

*Phonetic and Phonological Problems in Kyrgyz*  
*A Fulbrighter's plans for gathering data in the field*

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<http://jnw.name/>

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  - Background
  - Phonetics and Phonology
- 2 *Areas for data gathering*
  - Phonetic vowel space
  - The 9<sup>th</sup> vowel
  - Tonogenesis
  - Monophthongisation
  - Sonority of /n/
  - Other (smaller) things
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## *Background: Kyrgyzstan*

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# *Background*

*Kyrgyz people*

# Background

## *Kyrgyz people*

### Kyrgyz people

- Originally from Mongolia
- Alaroo ±1000 years ago
- Traditionally
  - nomadic pastoralists
  - Tengriistic
  - superficially Islamicised
- Soviet collectivisation
- Most bilingual in Russian
- (South) many bilingual in Uzbek



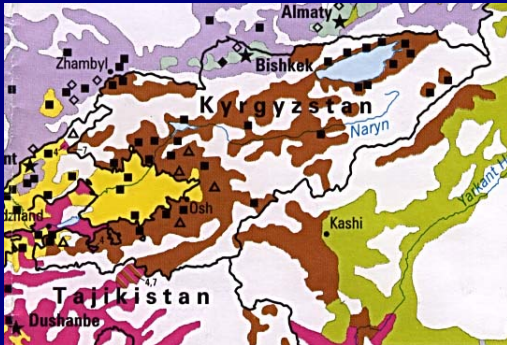
# *Background*

## *Kyrgyz language*

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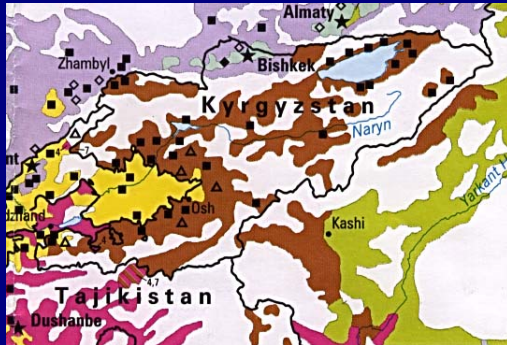
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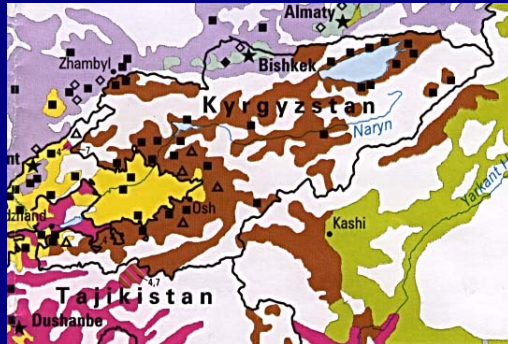


- 3½ million speakers

# Background

## Kyrgyz language

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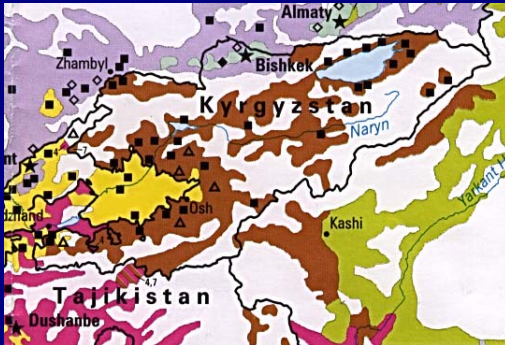


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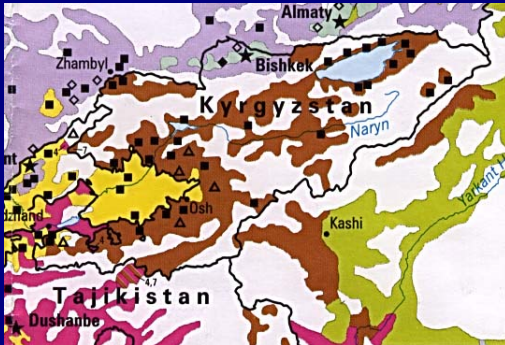


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- Also:
  - Tajikistan
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# Background

Kyrgyz language

## Kyrgyz language



- 3½ million speakers
- Mostly in Kyrgyzstan
- Also:
  - Tajikistan
  - China
- Turkic language
  - SOV word-order
  - agglutinative
  - vowel harmony
  - etc.



