







Long vowels in Kyrgyz language: Characteristics and evolutionary steps

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APA Citation:

Yishake, C., Maituohuo, M., Abdu, H.I., Tsakuwa, M.B. (2021). Long vowels in Kyrgyz language: Characteristics and evolutionary steps. *Journal of Language and Linguistic Studies*, 18(1), 294-308. Doi: 10.52462/jlls.182

Submission Date:02/03/2021

Acceptance Date:07/09/2021

Abstract

The historical relationships had by Kyrgyz people with various societies/tribes in Africa, Asia, and Europe resulted in evolutionary and revolutionary changes generally in their language vowel structures and pronunciations. The general Turkic writing style, Persio-Arabic writing styles as well as Cyrillic and Latin writing styles, coupled with influences of loanwords from Russia, Mongolian, Kazakh, and Uzbek, among other languages have a long time of manifestation in the Kyrgyz vowels. The Kyrgyz language has both short and long vowels. All of the long vowels can appear at any word position except “üü” which does not appear at the beginning of words. Some long vowels originated from the evolution/revolution of the consonants and vowels inherently in the language, some are results of prolonged pronunciation of short vowels, some happened because conjugation are realized from the localized phonetic transformation of the borrowed words and phonetic structure in rhymes. This paper discusses these issues to linguistically document and reveals the evolutionary and revolutionary movements had by the Kyrgyz language with respect to the long vowels. The paper hopes that the data presented below could be of significance, not only in historical linguistics, but also in sociolinguistics, and general linguistics.

Keywords: Kyrgyz; Language; Long vowels; Characteristics; Evolutionary Steps

1. Introduction

Kyrgyz (also spelt as Kirgiz, Kyrgiz, Kirghiz, or kyrghyz) is a family member of Turkic languages, and it is spoken in Central Asia by about 5 million speakers. Other family members of the Turkic language are Turkish, Turkmen, Kazakh, Uzbek, and Azerbaijani. The language shares many things in common with these languages in the aspects of phonology, morphology, and syntax. According to Yiner, Kurt, Kulamshae, and Zafer (2016:1), in Kyrgyz language words are formed by derivational and inflectional morphemes to the root word. Therefore, “morphophonemic processes occur during these affixations in which a set of orthographic rules define the modifications to affixes when realizing the surface forms of words.” And the language is written in Cyrillic alphabet, Latin alphabet and Arabic alphabet among others.

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Kirgiz vowel's pronunciation is not controlled by airflow obstruction but by the duration of the sound, which can be long or short. The long and short vowels can be differentiated based on their phonetic lengths and meanings. Both types of vowels have specific meanings and characteristics, which are very important in Kirgiz language. Short vowels are commonly used in the language. Long vowels are of two types. These are original or natural long vowels, (the primary long vowels) and derived long vowels (the secondary long vowels).

There are very scanty investigations on Kirgiz language grammar, vocabulary and pronunciation, especially on the evolution of long vowels in the Kirgiz language from the perspective of historical-comparative linguistics (Tenisev, 2014). This paper, therefore, explores new issues, and it aims at presenting some fresh insights about the characteristics and evolutionary movements of the long vowels. In the past, scholars and researchers generally believed that there were only secondary long vowels in the language because there was little research on the source, specificity, and distribution of the long vowels, and there was no detailed classification of the long vowels. However, various linguistic evidence shows that the traditional practice of classifying the long vowels of Kirgiz as secondary long vowels do not completely conform to the facts of the language, and the long vowels of the language are secondary as the result of historical experiences. Kirgiz long vowels can appear in any word position in the language. But, the long vowel “üü” does not appear at the beginning of words and its frequency in the Kirgiz language is also very low. Factors involved in the evolution and revolution of Kirgiz long vowels include the change of consonants in the language; prolonged pronunciation of Kirgiz short vowels, conjugations attachment, the transformation of borrowed word vowels and the phonetic structure in rhyme among others. Kirgiz language has eight basic short vowels which are a, o, u, i, e, ü, i, and ø., and six of these vowels a, o, u, e, ü, and ø have corresponding long vowels which are aa, oo, uu, ee, üü, and øø.

2. Characteristics of Long Vowels in Kirgiz Language

The long vowels of Kirgiz are represented by overlapping identical letters like aa, oo, uu, ee, üü, and øø. The pronunciation of the long vowels is the same as their corresponding short vowels; the only difference they have lies in the phonetic lengths. According to some Kirgiz language experts, the average length of long vowels in Kirgiz is 686.2 m/sec and the average length of short vowels is 285.9 m/sec. It shows that the length of long vowels in Kirgiz is two times longer than short vowels (Washington, 2006). In addition to the vowel's length, long vowels and short vowels also have a certain degree of difference in the muscle contraction and vibration of the articulatory organs (Sherova, 2017). Some scholars' researches show spectral differences between long and short vowels, as well as the interaction of vowel duration with stress, syllable position in word and other factors that often correlate with vowel duration, include voicing of the consonant, and presence in an open or closed syllable (Washington, 2019).

