

The Historical Change of the Vowels a/ə/e in Turkic Languages

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Abstract—The history of Turkic sounds is the history of the phonetic structure and phenomena system of the contemporary language. Historical phonetics aims at explicating the ways of contemporary sound formation, the structure of the phonetic system and the development of its tendencies. The article focuses on the historical development of the phonemes a, ə, e in Turkic, namely in Kazakh linguistics. While the mentioned sounds were identified historically in the works of Turkologists, the formation of ə and e is approached differently. Based on certain research data, the vowel ə is considered a sound borrowed from Arabic and Persian. Other scholars identify the vowel ə as the sound originating in the ancient Turkic language or view it as a sound formed between ə and e. From this standpoint, the issue of identifying the phonemes ə and e based on scientific data becomes crucially relevant. In this regard, the peculiarities of the local usage of the vowel phoneme ə and the language data accompanying the sounds a/ə are examined. Apart from this, the historical change of the phonemes a/ə/e is scrutinized according to the conceptions of scholars. The vowel content of the Kazakh language is described based on scientific data. The study justifies the existence of nine vowel phonemes in the Kazakh language and identifies the vowels ə and e from the historical viewpoint.

Index Terms—Turkic, phonetic, sounds, Kazakh linguistics, Turkic language

I. INTRODUCTION

In the scope of linguistics, the role of historical phonetics is crucial. It identifies the nature and the development path of the sounds which change, modernize, or reemerge throughout the process of their development. Particularly, it is significant to study the phenomenon of vowel phonologization within the sound system from the historical viewpoint. In Turkic studies, it is necessary to mention the works of V. Tomsen, V.V. Radlov, S.E. Malov, G.I. Ramstedde, M. Ryasyanin, V.A. Bogoroditsky, B.A. Serebrennikov, N.Z. Gadzhieva, A.M. Scherbak, N.A. Baskakov, M. Tomanov, Sh.H. Akbayev, A.T. Kaidar, B. Sagyndykuly, K. Sartkozhauly, M. Yeskeeva and M. Sabyr which describe the phonetic-phonological side of the sound system and its development, and the works of A. Baitursynuly, K. Zhubanov, I. Kenesbayev, Zh. Aralbayev, T. Talipov, A. Iskakov, S. Myrzabekov, A. Zhunisbek, N. Uali and Z.M. Bazarbayeva which relate to Kazakh phonetics. There are also experimental works (Khassenov, 2021; Khassenov et al., 2022) related to the ontogenesis of speech. The article is based on the above-mentioned works of local and foreign researchers.

It is obvious that the vowel system of Turkic languages did not obtain its contemporary form immediately. The path of vowel development encompasses long periods of history. Throughout the process of language development, vocalism has been undergoing phonetic-phonological changes, transforming and becoming systematized. In particular, vowels, fulfilling the function of sense-distinguishing units, have been developing, shortening, being selected and complemented by phonemes. They have become phonologized – the process which encompasses the stages unknown to us. In this regard, there are unsolved problems in the field of phonetics within Kazakh linguistics, one of which relates to certain issues of historical phonetics. Apart from European languages, studying the sounds of the Kazakh language from the standpoint of historical phonetics (phonology) along with comparing them to other Turkic languages allows for the identification of their developmental path. Furthermore, the functional sense of Turkic vowels, i.e., the scope of their phonemic utilization and the sound changes during their development were closely connected to the additive structure of the language, the vowel harmony law, assimilation and dissimilation, and the processes of divergence and

convergence. Such phenomena in sound changes, as is seen, influenced the systematization of contemporary vowels. In the basis of those changes lie the authentic features which characterize the common vowels in related languages and the paths of their development. In this regard, studying, identifying and analyzing linguistic elements, categories and phenomena lead to defining and identifying the interrelation between the old and the new. That is, formation of vowels as phonemes is a historical phenomenon.

The article discusses the establishment and formation paths of the phonemes **a/ə/e** within nine vowels of the Kazakh language from the historical standpoint. Our main focus is the vowel phoneme **ə**. The reason for that lies in the existence of numerous scientific approaches and views related to the formation of the vowel phoneme **a** in the Kazakh language. Hence the given paper compares the systems of vocalism of the Turkic languages, identifies their similarities and peculiarities and, as a result, describes the formation path of the sounds **a/ə/e** based on scientific data.

To describe the historical changes of the vowel phonemes **a/ə/e**, to analyze and contrast the information based on linguistic data.

