

Phonological differences in manner alternation between Kazakh and Kyrgyz^{*}

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1. Introduction

Kazakh and Kyrgyz belong to the Kipchak language group of Turkic languages. They have comparable consonant manner alternations. For example, in both languages, /n/ or /l/ in a suffix-initial position alternates to obstruent (/d/ or /t/) when it follows certain consonants, as in (1).

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(1) /n/ and /l/-alternation in Kazakh and Kyrgyz

		Accusative suffix /-nI/ ¹	Plural suffix /-lAr/
Kazakh	kalam “pen”	kalam- <u>duu</u>	kalam- <u>dar</u>
	mektep “school”	mektep- <u>ti</u>	mektep- <u>ter</u>
	cf. tartpa “drawer”	tartpa-nuu	tartpa-lar
Kyrgyz	kalem “pen”	kalem- <u>di</u>	kalem- <u>der</u>
	mektep “school”	mektep- <u>ti</u>	mektep- <u>ter</u>
	cf. tartma “drawer”	tartma-nuu	tartma-lar

(2) Differences in manner alternation between Kazakh and Kyrgyz

	Kazakh	Kyrgyz
On /l/-alteration	<p>/l/ DOES NOT ALTER-NATE in /Rl/.</p> <p>e.g., žer-ler, *-der bazar-luk, *-duuk</p>	<p>/l/ ALTERNATES in /Rl/.</p> <p>(But only in derivational suffixes, and the alternation is optional).</p> <p>e.g., asker-ler, *asker-der zar-luk~duuk</p> <p>/-lAr/: not derivational /-lIk/: derivational</p>
On /n/-alternation	<p>/n/ in root-final /rn/ DOES NOT ALTER-NATE.</p> <p>e.g., /murn/ murn-uum</p>	<p>/n/ in root-final /rn/ ALTERNATES.</p> <p>e.g., /murn/ murd-um</p>

¹ Kazakh and Kyrgyz have vowel harmony. In this paper, we indicate vowels that show vowel harmony as follows: /A/: alternates to /a, e/ in Kazakh and /a, e, o, ö/ in Kyrgyz; /I/: alternates to /u, i/ in Kazakh; and /u, i, u, ü/ in Kyrgyz, /U/: alternates to /u, ü/.

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A study of differences and similarities in manner alternations between Kazakh and Kyrgyz was conducted by Gouskova (2004). She examined only /l/-alternation with one suffix (the plural suffix /-lAr/) but neither other suffixes nor/or /n/-alternation.

Therefore, in this paper, we aim to demonstrate the differences between Kazakh and Kyrgyz while considering wider phonological contexts than Gouskova (2004) did. In short, manner alternation in these two languages differs as in (2).

Before we go to the next section, we should note that we have not investigated with native speakers of Kazakh. The Kazakh data of this paper mainly rely on literature and corpus (<http://web-corpora.net/KazakhCorpus/search/>).

2. Fundamental phonological features

According to Muhamedowa (2016: 276-280) and Kara (2003: 11), Kazakh and Kyrgyz have consonants presented in (3)

(3)²

Manner of articulation	Kazakh	Kyrgyz
G(lide)	w, j	j
R(hotic)	r	r
L(ateral)	l	l
N(asal)	m, n, ŋ	m, n, ŋ
D (Voiced obstruent)	b, d, g, z, ž	b, d, g, z, dž
T (Voiceless obstruent)	p, t, k, s, š	p, t, k, s, š, č

² In (3), we omitted phonemes that occur only in loanwords.

In both languages, adjacent obstruents show progressive assimilation of [-voiced]. If a voiced obstruent follows a voiceless obstruent, it alternates to voiceless (D→T/T_). Therefore, if /n/ and /l/ alternate to obstruent, they are subject to this assimilation rule (see *mektep-ti* and *mektep-ter* in (1).)