# Phonetics

## Vowels

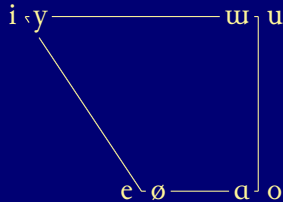
### *Kyrgyz vowel inventory & space*

- **Short:**

i, y, e, ø, a, o, ʊ, u

- **Long:**

i:, y:, e:, ø:, a:, o:, ʊ:, u:



# Phonetics

## Vowels

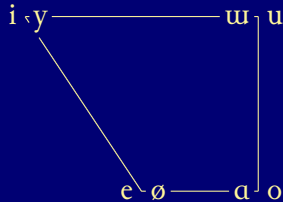
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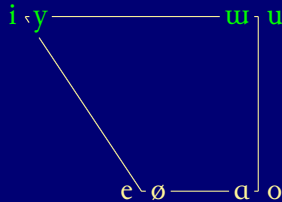
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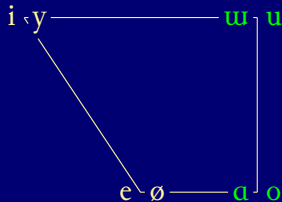
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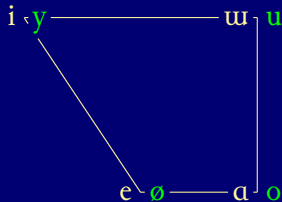
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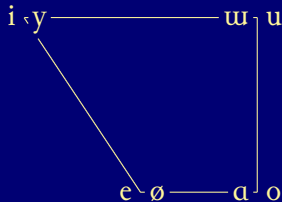
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- “typical 8-point Turkic vowel system”

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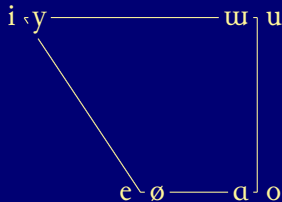
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- distinguished by  $\pm$ high,  $\pm$ back,  $\pm$ round
- “typical 8-point Turkic vowel system”
- long vowel equivalents

# *Phonology*

## *Vowel harmony*

## Vowel harmony



# Phonology

## Vowel harmony

### Vowel harmony

- Front/back harmony

	A	I
i	e	i
e	e	i
y	ø	y
ø	ø	y
a	a	ʊ
ʊ	a	ʊ
o	o	u
u	a	u

# Phonology

## Vowel harmony

### Vowel harmony

- Front/back harmony
- Rounding harmony

	A	I
i	e	i
e	e	i
y	ø	y
ø	ø	y
a	a	ʊ
ʊ	a	ʊ
o	o	u
u	a	u

# Phonology

## Vowel harmony

### Vowel harmony

- Front/back harmony
- Rounding harmony
- Exception: [ɑ] after /u/

	А	И
и	е	и
е	е	и
у	ø	у
ø	ø	у
ɑ	ɑ	ʊ
ʊ	ɑ	ʊ
о	о	u
u	ɑ	u

# Phonology

## Vowel harmony

### Vowel harmony

- Front/back harmony
- Rounding harmony
- Exception: [ɑ] after /u/
- “Southern dialect”:  
[o] after /u/

	А	И
и	е	и
е	е	и
у	ø	у
ø	ø	у
ɑ	ɑ	ʊ
ʊ	ɑ	ʊ
о	о	u
u	о	u

# Phonology

## Vowel harmony

### Vowel harmony

- Front/back harmony
- Rounding harmony
- Exception: [ɑ] after /u/
- “Southern dialect”:  
[o] after /u/
- Long vowels are the same

	А	И
и	е	и
е	е	и
у	ø	у
ø	ø	у
ɑ	ɑ	ʊ
ʊ	ɑ	ʊ
о	о	u
u	о	u

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Areas for data gathering  
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Phonetic vowel space  
The 9<sup>th</sup> vowel  
Tonogenesis  
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- Mono-syllabic stems with one of two endings
  - /CV<sub>z</sub>+NI/ (accusative), /CV<sub>z</sub>+DA/ (locative)
  - V = all [short] vowels
  - Desonorisation of /n/ after /z/ → [d]
  - All forms [CV<sub>z</sub>dV]