II. MATERIALS AND METHODS

Comparative-historical, descriptive and analytical methods were utilized in the article. Comparative-historical method is the important instrument of studying the history of language, which encompasses the methods and techniques of investigating related languages and identifying the historical tendencies of language development. The main goal of utilizing this method is to reconstruct the ancient form of our language, to explain the development and division of languages belonging to the same group, to profoundly understand the history of our mother tongue. The history and the stages of Turkic vocalism system development is described via comparative-historical methods. In this regard, based on the comparative-historical method, dialectal materials have also been considered in the scope of creating the mother-tongue model of vocalism. Additionally, in relation to the comparative-historical method, the sound systems of genealogically related languages were taken into account, which resulted in describing the vowels of the languages belonging to Kypchak group. The descriptive method involved analyzing the features of phonemes.

The primary information related to the sound system of the Kazakh language is witnessed in I. Ilminsky's (1860) "Materialy k izucheniyu kyrgyzskogo narechiya" (Materials for studying the Kyrgyz tongue) work written in 1860s. The scientist classifies Kazakh sounds into two groups and demonstrates eight types of vowels. They are: **a –ä, e, ы, i, o, ö, y, ŷ**. He views the front, open sound **ä (ə)** not as an independent phoneme, but as a variant of the phoneme **a**.

In the work of Melioransky (1894), sounds are classified into vowels and consonants, and nine vowels are indicated. They are: **a (a), o (o), ö (ö), ы (ы), i (i), e (e), ä (ə), y (y), ŷ (y)**. These sounds, first identified by Melioransky (1894), are currently in use in the Kazakh language.

V.V. Radlov notes that the vocalism of the Kazakh language consists of nine vowels **a, ə, e, o, ö, ы, i, y, ŷ**. The scientist also noted that the hard vowels correspond to soft vowels.

A. Baitursynuly (1992), the scientist who presented the exact number of the vowel sounds in the Kazakh language, indicates the nine vowels as follows: /a/, /o/, /y/, /ы/, /e/ and ə, o, y, i. A. Baitursynuly does not attach signs to every vowel, but he shows the softness of vowels with a sign of hamza (◌). As A. Baitursynuly explains that: "This sign is put before the word, complementing it, and shows that the word is about to be read softly, that is, when this sign is there, the sounds within the word are pronounced softly".

After A. Baitursynuly, K. Kemengeruly was the one who systematized the sound structure and content of the Kazakh language in a scientific way and developed its main principle. The scientist's views related to the Kazakh phonetics were encompassed in the works "Grammar of the Kazakh language" and "Language tool", and in the speech he gave at the scientific-orthographic conference held in Kyzylorda in 1929. The scientist identified five vowels and seventeen consonants, including four letters referring to semi-vowels, and used the hamza sign to demonstrate the softness of a word.

K. Zhubanov (1999) is one of the scientists who provided the base for the sound system of the Kazakh language. Classifying the Kazakh sounds into three groups, K. Zhubanov notes: «the vowels are – **a, e, o, y, ы, yu, ый** – seven of them". I. Kenesbaev (1962) shows eleven vowel sounds in the Kazakh language. The scientist claims: "The modern Kazakh language has the following nine bare vowels (*monophthongs*): **a, e, ы, i, ə, y, y**. In addition, there are two compound vowels (*diphthongoid*): **и, y**". Aralbayev (1988) is a scientist who has shown the uniqueness of Kazakh vocalism. He claims: "There are eleven vowel phonemes in the modern Kazakh language. Nine of them are monophthongs. Bare vowels: **a, e-ə, o, ö, ы, i, y, y, ə**, while the remaining two are diphthong vowels: **и, y**". A. Zhunisbek (1972) in his work "Vowels of the Kazakh language" shows nine vowel phonemes characteristic of the Kazakh language.: **a, ä, o, ö, y, i, u, ü, e**. In addition, the problem of the algorithm of Kazakh language vowels was also considered in several studies (Bazarbayeva et al., 2023).

Thus, scientists consider the composition of vowels in the Kazakh language from different angles, and we see that there is no single trace in the research. That is, a system of thirteen, eleven, and nine vowel sounds was given. It is known that the reason is related to the inclusion of vowels that have entered from the Russian language. In the following years, the system of nine native vowel sounds characteristic of the Kazakh language was determined and thoroughly considered in scientific research. In the article, the nature of the vowel phonemes **a/ə/e** among the nine

native vowels characteristic of the Kazakh language is determined and the way of development is given. The nature of these sounds is revealed by comparing them with sounds in Turkic languages.