3. /l/-alternation

3.1. /l/-alternation in Kazakh

As in Gouskova (2004: 233)’s data, /l/ alternates to /d/ (or /t/) when it follows L, N, D, or T and does not alternate when it follows G and R in Kazakh. All other previous studies have the same description about this alternation (Davis 1998: 191, Batayeva 2012: 33, 163-164, 224, Nakajima 2013: 11, 45, Muhamedowa 2016: 285). Table (4) shows the data from the literature.

(4) /l/-alternation in Kazakh; Alternation does not occur in shaded cells.

Stem ends in:	e.g., /-lAr/	Gloss of stem	e.g., /-llk/	Gloss of stem
G	ūj-ler	“house”	žaw-luk	“enemy” ³
R	žer-ler	“land”	bazar-luk	“bazaar”
L	kol-dar	“hand”	bel-dik	“waist”
N	öleŋ-der	“poem”	keden-dik	“customs”
D	kuuz-dar	“girl”	söz-dik	“word”
T	it-ter	“dog”	žaš-tuk	“young”
cf. V(owel)	bala-lar	“child”	eki-lik	“two”

/-lAr/ is a plural suffix. /-llk/ is a derivational suffix and it attaches to nouns to derive nouns or adjectives (e.g., *bel-dik* “belt”, *söz-dik* “dictionary”, *keden-*

³ For the stem *žaw*, we glossed it as “enemy” with following Muhamedowa (2016: 266). However, it maybe derived from a verb stem /žaw/ “to rain”, since *žaw-luk* means “headscarf.”

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dik “for customs”). According to our review of the literature, Kazakh has other /l/-initial suffixes (adjectival suffix, e.g., /-lI/) that show the same alternation with /-lAr/ and /-lIk/.

3.2. /l/-alternation in Kyrgyz

Also in Kyrgyz, /l/ alternates to obstruent when it follows L, N, D, or T as shown in (5). For these phonological contexts (i.e., /Ll/, /Nl/, /Dl/, and /Tl/), we observe a consensus in the literature (Hebert and Poppe 1964: 18, Kasymova et. al. 1991: 101, Landmann 2011: 5, Kara 2008: 15, Zhu 2018: 469-470, Kirchner 1998: 346). However, we do not observe a consensus regarding /Gl/ and /Rl/, to which we added “?” in (5). Especially for /Rl/, there are considerable differences in the descriptions in the literature, as in (6).

The data of Gouskova (2004) were based on the data from Hebert and Poppe (1964: 18) and Kasymova et al. (1991: 101), who have described that /l/ alternates when it follows a voiced consonant including /r/. Based on that description, Gouskova (2004) argues that the presence or absence of /l/-alternation in /Rl/ is one of the differences between Kazakh and Kyrgyz. In other words, /l/-alternation in /Rl/ is present in Kyrgyz but not in Kazakh (see *žer-ler* and *bazar-luk* in (4)). However, descriptions of the Kyrgyz /Rl/ sequence differ greatly, as in (6). Clarification of the /l/-alternation in the Kyrgyz /Rl/ sequence is necessary. In this paper, we focus on this /Rl/ sequence and leave the /Gl/ sequence as a topic for further research.

(5) /l/-alternation in Kyrgyz; data from our investigation

Stem ends in:	e.g., /-lAr/	Gloss of stem	e.g., /-lIk/	Gloss of stem
<u>G</u>	?		?	
<u>R</u>	?		?	
L	rol-dor	“role”	el-dik	“nation”
N	mugalim-der	“teacher”	teŋ-dik	“equal”
D	köz-dör	“eye”	söz-dük	“word”
T	konok-tor	“guest”	džaš-tuk	“young”
cf. V	too-lor	“mountain”	ene-lik	“mother”