One of the apparent characteristics of the long vowels in the Kirgiz language is their positioning and distribution in the language vowel chart as can be seen below:

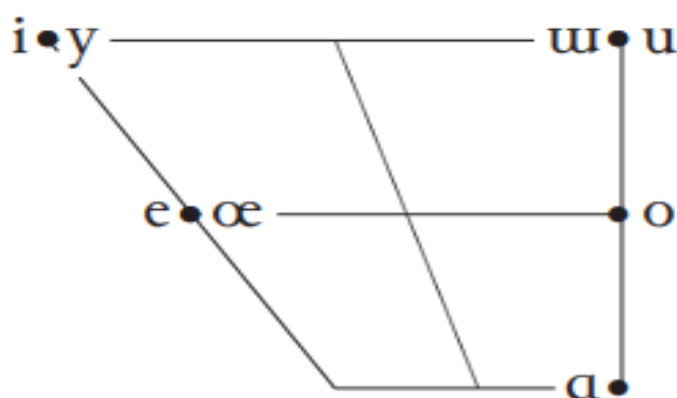


Figure 1. Traditional Kirgiz Vowel Inventory, Source: (Washington, 2006).

Going by the vowel chart, aa[a:] in Kirgiz is a back, open, long vowel with extended lips. It is equivalent to the IPA* [ɑ:], and it can appear in any word position. Some examples are given below:

Beginning of word: aarī (bee), aalam (the universe), aarʃī (rub), aalīm (scientist).

Middle of word: saat (clock), taar (cotton bag), dʒaaq (cheeks), qaar (anger), ʃaar (city)

End of word: baa (price), talaa (wilderness), araa (saw), dʒaa (bow), saa (milk squeezing/milking)

In Kirgiz, oo[o:] is back, open, long round vowels, and it is equivalent to the IPA [o:]. It can appear in any position of the word. As seen below:

Beginning of the word: oor (heavy), ooz (mouth), ooba (yes), ooru (disease), oofu (replacement)

Middle of the word: tooq (chicken), qoon (melon), dʒoon (thick), dʒooluq (turban), qooz (beautiful)

End of the word: dʒoo (enemy), too (mountain), qīroo (frost), qoroo (yard), muzoo (calf)

In the language, uu[u:] is a back, high, and round-lip long vowel, which is equivalent to IPA [u:]. It can appear in any position of a word as in the following examples:

Beginning of the word: uu (poison), uul (boy), uurt (corner of the mouth), uuq (yellow pole), uuz (colostrum)

Middle of the word: suuq (cold), tuura (right), buura (male camel), suur (marmot), dʒuurqan (quilt)

End of the word: suluu (beautiful), dʒīluu (warm), tuu (flag), buu (viper), dʒuu (wash)

In Kirgiz language, üü[ü:] is the front, high, and round-lip long vowel, that is equivalent to the IPA [ü:], and it mostly appears at the end of word, and in middle of word in rare occasion as in the following examples:

Middle of word: dʒüün (acupoint), dʒüülüt- (confusion), dʒüürt (sit cross-legged), düülügüü (excited), düüldø (onomatopoeia/analogous), küügüm (dusk), küülü (vigorous)

End of word: küü (tune), elüü (fifty), belgilüü (famous), dʒügөрüü (corn), kønügüü (practice)

In Kirgiz, øø[ø:] is a front, half-high, round-lip long vowel. It is equivalent to the IPA [ø:], can appear in any position of word as in the following examples:

Beginning of the word: øøn (fault), øøp- (kiss), øøz (the opposite bank of the river), øøk (chest and abdomen), zøøk (horn)

* IPA is International Phonetic Alphabet

Middle of word: møør (seal), søømøy (index finger), ørøøn (region), søøk (bones), køøn (mind)

End of word: tøø (camel), dʒøø (walking), køø (ash), møø (cow's sound), küyøø (husband)

In Kirgiz, ee[e:] is a front, half-high, long lip-extension vowel, and it is equivalent to IPA [e:]. It can appear at any word position.

Beginning of word: eer (saddle), eek (chin), een (remote/desolate), eele (possession), eerfi (follow)

Middle of the word: meeley (glove), dʒeen (nephew), teek (a part of animal catching tool/plate), dʒeek (riverside), meer (kindness)

End of the word: bee (mare), mee (brain), kee (some), tee (that), dʒee (modular particle, good, enough).

Among all of these long vowels, only üü does not appear at the beginning of words, and it has a very low occurrence in the middle of words (Caifuding, 2019).

Another characteristics of Kirgiz long vowels is their semantic connotation. This is because, the long vowels of Kirgiz are derived from other phonetic forms, and their distinctive meaning is their main distinguishing feature, (Nurshat, 2007) as can be seen in the following examples:

or- (cut) - oor (heavy); dʒon (back) - dʒoon (thick); en (width) - een (desolate); mal (livestock) - maal (time); san (number/thigh) — saan (dairy cow); dʒan (life)—dʒaan (rain); toq (full)—tooq (chicken); dʒaq (direction)—dʒaaq (cheek); tar (narrow)—taar (cloth bag); søk-(curse)—søøk (bones).

However, there are some unclear meanings of long and short corresponding words. The long and short vowels coexist and often appear in the change of speech flow. For example: bülø—büløø (family); burʃaq—buurʃaq (knot tied to a lamb); dala—dalaa (in the wild); kōpürø—kōpürøø (bridge); daba—dabaa (cure); künø—künøø (sin/evil); denʒel—denʒeel (level). These long vowels don't have the nature of phonemes, so they cannot distinguish words.