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  - Desonorisation of /n/ after /z/ → [d]
  - All forms [CV<sub>z</sub>dV]
- Syntactically equivalent carrier phrases
- Randomised, with filler sentences
- 5 repetitions of each phrase
- Measured vowels in 3 interior repetitions



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  - /CV<sub>z</sub>+NI/ (accusative), /CV<sub>z</sub>+DA/ (locative)
  - V = all [short] vowels
  - Desonorisation of /n/ after /z/ → [d]
  - All forms [CV<sub>z</sub>dV]
- Syntactically equivalent carrier phrases
- Randomised, with filler sentences
- 5 repetitions of each phrase
- Measured vowels in 3 interior repetitions
- Some problems:
  - initial /C/ not [well-]controlled for
  - measured inner 20ms of [V]s
  - [V]s ranged from voiceless (0ms) to 120ms+

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- Example sentence pair:

- (1) ɕʰajlo:–ʋo kœtʃ–kœn–dœ, **saz–du** saɣʏzɣan bas–ʃp  
*jayloo*–DAT move–GER–LOC, swamp–ACC raven push–PART  
ket–ip–tir  
leave–EVID.PAST–3rd.SG

Жайлоого көчкөндө, **сазды** сагызган басып кетиптир.

“While moving to the summer pasture, the swamp was full of ravens.”

- (2) ɕʰol–do ɕʰyr–gœn–dœ, **saz–da** ɕʰaman ɕʰwt ɕʰwt–ta–n–du  
road–LOC walk–GER–LOC, swamp–LOC bad smell smell–VERB–PASS–PAST

Жолдо жүргөндө, **сазда** жаман жыт жыттанды.

“Walking [down] the road, a bad smell was smelled in the swamp.”

## Phonetic vowel space

### Pilot study of phonetic vowel space

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Жолдо жүргөндө, сазда жаман жыт жыттанды.

“Walking [down] the road, a bad smell was smelled in the swamp.”

- Findings:

- Some height harmony
- /ɑ/ doesn't pattern with /o/ phonetically
- Vowels in stems vs. affixes behaved differently...

## Phonetic vowel space

- Pilot study findings (ctd):
  - Vowel space different for **affixes** and **stems**
  - Affix vowel space more typical
  - Affix vowel space more condensed / less distinct

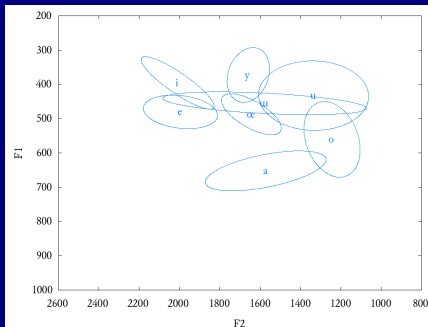


Figure: Affix vowel space

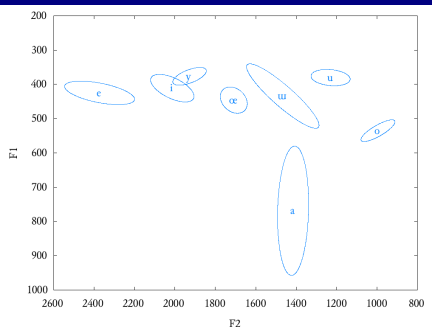


Figure: Stem vowel space

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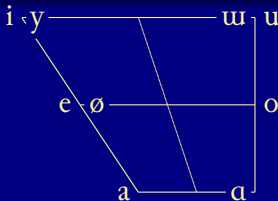
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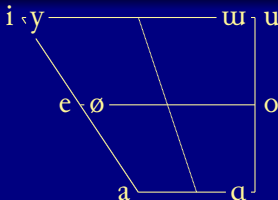


- Result of:



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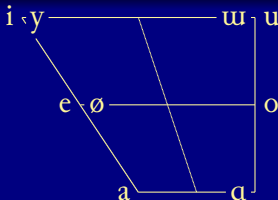
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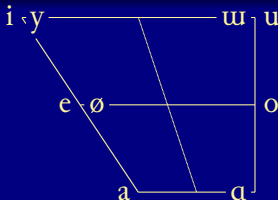
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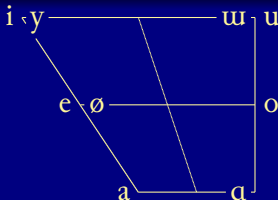
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- No round counterpart

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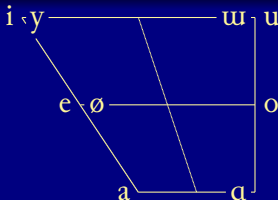
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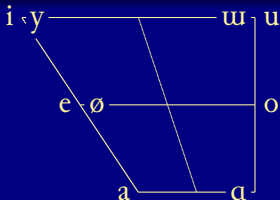
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- No minimal pairs (with /ɑ/)
- Doesn't interact with normal vowel harmony

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# *Tonogenesis*

## Tonogenesis

- Noticed in pilot study of vowels
- /Vz/ → [V:] with falling pitch
- Consistent pitch drop of 20Hz-30Hz
- Slight drop in intensity for /z/ remains

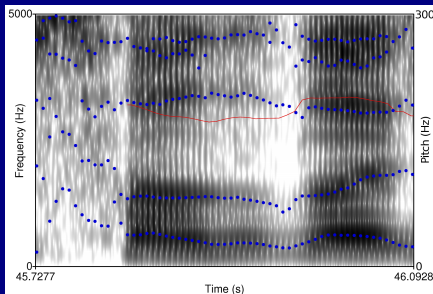


Figure: /sazda/

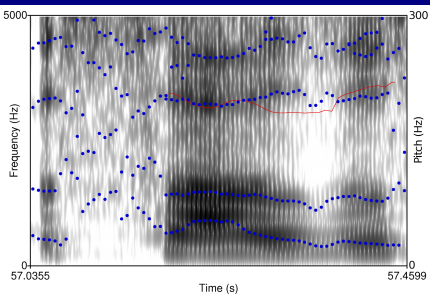


Figure: /sazdu/



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- V: ← VC<sub>[+vc]</sub>

# Monophthongisation

## Monophthongs and Diphthongs

- V: ← VC<sub>[+vc]</sub>
  - Old Turkic /sub/

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- Talas:
  - UFs? (phonemically diphthongs?)
  - SFs? (phonetically diphthongs?)
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  - Interaction with desonorisation?

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Monophthongisation  
**Sonority of /n/**  
Other (smaller) things

# *Sonority of /n/*

*Desonorisation*

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j	j.l	j.d
r	r.l	r.d
l	l.d	l.d
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### Theory:

If desonorisation is due to above constraint, then suffix-initial(?) /n/ has the sonority of a glide.

# Sonority of /n/

## Desonorisation

- Exception: /r.l/ → [r.l], [r.d]
- [r.d]:
  - /bar+LIK/ → [bardwq] ‘all’,
  - /ur+LA/ → [urda] ‘sing’,
  - /byr+LA/ → [byrdœ] ‘form buds’,
  - /tor+LA/ → [tordo] ‘darn, mend’
- [r.l]:
  - /ur+LAr/ → [urlar] ‘songs’,
  - /byr+LAr/ → [byrlœr] ‘buds’,
  - /zar+LAr/ → [zarlar] ‘sorrows’,
  - /tor+LAr/ → [torlor] ‘nets’
- either:
  - /zar+LUU/ → [zardu], [zarluu] ‘sorrowful’

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## *Other (smaller) topics for research*



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- How far through a word vowel harmony spreads

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- How far through a word vowel harmony spreads
- Rounding harmony systems

### *Example (different vowel harmony systems)*

“Standard”: /tuz+DA/ ‘salt.LOC’ → [tuzda]

“Southern”: /tuz+DA/ ‘salt.LOC’ → [tuzdo]

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(What voices when? What devoices when?)

*Example (word-final devoicing, word-initial voicing)*

/tuz/ 'salt' → [dus]

/tuz+DA/ 'salt.LOC' → [dusta]

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  - = excuse to figure out other issues

—Thank you—

Questions, comments, suggestions, etc. are welcome

Sources are available upon request