(6) Descriptions in literature of /l/-alternation in /Rl/^{4,5}

Study	Descriptions
Hebert and Poppe (1964: 18), Kasymova et. al. (1991: 101)	Only mentions to /-lAr/. /l/ ALTERNATES to /d/ when it follows a voiced consonant. Note: <i>Voiced consonant</i> in this case seems to include /r/ because no explanatory notes about it are provided.
Landmann (2011: 5)	Only mentions to /-lAr/. /l/ DOES NOT ALTERNATE to /d/ when it follows /r/.
Kara (2008: 15)	/l/ of /-lAr/ DOES NOT ALTERNATE , but that of other suffixes ALTERNATES .
Zhu (2018: 469-470)	Depends on suffix type. /l/ of /-lAr/: DOES NOT ALTERNATE . /l/ of /-lIk/: ALTERNATES . /l/ of /-lA/: Depends on the stem. Alternated and non-alternated forms are attested.
Kirchner (1998: 346)	/l/ ALTERNATES to /d/ after voiced consonants. However, /l/ is sometimes preferred after /r/.

Specifically, we target the five /l/-initial suffixes in (7).

⁴ One may argue that these differences were caused by targeting different dialects in the literature. However, we consider these studies to be intended to investigate common standard Kyrgyz, because all of them, other than Zhu (2018), also mention orthography. Therefore, dialectal differences are an unlikely cause of these differences.

⁵ For the /Gl/ sequence, Hebert and Poppe (1964: 18), Kasymova et. al. (1991: 101), Landmann (2011: 5), and Kirchner (1998: 346) have provided the same description as they did for /Rl/. Kara (2008: 15) and Zhu (2018: 469-470) argued that /l/ does not alternate in the /Gl/ sequence.

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(7)⁶

a. /-lAɣ/: Affixed to nouns to form nouns denoting possessors of a shared attribute.

e.g., sanaa “thought” → sanaa-laj “sympathizer”

ajul “village” → ajul-daj “fellow villager”

b. /-lik/: Affixed to nouns to form nouns or adjectives.

e.g., ene “mother” → ene-lik “motherhood”

akim “administrator” → akim-dik “administrative”

c. /-luu/: Affixed to nouns to form adjectives.

e.g., baa “value” → baa-luu “valuable”

džulduz “star” → džulduz-duu “starry”

d. /-la/: Affixed to nouns to form verb stems.

e.g., džaza “penalty” → džaza-la “punish”

ak “white” → ak-ta “whiten”

e. /-lAr/: Plural suffix

The suffixes in (7) are derivational except for the plural suffix /-lAr/in (7e), which is inflectional.

In this investigation, we extracted 70 stems end in /r/ from Krippes (1998)’s dictionary. Next, we asked four native speakers whether the suffixes in (7) can be attached to stems, and if so, whether /l/ alternates.

(8) Native speakers’ information⁷

1. Female, born in 1978, from Naryn. (Second author).

2. Male, born in 1986, from Naryn.

3. Male, born in 1981, from Naryn.

4. Female, born in 1949, from Bishkek.

⁶ As with the case of /-lAr/, /l/ in (7a-d) alternates to /d/ when it follows L, N, D, or T.

⁷ They are all from the northern area of Kyrgyz, and according to Shogaito (1988: 1417), the standard Kyrgyz is based on the northern dialects.

The result can be summarized as in (9a, b).

(9)

a. /l/ of /lAr/ does not alternate in /Rl/, and the alternated form is ungrammatical.

e.g., ʃaar “city”	ʃaar-lar, *ʃaar-dar
asker “military”	asker-ler, *asker-der
tor “net”	tor-lor, *tor-dor
ömür “life”	ömür-lör, *ömür-dör

b. /l/ of derivational suffixes alternates to /d/ in /Rl/. However, some stems do not show alternation, other stems allow both the alternated and non-alternated forms, and there seems to be no regularity among and within native speakers, as shown in (i) and (ii) below.

e.g.,

(i) No regularity among native speakers: The occurrence of alternation depends on speakers.