2.1. Primary Long Vowel and Secondary Long Vowel Classification in Kirgiz

Basically, the Kirgiz language could be argued to have primary long vowel and secondary long vowel classification. Though, some scholars do contend that all the Kirgiz language long vowels are secondary long vowels. However, the point here is primary long vowels are considered as the long vowels that have not undergone any process of change in the language. The primary long vowels are used naturally as they are. Linguists, like Ahmatov, state that primary long vowels are in some dialects of Kyrgyz (Ahmatov, 1978). Talat believes that the long vowels such as aarī (bee), aarʃi- (rub), baarī (all), ılaaʃin (harrier eagle), taanī- (known), taarīn (complaint) and dʒuu-(wash) are all primary long vowels in Kirgiz (Talat, 1995). Alimova compared Yakut, Turkmen, and Haraj dialects with historical dialectal changes and conclude that the original vowel elongated pronunciation in the Kyrgyz written language has remained unchanged (Alimova, 2007).

Çengel compared the long vowels in the Kirgiz language with the long vowel system in the “Divan lugat at-Turk (DLT)” and points out many similarities and differences. According to Çengel, the few long vowels of DLT correspond to the long vowels in Kirgiz, and some of the long vowels in the DLT correspond to short vowels in Kirgiz. For example, in DLT, the *ōt* > Kirgiz (*ot*), DLT *āt* > Kirgiz (*at*), DLT *ūt* > Kirgiz (*üt*), DLT *ōz* > Kirgiz (*øz*), DLT *bīl* > Kirgiz (*bil*), DLT *būz* > Kirgiz (*muz*). He believes that the similarities between the long vowels of DLT and Kirgiz need further study, such as: in DLT *bār* > Kirgiz *baar* (all), DLT *yā* > Kirgiz *dʒaa* (bow), DLT *u:γ* > Kirgiz *uuq* (room pole), DLT *a:r* > Kirgiz *aarī* (tired) (Çengel, 2005).

Moreover, a Kyrgyz linguist, Mukambaev (1972) said in the *Dictionary of Kyrgyz Dialects* that a large number of long vowels have remained in use in the language which are from Batkan-Lelek

Oblast region of Kirgizistan and Jergetal region of Tajikistan. For example, bøørü (wolf), qaarī (old), aaŋ (hungry), eeri (melting), teeri (skin), aarī (bee), džeeri (unknown), uuq (room pole), aarī (tired), etc. After making the comparison, he found that these words were also used in the Yakut and Turkmen languages with primary long vowels. A similar use of words was also found in the Tuva language, Tatar- Mashaer, and Uzbek Karabulak dialect (Mukambaev, 1972). Some scholars believe that the traces of long vowels in Kirgiz are also retained in the names of some people. For example, džeerindi ŷüküraliewa (Жееринди Шүкүралиева, a resident name of Bajayier village, Kirov District, Kyrgyzstan) and oorun (a resident name of Jangi Jol village, Jangi jol District, Kyrgyzstan), etc (Sh. Japarov, 2013). The people of Akto County in Kizilsu Kirgiz Autonomous Prefecture, China have a limited number of primary long vowel words in their language. For example, aariq(thin), øøruk(apricot), bøørü (wolf), teeri (skin), aarī (bee), haari (old), eeri (melting), džeeri (unknown), uuq (room pole), aarī (tired), oot(* well), etc.

As mentioned above, long vowels are generally believed to be secondary long vowels in the Kirgiz language. But, Turkic (Turkmen and Yakut) dialects are of exception. In comparison, the secondary long vowels are long vowels that have undergone some changes. They are not like the primary long vowels which are somehow in their original form. Any phonetic changes in the Kirgiz language lead to long vowels, and cause the phonetic sounds before and after them to be adjusted or merged to produce long vowels, or the disappeared phoneme has appeared in the form of vowels. For example: ayız> ooz (mouth), oŷul> uul (son), küdegü>küyøø (husband), tirig> tirüü (alive), etc. Vowel's evolution trajectory can also be observed through the historical comparison of Kirgiz with other languages. For example, in the ancient period, tay (mountain) in the Kazakh language became taw (mountain) in the Kirgiz language, and then too (mountain), and also, küdegü (husband) in the Kazakh language became küyøw (husband) in the Kirgiz language, and then küyøø (husband). Here the ending phonetically has changed to be -ŷ>-w>-o and -egü>-øw>-øø respectively.

2.2. Evolutionary Changes of Kirgiz Vowels in Formation of Secondary Long Vowels

The formation of some secondary long vowels can be traced to the historical development and evolution of the Kirgiz language, which is closely related to the historical phonetic changes of the language. Table 1 below presents such evolutionary changes, the vowels in other languages, in Kirgiz and some examples in words.

