent disharmony is

actually permissible given it the language's phonology handles compounds as two words, not one.

Example:

	[-back]	[+back]
singular	туган көн /tuɣankøn/ ' <i>birthday</i> '	билбау /bilbaw/ ' <i>belt</i> '
plural	туган көннәр /tuɣankønnær/ ' <i>birthday-PL</i> '	билбаулар /bilbawlar/ ' <i>belt-PL</i> '

★ Loanword disharmony cases:

	[-back]	[+back]
singular	слесарь /slesar/ ' <i>locksmith</i> '	совет /savjet/ ' <i>soviet</i> '
plural	слесарьләр /slesarlær/ ' <i>locksmith-PL</i> '	советлар /savjetlar/ ' <i>soviet-PL</i> '

5. Lack of Rounding Harmony

★ Rounding harmony was previously attested by many sources as present in the mid-vowels. Some sources described it as weak or gradient.

- Comrie 1997, Poppe 1968, Berta 1998, Johanson 1998

★ Comrie said best frame of reference for rounding harmony is the 2nd person plural possessive morpheme, *-VGVz*.

★ If rounding harmony were present, then 4 allomorphs would occur in any suffix containing mid vowels.

★ My analysis only found two allomorphs for front and back vowels, respectively.

	[-back]	[+back]
nominative	өй /øje/ ' <i>home</i> '	авыз /awuɪz/ ' <i>mouth</i> '
2 nd P.PL.GEN	өйгез /øjegez/ ' <i>home-2ND.PL.GEN</i> '	авызгоз /awuɪzoɣoz/ ' <i>mouth-2ND.PL.GEN</i> '

★ McCollum 2016 describes that many Turkic languages show decay of rounding harmony, suggesting it is a less salient process than backness harmony.

★ It is possible Tatar had rounding harmony in the past, but based upon this analysis it is not present today.

6. OT Analysis

★ OT Analysis modelled after Walker 2012's presentation of OT analysis of Turkish vowel harmony.

- ★ SPREAD is the harmony driving constraint, with IDENT-IO as faithfulness constraint
 - These serve as the “base analysis” that other strata build upon to handle exceptionality cases.

Full Constraint Set

MAX-V – all underlying vowels must have a correspondent in the output

LOANWORD CORRESPONDENCE – (abbreviated CORR-LW) – Every segment in the input must be in the output for loanwords (Tsuchida 1995).

IDENT- σ_1 -A([back]) – Source affix feature value information for [back] from the first syllable in the stem.

SPREAD ([back], PWord) – For all tokens of [back] in a pword, if a token is linked to any segment, it is linked to all segments

IDENT-IO([back]) – Corresponding segments in the input and output have identical values for the feature [back].

***SKIP- σ** – assigns a penalty when feature spreading skips an intervening syllable. When ranked below the harmony driving constraint, it is violable to allow transparency.

- ★ Word-Internal Tableaux examples, singular.

jolduz	SPREAD([back],PWord)	IDENT-IO([back])
☞jolduz		
jølduz	*!	
joldyz	*!	
jøldyz		*!

An example of [+back] word-internal harmony in Tatar.

ebi	SPREAD([back],PWord)	IDENT-IO([back])
☞ebi		
ebuu	*!	
ɣbi	*!	
ɣbuu		*!

And an example of [-back] word-internal harmony.

- ★ Word-Internal Tableaux examples, plural.

jolduz+IVr	SPREAD([back],PWord)	IDENT-IO([back])
☞jolduzlar		
jolduzlær	*!	
jødyzlær		*!

'star' shown as a plural.

ebi+IVr	SPREAD([back],PWord)	IDENT-IO([back])
☞ebilar		
ebilar	*!	
ɣbular		*!

'grandma' shown as plural.

- ★ For compounds, this analysis holds because SPREAD is sensitive to the prosodic word boundaries.

[tuyan] _{Pwd} [køn] _{Pwd}	SPREAD([back],PWord)	IDENT-IO([back])
▣tuyankøn		
tuyankøn		*!
tyyænkøn		*!

[bil] _{Pwd} [baw] _{Pwd}	SPREAD([back],PWord)	IDENT-IO([back])
▣bilbaw		
bilbæw		*!
bulbaw		*!

'birthday' and 'belt' in the singular.

[tuyan] _{Pwd} [køn] _{Pwd} +nVr	SPREAD([back],Word)	IDENT-IO([back])
▣tuyankønnær		
tuyankønnær	*!	
tuyankonnær		*!

[bil] _{Pwd} [baw] _{Pwd} +lAr	SPREAD([back],Word)	IDENT-IO([back])
▣bilbawlar		
bilbawlær	*!	
bilbæwlær		*!

'birthday' and 'belt', now in the plural.

- ★ To allow loanword disharmony, the strata ranks the SKIP constraint below our harmony driving constraint, making it violable.

Loanword Tableaux, singular

[savjet] _{LW}	MAX-V	CORR-LW	SPREAD	IDENT-IO	*SKIP-σ
▣savjet			*		*
sævjet		*!		*	
savjrt		*!		*	
savjt	*!				
svjet	*!				

[slesar] _{LW}	MAX-V	CORR-LW	SPREAD	IDENT-IO	*SKIP-σ
▣slesar			*		*
slesær		*!		*	
slosar		*!		*	
slesr	*!				
slsar	*!				

The singular strata for 'Soviet' and 'locksmith'.

Loanword Tableaux, plural

[savjet] _{LW} +I _{Ar}	MAX-V	CORR-LW	IDENT-S ₁ -A	SPREAD	IDENT-IO	*SKIP-σ
■savjetlar				*		*
savjetlær			*!	**		**
sævjetlær		*!			*	
savjtlar	*!					
svjetlær	*!					

[slesar] _{LW} +I _{Ar}	MAX-V	CORR-LW	IDENT-S ₁ -A	SPREAD	IDENT-IO	*SKIP-σ
■slesarlær				*		*
slesarlær			*!	**		**
slesærlær		*!			*	
slesrlær	*!					
slsarlær	*!					

And, the plural stratum, adding the specialized IDENT constraint to surface the correct allomorphs in the inflected forms.

7. References

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