/asker-lik/ “military”

Native speaker 1: /asker-**d**ik/

Native speaker 2, 3: /asker-**l**ik/

/kabar-luu/ “having news”

Native speaker 1, 2: /kabar-**l**uu/

Native speaker 3, 4: /kabar-**d**uu/

(ii) No regularity within native speakers: The occurrence of alternation depends on the suffixes.

Native speaker 1 /zar/ “grief” /zar-**l**uuk/, /zar-**d**uu/

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Native speaker 2 /ömür/ “life” /ömür-**dük**/, /ömür-lüü/
 Native speaker 3 /uuzgaar/ “frost” /uuzgaar-luu/, /uuzgaar-**da**/
 Native speaker 4 /sabuur/ “patient” /sabuur-luuk/, /sabuur-**da**-n/⁸

Furthermore, even regarding the non-alternated stems in (9b), native speakers have commented that alternated forms can be allowed and that they are not so ungrammatical. Based on the result in (9b) and this comment, our interpretation is that /l/-alternation in derivational suffixes is optional. In summary, /l/-alternation in the Kyrgyz /Rl/ sequence can be summarized as follows:

- (10) Phonological rule $l \rightarrow d/r_$ is optionally applied only to derivational suffixes and never applied to inflectional suffix /-lAr/.

The presence of this optional rule is the difference between Kazakh and Kyrgyz. As we saw in (4), /l/ does not alternate in the Kazakh /Rl/ sequence. The table below shows our argument about the difference between Kazakh and Kyrgyz /l/-alternation with comparing that of Gouskova (2004).

(11)

This paper

Ka-zakh	/l/ does not alternate in /Rl/.
Kyrgyz	<u>/l/ of derivational suffix alternates optionally in /Rl/.</u>

⁸ /n/ in /sabuur-da-n/ is a reflexive morpheme.

Gouskova (2004)

Ka-zakh	/l/ does not alternate in /Rl/.
Kyrgyz	<u>/l/ alternates in /Rl/.</u>

In the next section, we discuss /n/-alternation.

4. /n/-alternation

4.1. /n/-alternation in Kyrgyz

For convenience, we start with Kyrgyz. As the literature has asserted, suffix-initial /n/ alternates to obstruent when it follows a consonant, as in (12) (Hebert and Poppe 1964: 11, Kasymova et. al. 1991: 42, Landmann 2011: 4, Kara 2008: 15, Zhu 2018: 469-470, Kirchner 1998: 346).

(12) /n/-alternation in Kyrgyz (Data from Hebert and Poppe 1964: 11 and Zhu 2018: 469)

Stem ends in	e.g., ACC /-nI/	Gloss of stem
G	aj- du	“moon”
R	kar- du	“snow”
L	bal- du	“honey”
N	dan- du	“piece”
D	kwz- du	“girl”
T	at- tu	“horse”
cf. V	bala-nu	“child”

Furthermore, Zhu (2018: 469) described that /n/ alternates also in the root-final position.

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(13)

Stem	i. Bare	ii. 3 rd person possessive
a. /karn/ “stomach”	kar <u>un</u>	<u>kard-un</u> (alternates)
b. /mojn/ “neck”	mojun	mojn-u (not alternate)

Kyrgyz has certain $/(C)VC_{[+son]}C_{[+son]}/$ roots that end in a sonorant consonant cluster. That consonant cluster is preserved when it is followed by vowels; otherwise, it undergoes a high-vowel insertion (see column i. in (13))⁹. Zhu (2018: 469) described that when the consonant cluster is preserved, /n/ alternates to /d/ in /rn/, but not in /jn/ (see column ii. in (13)).

In summary, Kyrgyz /n/-alternation has two features, as in (14), and our data from native speakers also shows these alternations. Examples of root-final alternation from our data are in (15).

(14)

- a. Suffix-initial /n/ alternates to /d/ when it follows a consonant (n → d/C-).
- b. Root-final /n/ alternates to /d/ in /rn/ (n → d/r _{root}).