Table 1. The historical phonetic changes to form second long vowels

Long vowels	Evolutionary changes	In other languages		In Kirgiz language	Word Meaning
		Language	Examples		
“aa”	(i) -aŷa-, -aŷī->-aa-	OTL	tayar	taar	Cotton bag
		OTL	saŷim	saam	Animal's milk squeezing intervals
	(ii) -aŷa-, -aŷī->-aa-	OTL Kazakh	yaŷaq maŷira	dŷaaq maara	Cheek Sheep's sound
“ee”	(i) -ege->-ee-	OTL	yegen	dŷeen	Nephew
		OTL	ege	ee	Owner
	(ii) ede->eye->-ee-	OTL	eder	eger/ eer	Saddle
		Kazakh/ Karakalpak/Uzbek Khakas Altay	biye pii bee	bee bee	Sheep's sound Mare

* The examples here come from language materials collected by the author from Kirgiz people.

	(iii) eŋe-, -eŋi>ee-, -ee	OTL	eŋek	eek	Chin
		OTL	māŋi	mee	Brain
“oo”	(i) ayī-, -ayī-, -ayī>oo-, -oo-, -oo	OTL	ayır	oor	Heavy
		OTL	ayız	ooz	Mouth
		OTL	bayır	boor	Liver
		OTL	yayır	đoor	Abrasions on the back of horse/donkey
	(ii) oya-, -oyu-, -ayu> -oo	OTL	buzayu	muzoo	Calf
		OTL	taqayu	tooq	Chicken
		OTL	qayun	qoon	Melon
		OTL	yoyun	đoon	Fat/stout
		OTL	boyaz	booz	Pregnant
	(iii) ay-, -ay-, -ay>oo-, -oo-, -oo	OTL	bay	boo	Belt
		OTL	say	soo	Healthy
		OTL	ay-	oo-	Bias
		OTL	aylaq	oolaq	Avoid
		OTL	sayır	soor	Buttocks
“uu”	(i) -ayu-, -iy> -uu-	OTL	yayıq	đuuq	Nearby
		OTL	ayu	uu	Poison
		OTL	qatıy	qatuu	Hard
		OTL	ılıy	ıluu	Warm
		OTL	qoyuy	qoyuu	Dense
	(ii) oyu-, -oyu-, -uyu-> uu-, -uu-	OTL	oıul	uul	Son
		OTL	soyuq	suuq	Cold
		OTL	boyuzla-	muuzda-	Slaughter
	(iii) -uy-, -uy >-uu-, -uu-	OTL	buyday	buuday	Wheat
			buyra	buura	Bull/camel
	(iv) oı-, -oı-, -oı>-uu-, -uu-, -uu-	OTL	oırı	uuru	Thief
		OTL	toıra	tuura	Correct
		OTL	tuı-	tuu-	To give birth
	(v) Vowel+b>uu	OTL	ab-	uu-	Prey
			sub	suu	Water
“üü”	(i) -ıgü-, -ügü->-üü-	OTL	ügur	Üyür/üür	A group
	(ii) -üñü->-üü-	OTL	müñüz	Müyüz/müüs	Animal’s horn
	(iii) -өг>-üyü->-üü-	OTL	küg	küü	Tunes
		Kazakh	küy	küü	
		OML	sügüsün	şüüfün	Yellowish pink
		MML	şüysün	şüüfün	Yellowish pink
		OML	egede	øødø	High
		MML	øød	đzeeren	Antelope
		Altay	yegren	đzeeren	Antelope
		Kazakh	đzyren	đzeeren	Antelope
	(iv) -ıg-, -üg>-üü	OTL	älig	elüü	Fifty
		OTL	sebüg	süyüü	Love
		OTL	küg	küü	Tune
		OTL	tırig	tırüü	Alive
		OTL	kıfıg	kıfüü	Small
“øø”	(i) -egü>- øø	OTL	biregü	birøø	One
		OTL	ekegü	ekøø	Two
		OTL	küdegü	küyøø	Husband
	(ii) -ada->- øø	OTL	yadaı	đzøø/ đzyyøø	Walking
	(iii) -eŋe-, -eŋü-, -üŋ ->- øø-	OTL	sünjak	søøk	Bones
		OTL	køñül	køøn	Mood

OTL	müŋrā	møøŋø-	Cow's sound
Old Turkic Language = OTL, Old Mongolian Language = OML, and Middle Mongolian Language = MML			

Formation and classification of “aa”

The long vowel “aa” in Kirgiz has two forms and can produce by the changes of γ and η in the words, as follows:

(i) -aya-, -ayī->-aa-

The uvula consonant γ in the -aya-, -ayī- a phonetic group of words in the old Turkic language (OTL) disappears and these two vowels merge to form “aa”.

(ii) -aŋa-, -aŋī->-aa-

The nasal consonant η in the -aŋa-, -aŋī- a phonetic group of words in the OTL disappears and these two vowels merge to form “aa”. The examples of “aa” formation shown in Table 1* Clauson (1972).

Formation and classification of “ee”

The formation sources of “ee” can be divided into two or three forms, as: -

(i) -ege->-ee-

The g in the OTL words can be changed to the “ee”.

(ii) ede->eye->ee-

The d in some words of OTL evolved into y, and then merged with vowels to form “ee”.

(iii) eŋe-, -eŋī>ee-, -ee

The consonant η in some words of OTL became the “ee”. The examples of “ee” formation are shown in Table 1.

Formation and classification of “oo”

The long vowel “oo” in Kirgiz language comes from the evolution of the word γ and can be divided into the following types:-

(i) ayī-, -ayī-, -ayī>oo-, -oo-, -oo

The phonetic group ayī at the beginning and end of words of OTL evolved into the “oo”.