III. RESULTS AND DISCUSSIONS

Historical phonetics is one of the most neglected issues today. The reason for this is that the historical change of vowels is still not fully revealed. In this article, vowel phonemes **a/ə/e** are considered starting from ancient Turkic written monuments and then compared with Turkic languages. In the article, the peculiarity of the phonemes of vowels **a** and **e** in the Kazakh language was mentioned and illustrated with related examples.

There are different scientific views on the history of the formation of the phoneme vowel **a** in the Kazakh language. One of them makes a scientific conclusion that it is a sound that came from the Arabic-Persian language, while the other considers it as an indigenous sound coming from the ancient Turkic language. The reason for such discrepancy lies in the fact that the vowel phoneme **a** can be witnessed in both Kazakh words (*әке* “father”, *кәрі* “old”, *және* “and”, *әтеу* “cockrel”) and in the words borrowed from Arabic and Persian (*әден* “etiquette”, *әдебиет* “literature”, *әскер* “army”). The vowel phoneme **a** is sometimes in the first, sometimes in the second syllable. For instance: *әже* “grandmother”, *әке* “father”, *әбзел* “equipment”, *әбігүл* “plant”, *әдді* (әддін білу) “the limits”, *әдемі* “beautiful”, *әден* “etiquette”, *әдет-ғұрып* “traditions”, *әділ* “just”, *әжім* (әжім түсу) “wrinkle, becoming wrinkled”, *әзер* (әзер дегенде) “barely”, *әзіл* “joke”, *әйбат* “force”, *әйел* “woman”, *әйнек* “glass”, *әке* “father”, *әке-көке* “relatives”, *әлдекім* “someone”, *әлдеқайда* “somewhere”, *әлди-әлди* “lullaby”, *әлжуаз* “weak”, *әлек* “interest”, *әлеует* “potential”, *ән* “song”, *әнші* “singer”, *әңгіме* “story”, *әртүрлі* “different”, *әскер* “army”, *әсия* (plant type), *әуез* “melody”, *әуен* “melody”, *әулие* “a saint”, *әшекей* “decoration”, *бәйге* “baige – a traditional horse race”, *бәйшешек* “snowdrop”, *бәсіре* “a horse”, *дәйек* “supplement”, *дәм* “taste”, *дән* “seed”, *дәстүр* “tradition”, *дәстүргүл* (plant), *жәрдем* “aid”, *кәмишат* “otter”, *кәрі* “old”, *кәде* “present”, *ләйлек* “stork”, *мәуе* “fruit”, *мәсі* “boot”, *сәби* “baby”, *сән* “fashion”, *сәтен* “sateen”, *іңкәр* “eager”, *сірә* “perhaps”, *шүбә* “suspicion” etc. In speech, the vowel **a** preserves its softness, and sometimes the hard vowel **a** is pronounced softly as **ə**. For instance, the vowel **a** softens when it comes between **ж**, **ш** and **й**, becoming closer to **ə**. For example, *шай* “tea” – *шәй*, *жай* “simple” – *жәй*, *жайлы* “comfortable” – *жәйлі*, *шайшөп* “camellia” – *шәйшөп*. However, when the sound **a** comes between **ж**, **ш** and other consonants, it is pronounced hardly: *jarğaq* (not *järğaq*), *januar* (not *jänuar*), *jaqtau* (not *jäqtau*). Contemporary orthoepy contains the law of softening the vowel **a** when it comes between **ж** and **й**. Shcherbak (1970) connects the hard pronunciation of the vowel **a** with a historical change. It can be seen from the scientist's conclusion: «Along with **ä** in Kazakh language, there is the sound **ä** in borrowed words, compare. *äl* ‘force’, *cäm* ‘luck’, *cän* ‘luxury’, и в словах типа *жәй* (*жәй*) ‘place’, *шәй* (*шәй*) ‘tea’, in which **ä** developed from **a**” (p. 35). We notice the view that the vowel **a** was formed on the basis of **a**.