(15) Root-final /n/ alternates to /d/ in /rn/.

Stem	i. Bare	ii. 1 st singular possessive
a. /murn/ “nose”	murun	murd-um (alternates)
/ern/ “lip”	erin	erd-im (alternates)
b. /mojn/ “neck”	mojun	mojn-um (not alternate)

2.2. /n/-alternation in Kazakh

The suffix-initial /n/ alternates to obstruent also in Kazakh when it follows a consonant (Davis 1998: 206, Batayeva 2012: 144, 225, Nakajima 2013: 11,

⁹ As far as we investigate, some speakers allow a form which keeps inserted vowel although it is followed by vowels (e.g., /mojn-un ~ mojun-um/).

45, Muhamedowa 2016: 285)¹⁰. Thus, regarding this point, both languages have the same alternation.

(16) /n/-alternation in Kazakh (Data from Davis 1998, Nakajima 2013: 206)¹¹

Stem ends in	e.g., Accusative /-nI/	Gloss of stem
G	maŋdaj- du	“forehead”
R	ülkender- di	“elderly people”
L	kol- du	“hand”
N	dostarum- du	“my friends”
D	köz- di	“eye”
T	sabak- tu	“lesson”
cf. V	ata- nu	“father”

By contrast, root-final /n/-alternation in the two languages differs. Nakajima (2013: 12) presented the cognates of (15), and in that data, we observe that root-final /n/ alternates neither in /rn/ nor /jn/ in Kazakh.

(17)

Stem	i. Bare	ii. 1 st singular possessive
a. /murn/ “nose”	murun	murn-um (not alternate)
/ern/ “lip”	erin	ern-im (not alternate)
b. /mojn/ “neck”	mojun	mojn-um (not alternate)

¹⁰ Notably, if a suffix has a nasal in its coda position, onset /n/ of that suffix holds nasality when it follows a nasal (e.g., genitive suffix /-nIŋ/: tis-im-**niŋ**, *tis-im-**diŋ** “of my teeth”). This retention of nasality is not observed in Kyrgyz (e.g., tiŋ-im-**din**, *tiŋ-im-**nin** “of my teeth”); hence, this is an extra difference between these two languages.

¹¹ More precisely, *ülkender-di* and *dostarum-du* have morpheme boundaries as follows: *ülken-der-di* and *dos-tar-um-du*.

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Therefore, the presence or absence of /n/-alternation in root-final /rn/ is the difference between these two languages; /n/ in root-final /rn/ does not alternate in Kazakh but alternates in Kyrgyz.

(18)

	Root final /jn/	<u>Root final /rn/</u>	suffix initial /n/
Kazakh	N/A	<u>N/A</u>	✓
Kyrgyz	N/A	<u>✓</u>	✓

N/A: Does not alternate. ✓ : alternates.

5. Summary

In this paper, we investigated manner alternation in Kazakh and Kyrgyz and showed the differences between them while considering wider phonological contexts than Gouskova (2004) did. Our conclusion is summarized in (19).

In further research, we plan to investigate the /Gl/ sequence and other Turkic languages and reinterpret these phonological differences within a theoretical framework to observe which language patterns are possible or impossible. For example, if we analyze the difference in /n/-alternation with Optimality theory, which analyzes phonological alternation with based on constraint hierarchy (Prince and Smolensky 1993), we can assume the hierarchies in (20) for each of the two languages, and the difference between the two languages is reduced to the difference in the position of Ident-root.