(ii) oya-, -oyu-, -ayu> -oo

The phonetic group oya-, -oyu-, -ayu at the beginning and end of words of OTL evolved into the “oo”.

(iii) ay-, -ay-, -ay>oo-, -oo-, -oo

The phonetic group ay-, -ay-, -ay at the beginning and end of words of OTL evolved into “oo”. The “oo” formation is explained with examples in Table 1.

Formation and classification of “uu”

* The related examples of old Turkic language and Mongolian Language long vowels in this article are from Clauson, G., An etymological dictionary of pre-thirteenth-century Turkish. 1972: Clarendon Press Oxford.

The formation of the “uu” is mainly related to the disappearance of the consonant γ , and can be divided into the following types:-

(i) - $\alpha\gamma$ -, - $\dot{\imath}\gamma$ > -uu-

The γ in the words of OTL becomes the “uu”.

(ii) o γ -, -o γ -, -u γ -> uu-, -uu-

The γ in the words of OTL evolved into the “uu”.

(iii) -u γ -, -u γ >-uu-, -uu-

In the OTL, the γ evolved into the “uu”.

(iv) o γ -, -o γ -, -o γ >-uu-, -uu-, uu-

The γ in the words of OTL evolved into the “uu”.

(v) Vowel+b>uu

The consonant b in the words of OTL evolved into “uu”. Examples of “uu” formation are shown in Table 1.

Formation and classification of “üü”

The long vowel üü in the inherent words of Kirgiz language is produced by the evolution of the consonants g, η , and y. They are as follows:

(i) -igü-, -ügü->-üü-

The g between the two front vowels evolves and merges with the vowel to produce the long vowel üü.

(ii) - $\dot{\imath}\eta$ ü->-üü-

The second syllable consonant η is combined with the vowel to produce the long vowel üü in Kirgiz.

(iii) - \emptyset g>- $\dot{\imath}\gamma$ ü->-üü-

The g in OTL words becomes y, and then merges with the vowel to evolve into the vowel üü.

(iv) -ig-, - $\dot{\imath}\eta$ g>-üü

In OTL, the consonant g at the end of a word is merged with the vowel to produce the long vowel üü in Kirgiz. The formation examples of “üü” are shown in Table 1.

Formation and classification of “øø”

Part of the long vowel øø in Kirgiz language is derived from the combination of the consonants g, d, y, η and vowels of OTL. It can be summarized into the following types:

(i) -egü>- øø

In OTL, the second syllable g was changed to w and then merged with the vowel to evolve into a long vowel øø.

(ii) -ada->- øø

The consonant d in ancient languages first evolved into y and then merged with the vowel to develop into a long vowel øø.

(iii) - $\emptyset\eta$ e-, - $\emptyset\eta$ ü-, - $\dot{\imath}\eta$ ->- øø-

In OTL, the second syllable consonant η merged with the vowel to produce the long vowel $\emptyset\emptyset$. The examples of “ $\emptyset\emptyset$ ” formation are shown in Table 1.

Thus, the long vowels in the original words of Kirgiz have phonemic attributes. They distinguish the meaning of words because they are produced by the combination of different consonants and vowels in the source. Consonants related to the production of long vowels in Kirgiz language inherent words include γ , g , η , y , b , d , etc. In nutshell, long vowels in Kirgiz are the result of the historical evolution of consonants and vowels. Among them, the consonants γ , η , and b are mixed in the articulation of the back long vowels such as aa , oo , uu . And also, g , d , η , and y are included in the production of the front long vowels ee , $\emptyset\emptyset$, and $\ddot{u}\ddot{u}$. This shows that the articulation of long vowels in Kirgiz has a certain degree of mixture between the vowels and consonants. Besides, some long vowels in Kirgiz are borrowed from the Mongolian language, indicating that Kirgiz and Mongolian have had close contact in history.

2.3. Grammatical Formation and Evolution of Kirgiz Long Vowels

Some long vowels in Kirgiz language are formed by phonetic changes that occur when their additional components are concatenated. Such long vowels are relatively obscure and are generally overlooked. These can be seen in the following discussion.

Conjugating additional components of adverbs to produce long vowels

(i) -p-tail verb +-Xp adverb becomes a long vowel

In Kirgiz, the monosyllabic verb ending in -p is affixed with the adverb ending -Xp and the final phonetics becomes a long vowel. For example: $\text{ʃap}+-\text{ip}>\text{ʃaap}$ (run); $\text{tap}+-\text{ip}>\text{taap}$ (find);

$\text{qap}+-\text{ip}>\text{qaap}$ (bite); $\text{dʒap}+-\text{ip}>\text{dʒaap}$ (cover); $\text{tep}+-\text{ip}>\text{teep}$ (kick); $\text{sep}+-\text{ip}>\text{seep}$ (sprinkle); $\text{køp}+-\text{ip}>\text{køøp}$ (swelling); $\text{øp}+-\text{ip}>\text{øøp}$ (kiss); $\text{qop}+-\text{ip}>\text{qoøp}$ (get up).