Some words with the vowel sound can also be observed from local language features. For example, Omarbekov (1985) examines the language of the Mangistau Kazakhs in his study “Local features of the Kazakh spoken language”. In his study, the scientist states that “one of the phonetic features that often stand out in the local folk language is the hard or soft pronunciation of some words, as opposed to the literary language” and gives the following data about it. Some words that are pronounced softly in the literary language are pronounced hardly in the language of Mangistau residents: *ары-бері* ‘to and fro’ – *әрі-бері*, *бары* ‘all’ – *бәрі*, *алдағандай* – *әлдеқандай* ‘like that’, *алдақашан* – *әлдеқашан* ‘long time ago’, *араң* – *әрең* ‘hardly, barely’, *азар* – *әзер* ‘barely’, *қары* – *кәрі* ‘old’, *жандық* – *жәндік* ‘insect’, *қәде* – *кәде* ‘present’. In addition, on the contrary, it is shown by the following linguistic data that the words that are pronounced hard in the literary language sound soft in that region: *кәтті* – *қатты* ‘hard’, *дәне* – *дана* ‘piece’, *мәусім* – *маусым* ‘season’, *уәйім* – *уайым* ‘worry’, *бәжірею* – *бәжыраю* ‘to stare’, *әтіз* – *атыз* ‘field’, *зәлім* – *залым* ‘evil’, *кәте* – *қате* ‘error’, *кәуіп* – *қәуіп* ‘danger’, *кәйтейін* – *қәйтейін* ‘what shall I do’, *кәсиет* – *қәсиет* ‘characteristic’. It can be seen that the sounds **a** and **ə** are used equally in some words. In connection with this, S. Amanzholov said: “The formation of the Kazakh national language did not follow the same path as the people themselves. Individual tribes, sometimes entire tribal unions within it, joined other nations in the future. “Because it lasted for a long time, such a situation has left some marks and traces in the language of individual tribes, and through them in the entire Kazakh language.” Saying that “the fact that the Kazakh language was not formed in a direct way is proved by the many sound elements and grammatical characters preserved in the Kazakh language itself and its features,” he gives the following examples. For instance, **a** // **ə** (*шаңғы* ‘ski’ - *шәңгі*, *батшағар* ‘an outrageous one’ – *бәшәғар*, *баға* ‘price’ – *бәкә*); **ə** // **a** (*әйел* ‘woman’ - *айал*, *нәубет* ‘disaster’ – *наббет*, *және* ‘and’ – *жана*). Then it can be seen that the exchange of vowel **a** and **ə** in local regions is also influenced by other languages. In local regional features, in the spoken word, one can see the exchange of **a/ə**, **e/ə**. In his study, Omarbekov (1985) shows some words from the Arabic-Persian language in which the sounds **a/e** alternate: *мертебе* – *мәртебе* ‘respect’, *дәстүр* – *дәстүр* ‘tradition’, *дәреже* – *дәреже* ‘degree’, *нәтиже* – *нәтиже* ‘result’, *селле* – *сәлде* ‘*chalma*, *turban*’. The variant with **e** sound is characteristic of certain Turkic languages, for example, *мертебе* – Kyrgyz, Turkmen; *дәреже*, *нәтиже*, *селле* – Turkmen. Here it seems that it should be taken into account that each language acquires words from the Arabic-Persian language according to its articulatory features. It is known that the words that are pronounced hard in the literary language are generally pronounced soft in the southern region. Some researchers associate the reason for this

with the fact that softness *a* is a characteristic sound of many Arabic-Persian kerbs in our southern dialects, as well as in Uzbek and Karakalpak languages.

Summing up, in the work "Sound System of Our Spoken Language" it is said that "the sound of *ə* in some words seems to be separated from foreign language influence. Some of these are ancient signs that continue to exist in our language, and others may be signs that were born in our language due to the positional changes of sounds. The dispersion in their geography points us to this. And the sound "*ə*" can be witnessed in the native lexicon of our language, though quite rarely. For example: *әке* 'father', *кәрі* 'old', *әлі* 'still', *әттең* 'regret', *және* 'and'". This scientific view indicates that the sound *ə* either existed in the Kazakh language from the ancient times or occurred due to the positional change.