(19) = (2) Differences in manner alternation between Kazakh and Kyrgyz

	Kazakh	Kyrgyz
On /l/-alteration	<p>/l/ DOES NOT ALTERNATE in /Rl/.</p> <p>e.g., žer-ler, *-der bazar-luk, *-duk</p>	<p>/l/ ALTERNATES in /Rl/.</p> <p>(But only in derivational suffixes, and the alternation is optional).</p> <p>e.g., asker-ler, *asker-der zar-luk~duk</p> <p>/-lAr/: not derivational /-lIk/: derivational</p>
On /n/-alternation	<p>/n/ in root-final /rn/ DOES NOT ALTERNATE.</p> <p>e.g., /murn/ murn-um</p>	<p>/n/ in root-final /rn/ ALTERNATES.</p> <p>e.g., /murn/ murd-um</p>

(20)

Constraints

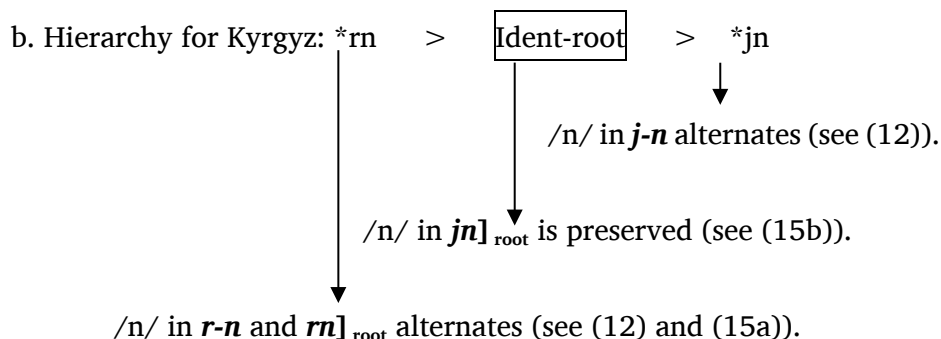
Ident-root: bans root-internal phonological alternation

*rn: bans /rn/ sequence to appear in phonetic form.

*jn: bans /jn/ sequence to appear in phonetic form.

- a. Hierarchy for Kazakh: Ident-root > *rn > *jn
-
- /n/ in **r-n** and **j-n** alternates (see (16)).
- /n/ in **jn]**_{root} and **rn]**_{root} is preserved (see (17)).

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If the hierarchy *rn > *jn holds in all Turkic languages, we can predict that phonological patterns that allow root-internal /rn/ while banning that of /jn/ is an impossible pattern for Turkic languages because such language would have *jn > Ident-root > *rn hierarchy.

Seeking these (im)possible phonological patterns for certain language groups would lead us to find cross-linguistic features. Therefore, further research is necessary.

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ABSTRACT

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A study of differences and similarities in manner alternations between Kazakh and Kyrgyz was conducted by Gouskova (2004). She examined only /l/-alternation with one suffix (the plural suffix /-lAr/) but neither other suffixes nor /n/-alternation.

Therefore, we aim to show the differences between Kazakh and Kyrgyz while considering wider phonological contexts than Gouskova (2004) did. In short, the table in the next page presents the differences in manner alternation in these two languages.

The table in the next page shows that a phonological rule $R_l \rightarrow R_d$ does not exist in Kazakh but does exist in Kyrgyz and is applied optionally in derivational suffixes. Likewise, a phonological rule $r_n \rightarrow r_d]_{\text{root}}$ does not exist in Kazakh but does in Kyrgyz. We conclude that these differences are the differences between Kazakh and Kyrgyz manner alternation.

	Kazakh	Kyrgyz
On /l/-alteration	<p>/l/ DOES NOT ALTER-NATE in /Rl/.</p> <p>e.g., žer-ler, *-der bazar-luk, *-duk</p>	<p>/l/ ALTERNATES in /Rl/.</p> <p>(But only in derivational suffixes, and the alternation is optional).</p> <p>e.g., asker-ler, *asker-der zar-luk~duk</p> <p>/-lAr/: not derivational /-lIk/: derivational</p>
On /n/-alternation	<p>/n/ in root-final /rn/ DOES NOT ALTER-NATE.</p> <p>e.g., /murn/ murn-um</p>	<p>/n/ in root-final /rn/ ALTERNATES.</p> <p>e.g., /murn/ murd-um</p>