(ii) -m-tail verb +-Xp adverb becomes a long vowel

If monosyllabic verbs ending in -m are affixed with adverb endings -Xp and the final phonetics becomes a long vowel. For example: $\text{tam}+-\text{ip}>\text{taamp}$ (leak); $\text{em}+-\text{ip}>\text{eemp}$ (nursing); $\text{køm}+-\text{ip}>\text{køømp}$ (bury); $\text{dʒum}+-\text{ip}>\text{dʒuump}$ (close). The m at the end of a monosyllabic verb and the vowel in the additional component are transposed to a long vowel.

Table 2. The examples of Grammatical formation and evolution of long vowels

Speech part	In other languages		In Kirgiz language	Meaning
	Language	Examples		
Collective numerals	OTL	birägü	birøø	One
	OTL	äkigü	ekøø	Two
	OTL	üʃägü	üʃøø	Three
	OTL	altayu	altoo	Six
Adjectives	OTL	atliy	attuu	Horse riding
	OTL	yalinliy	dʒalinduu	Passion
	OTL	kädimlig	kiyimdüü	Clothing
	OTL	qatiy	qatuu	Hard
	OTL	qiziy	qizuu	Hot
Gerunds	OTL	qijlay	qijʃtoo	Rural
	OTL	yüläg	dʒøʃøø	Lift up
	OTL	oqiyu	oquu	Read

	OTL	arıy	aruu	Clean
	OTL	qure	quruu	Dry
	OTL	bilgü	bilüü	To know
	OTL	baryu	baruu	Go
	OTL	kätfıg	kefıüü	Crossing point
	OTL	yaylay	đzayloo	Grassland
	OTL	säwig	süyüü	Love
	Uyghur/ Kazakh	qıflaq/ qıstaw	qıfıtoo	Rural
	Uyghur/ Kazakh	qurıy/ qurıw	quruu	Dry
	Uyghur/ Kazakh	yaylay đzaylaw	/ đzayloo	Grassland
	Uyghur/ Kazakh	Yöläg/ süyew	đzölöø	Support
Verbs	OTL	ayyufı külgüfı	aytuufı külüüfı	Narrator Laughing person
		bitıgfı	bütüüfı	Secretary
		ølürgüfı	øltürüüfı	Murder
		satıyufı	satıuufı	Merchant

Old Turkic Language = OTL

Long vowels in collective numerals

The long vowels in the collective numerals of Kirgiz language evolved from the development of OTL, that is, the collective affixes of OTL evolved as -ägü>-øø, -gü>-øø, -ayu>- oo, -yu>- oo. The evolutionary examples of collective numerals are shown in Table 2* Clauson (1972).

Long vowels in adjectives

Some nouns, adjectives, and verbs in the Kirgiz language produce long vowels when affixed with adjective affixes.

(i) Noun conjugation -lıy/-lig>-X+long vowel

Some adjective affixes such as -lıy/-lig in OTL evolved into affixes with long vowels in Kirgiz as mentioned in Table 2. In these examples, the iy/-ig of the affixes evolved into the vowels uu and üü. In Kirgiz language, noun conjugations -Xuu/-Xüü form more adjectives. This kind of long vowel is secondary long vowel.

(ii) Noun conjugation-saq>long vowel adjective

The affix -saq is an adjective that is composed of nouns, is affixed to some nouns to form adjectives with long vowels. For example, malsaaq (loving money), balasaaq (loving son as life). This kind of long vowel is not too many and they are formed by the elongation of short vowels in affixes.

(iii) Adjective conjugation -raq\rek>long vowel adjective

In modern Kirgiz, adjectives are combined with comparative endings -raq\rek to produce long vowels. For example, đzaqıraaq (better), semizireek (fatter), ayıraaq (whiter), ifkereek (thinner), küfıtüürøøk (stronger), ortorooq (closer to the middle). From these examples, it can be concluded that this type of long vowel is not produced by the change of a certain consonant in the word, but is formed by the extension of the vowel in the affix. This type of long vowel phenomenon does not exist in other relative languages. Therefore, this is also a special characteristic of long vowels in Kirgiz.

* The related examples of old Turkic language and Mongolian Language long vowels in this article are from Clauson, G., An etymological dictionary of pre-thirteenth-century Turkish. 1972: Clarendon Press Oxford.

(iv) Verb conjugation -ʃaq/-ʃeek> long vowel adjective

Verbs form the adjective affix -ʃaq affixed after some verbs to form adjectives with long vowels. For example: uyalʃaaq (shyless), tartinʃaaq (complaining), erinʃeek (lazy), uruʃʃaaq (arguing), baqirʃaaq (coming complaining). This type of long vowel is also formed by the extension of the short vowel in the affix -ʃaq. This type of long vowel is different from the long vowels of inherent words, and the number is not large and has no phonemic function.

(v) Verb conjugation -ayan/-øggøn/-egen> long vowel adjective

Verbs form adjectives with affixes -ayan/-øggøn/-egen, which is affixed to some verbs to form long vowels. For example, qafʃaayan (to escape), qabaayan (biting dog), kørøggøn (good eyesight), tebeegen (to kick), bereegen (generous). There are not many such long vowels and they are different in nature from the long vowels in common words, and also have no phonemic function.

(iv) Verb conjugation -anaq/-ønøk> long vowel adjective

The affix -anaq/-ønøk, which is composed of verbs, is affixed to some verbs to form long vowel adjectives. For example: qafʃanaaq (love to escape), süzønøk (love to hit people), tebeneek (love to kick), qabanaaq (love to bite), kørønøk (good eyesight). There are no many such long vowels and they have no phonemic function.

(vi) Verb conjugation -aq/-øk> long vowel adjective

The affix -aq/-øk> of an adjective composed of verbs is affixed to some verbs to form long vowels. For example: mørøøk (loving to call), tuylaaq (unruly), iylaaq (loving to cry), aymaa (loving to make trouble), süyløøk (loving to talk). The long vowels in these words are formed by combining the ending vowels of the root and the initial vowels of the affix^[9]. It can be seen that some long vowels in Kirgiz are formed when the root and affix are connected, but they must be the combination of open syllable words and vowel beginning affixes.

(vii) Verb conjugation -qaq/-gek> long vowel adjective

The affix -qaq/-gek, which is composed of verbs, is affixed to some verbs to form long vowel adjectives. For example, siygeek (noturia), ʃiʃqaaq (loving shit), qafʃqaaq (loving to run away). They are not many, and their function of distinguishing meaning is not obvious.

(viii) Certain long vowel adjectives

In Kirgiz language, qatuu (hard), qızuu (earnestly), and other basic adjectives retain the second long vowel. Usually, they are produced by the evolution of the final consonant ɣ of OTL words as shown in Table 2.

Long vowels in gerunds

In Kirgiz language, gerunds ending in -oo/-uu usually have second long vowels (Table 2). Sartbaev, Kудaybergenov, Akmatov (1980). The Kirgiz language is different from other Turkic languages as shown in Table 2, there is an obvious difference in the features of Kirgiz phonetics.

Long vowels in verbs

The affixes -yufʃi/-güfʃü/-qufʃu/-küfʃü that formed the present-future tense verbs in ancient languages evolved into long vowel affixes in Kirgiz (Table 2). Also, verbs may be conjugated with the suffix -ar in the future tense and its variants to form long vowel verbs after some verbs. For example: iʃte+-er>iʃteer (maybe); bar+-ar>baraar (maybe go); oylo+-or>oyloor (maybe think); kør+-ør>

kørøør (maybe watch); uq+-ar>uȳaar (maybe understand). The long vowels in these examples are formed by the combination of open-syllable stems (roots) and affix vowels, and they have no distinguishing features of word meaning. However, the long vowels *ii* and *ii* generally appear in the apparent changes of spoken words, and the literary language does not use long vowels to spell. For example: bayi+-ir>bayiir (maybe rich); iri+-ir>iriir (maybe spoiled); ʃiri+-ir> ʃiriir (maybe rot); isi+-ir> isiir (maybe the temperature will rise); eertʃi+-ir> eertʃiir (maybe follow). Some scholars believe that the long vowels *ii* and *ii* here do not have phonemic characteristics, so they are written as short vowels when spelling.

Long vowels in nouns

There are two forms of long vowel nouns in the Kirgiz language:

(i) Verb conjugation -Xʃ>long vowel noun

The affix -Xʃ, which is a noun formed by a verb, is connected to a part of the open syllable verb to form a long vowel noun. For example, bayanda+-oʃ> bayandooʃ (predicate); dʒanda+-oʃ>dʒandooʃ (preposition); bayla+-oʃ>baylooʃ (conjunction); ayqinda+-oʃ>ayqindooʃ (adverbial). The -Xʃ at the end of these words is the same as the affix -yʃʃi/-güʃʃü/-quʃʃu/-küʃʃü in the corresponding adjective verbs Sartbaev, Kudaybergenov, Akmatov (1980), that is, they are derived from the evolution of the consonant *y* in -yʃʃi/-güʃʃü/-quʃʃu/-küʃʃü, the long vowel is formed at the place where the suffix is attached to the affix.

(ii) Verb +-oȳul> long vowel noun

The affix -Xȳul, which is a noun formed by a verb, is affixed to a part of the open syllable verb to form a noun with a long vowel. For example: toȳo+-oȳul>toȳool (obstacle); ʃap+-oȳul>ʃabuul (attack); qara+-oȳul>qarool (post); dʒort+-oȳul>dʒortuul (long march). The historical evolution of *y* in the affix -oȳul formed a long vowel. The Chahatai spelling forms of these words are yortoyul (long march), qaroyul (post), and ʃapoyul (attack).

(iii) Verb +-Xq> long vowel noun

The +Xq of a noun formed by a verb is affixed with a vowel ending in a verb to produce a long vowel. For example, tirma+-oq>tirmooq (rake—a horticulture tool); ʃirma+-oq>ʃirmooq (Cuscuta plant); qarma+-aq>qarmaaq (stealing chicken and dog). These words were originally adjectives and became nouns as the degree of nominalization strengthened.

(iv) Verb +-Xn> long vowel noun

In Kirgiz, the verb +-Xn constitutes a long vowel noun. For example: ʃile+-en>ʃileen (broth); tala+-an>talaan (robbing); sürø+-øn>sürøøn (calling for help); qara+-an>qaraan (contour); ura+-an>uraan (slogan). The affix -Xn in these words is affixed to some open syllable verbs to form nouns with long vowels. Such long vowels do not have the nature of phonemes, so their meanings cannot distinguish.

Long vowels in pronouns

In the oral Kirgiz language, especially in folk works such as "Epic of Manas"* and "Aqen Aytish"*, the long vowel *aa* is produced when the two pronouns *men* (I) and *sen* (you) are concatenated with the direction case. Such as: *men*(me)+*ȳa*>*maa* (to me)/ (to me); *sen*(you)+*ȳa*>*saa* (to you/to you).

* The X in the article represents a vowel, and the specific vowel represented is determined by the law of vowel harmony.

* The Epic of Manas is a traditional epic poem dating to the 18th century but claimed by the Kyrgyz people to be much older.

* Aqen Aytish an impromptu competition between two akyns, a form of oral folk song poetry. Performed with accompaniment on folk string instruments (komuz among the Kyrgyz).

2.4. Long Vowels of Kirgiz Language Loan Words

The long vowels in Kirgiz not only appear in inherent words but also in the words of other languages. The long vowels in Kirgiz language are loan words that are mainly reflected in Arabic and Persian languages. Like the long vowels in inherent words, the long vowels in loan words also have the characteristic of distinguishing the meaning of words. The principle of the source of long vowels in loan words is the same as the source of long vowels in inherent words, that is, the two types of long vowels are formed by the changes of consonants. Therefore, we think that the long vowels of the Kirgiz language are the loan words and the second long vowels. However, the consonants that form long vowels in loan words are not the same as the consonants that form long vowels in native/inherent words. According to the formation of long vowels, the long vowels in Kirgiz language loan words can be classified into the following types.

(i) The consonant /ع/ [‘] at the beginning of or in some Arabic words, the loan words become the long vowel aa or oo in Kirgiz. For example: Arabic *ālim* > Kirgiz *aalim* (scientist); Arabic *‘ālām* > Kirgiz *aalam* (world); Arabic *tā‘līm* > Kirgiz *taalim* (teaching); Arabic *qāl‘ā* > Kirgiz *qalaa* (castle, city); Arabic *sa‘āt* > Kirgiz *saat* (table, hour); Arabic *fu‘lā* > Kirgiz *foola* (light).

(ii) In some Arabic-Persian loan words, the consonant h or ḥ between two vowels changes to produce the long vowel aa. For example: Arabic *ṭāhārāt* > Kirgiz *daarat* (lustration); *māḥāll* > Kirghiz *maal* (time); *rāḥāt* > Kirgiz *iraat* (comfort); *djihāt* > Kirgiz *djaat* (Jihad); Persian *bāhbaa* (Price); *bāhār* > Kirgiz *baar* (spring); *bāhre* > Kirgiz *baar* (share); *džahan* > Kirgiz *džaan* (world).

(iii) In loan words composed of two or more syllables, the change of the consonant h or ḥ at the end of the first syllable leads to a long vowel. For example: *miḥnāt* > *meenet* (labor/hard-working), *iḥtimāl* > *eetimal* (probably), *ṣuḥbāt* > *søebet* (conversation/company) in Arabic; *kāhrāmān* > *kaarman* (hero) in Persian, etc.

(iv) The final consonant n or ḥ in Arabic-Persian monosyllabic loanwords becomes a long vowel in Kirgiz. For example: Arabic *mūhr* > Kirgiz *møer* (stamp), *zihn* > Kirgiz *zeen* (mind/brain), *fāhm* > Kirgiz *baam* (wisdom); Persian *mihr* > Kirgiz *meer* (kindness), *šāhr* > Kirghiz *jaar* (city).

(v) The consonant h at the end of some disyllabic foreign words becomes a long vowel in Kirgiz. For example Persian *gunāh* > Kirgiz *künøø* (sin), Persian *bāhā* > Kirgiz *baa* (price).

(vi) The change of consonant v/w between some Arabic loan words forms a long vowel. For example, Arabic *džāvāb* > Kirghiz *džoop* (answer), Arabic *šāwāb* > Kirgiz *soop* (merits and virtues), Arabic *dā‘wā* > Kirghiz *doo* (law suit); Arabic *qāwm* > *qoom* (nation), Arabic *dāwr* > *door* (Times); Arabic *šāwkāt* > *šøøket* (glorious), Arabic *dāwlat* > *døølet* (wealth), Arabic *āwliyā‘* > *ooluya* (saint), Arabic *sāwlat* > *søølet* (gorgeous).

In short, the consonants such as [‘], [h], [ḥ], [w] in Arabic-Persian loanwords do not apply to the Kirgiz phonetic system, so they will change or disappear or become long vowels. This is the process of adapting the phonetic structure of loan words to the internal principles of Kirgiz phonetics.

3. Conclusions

Kirgiz’s historical relationships and the evolutionary movements have brought vowel structural changes in the language. Therefore, there are many types of long vowels in the language in which the primary and secondary long vowels coexist. And there are studies on the Kirgiz language that view classifying all the long vowels as secondary vowels in the Kirgiz language as incorrect, and doesn’t completely comply with linguistic evidence available in the language. There are also some examples

* *Ā* : Short lines indicate the writing of long vowels in Arabic.

of the primary long vowels in the Kirgiz that are not yet systematically analyzed. Therefore, the current research has certain limitations, and it recommends further intensive large-scale studies of the long vowels in the language.

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