There are different scientific conclusions about the formation of the sounds *ə* and *e* in the system of 8-9 vowels in the Turkic (Kazakh) languages. Some of the modern Turkic languages do not have the vowel *ə* sound. "In the Azerbaijani, Uyghur, Tatar, Bashkir languages, *ə* is pronounced both in the root and in additions, and in the Kazakh language, it is pronounced only in the first syllable. In terms of frequency of use, Azerbaijani and Uyghur are the most common, followed by Tatar and Bashkir languages. The sound is the least frequent in Kazakh and Turkish" (1981). In the course of the development of Turkic languages, in some languages, the sound of "*ə*" was preserved, and in some languages, the sound of "*e*" was preserved. Baskakov (1988) considers the phoneme *a* as a borrowed sound in the modern Kazakh, Nogai, Karakalpak languages of the Kypchak-Nogai group. As the scientist claims, "The vowel system of the Nogai language includes eight vowels characteristic of native Nogai words: *a, e, y, ɨ, o, ɔ, u, ü* and one vowel *ä* which occurs mainly in borrowed words and as an exception in complex root words". For Karakalpak language, he indicates the same: "The vowel system of the Karakalpak language includes eight vowels characteristic of native Nogai words: *a, e, y, ɨ, o, ɔ, u, ü* and one vowel *ä*, which occurs mainly in borrowed words and as an exception in root words, not included in organic composition and corresponding regularities of contrast with other vowel phonemes". The scientist believes that the given sound is borrowed in the Kazakh language as well (Baskakov, 1988). However, in the Kazakh, Karakalpak, and Nogai languages, in addition to the words that came from the Arabic-Persian language, the vowel phoneme *ə* can be found in native words and dialects. For example, the Nogai language has nine vowel phonemes. They are: *a, ab, o, ob, ы, u, y, ыь, э*. Here [*ab*], [*ob*], [*нb*], [*yь*] are native to Nogai language. Within vowels, the sounds *a, ы, u, e* can be met in every position, while vowels *o, ob, y, ыь* are only met in the first vowel. Similarly, the sound *ab* (*ə*) is only witnessed in the first syllable. For example, *абзир* "now", *авел* "woman", *абдет* "habit", *абдеттеги күн* "a regular day", *абпме-абзир* "ready-made", *абр заманга* "for every time", *абр* "every", *абрилер* "letters", *дабри* "medicine", *дабриин* "cinnamon", *даъм* "taste", *маьметекей*, *маьлек*, *маьнели* "meaningful", *маьнесиз* "meaningless", *наьлет* "curse", *саьбийлер* "babies", *саьли* "Tuesday", *саьрсемби* "Wednesday", *саьат* "hour/clock", *таьтли* "sweet". As Baskakov (1988) supposes, the vowel [*ab*] is mainly borrowed from Arabic-Persian: *аьрекет* "activity", *аьлемет* "enormous", *маьлек* "angel", *дабри* "medicine", *авел* "woman". Also, the sound *ab* is also met in the original Nogai words: *аьпте*, *баьний*, *маьметекей*, *аьше*, *маьмике*, *таьтли*.

The Karakalpak language has nine vowel sounds: *a, ə, e, o, ɔ*. For instance, *dän* "seed", *äje* "grandmother", *ädil* "just", *äke* "father", *käsip* "craft", *g'ärip* "bizarre", *ähgime* "story", *änir* "order", *älem* "world", *änir* "story", *bäri* "all", *däiyil* "evidence", *däreje* "degree", *däri* "medicine", *dästür* "tradition", *däwir* "era", *mädeniy* "cultural", *mäjilis* "conference", *män* "meaning", *mängilik* "eternity", *mäsele* "issue", *Tänir* "creator", *täriya* "upbringing", *shärshembi* "Wednesday".

When comparing some words in the northern dialect of the Karakalpak language, the following sound changes can be observed. Instead of *e* sound in literary language, the vowel *ə* is used. Кесе-кәсә 'cup' // кәсә: *kәсаларга шай күйүн ишип отыра берің, тартымбай* (Pour tea into the cups and do help yourselves, do not be shy). Дерек-дәрек 'track': *жойтылған ылақтың дәрегі табылмай, бираз қыйланып үотырмыс* (The vanished goat's tracks are nowhere to be found, and we are worried). Also, depending on the dialect of some regions, one word sounds differently. For instance, in Shymbai accent the word is *қәлә гүн*, in Hozheli accent it is *қала күн*. These examples show the interchange of the sounds ([*ə*] - [*a*]). Some researchers associate its reason with the influence of the Uzbek language in that region (Kaypnazarova, 2018).

Thus, the vowel *ə* is preserved as a separate phoneme in some dialects of the Azerbaijani, Turkmen, Uyghur, Tatar, Bashkir, Kazakh and Uzbek languages. For instance: in Azerbaijani *әл* «hand», *әр* «every», *мән* «I», *тәкә* «male goat»; in Bashkir *әтәс* «атеш», *кәрәк* «necessary»; in Kazakh *әңгіме* "story", *бәйге* "baige", *мәсі*; in Tatar *тәкә* «теке», *әтеч* «атеш»; түркмен тілінде *кәсе* «кесе», *дәне* «дәнек», *нәзик* «нәзік»; in Uyghur *кәл* «кел», *мән* «мен», *кәң* «кең». In the Azerbaijani and Uyghur languages, we notice that the vowel *ə* is used instead of the vowel *ä* in the ancient Turkic language. Also, in Tatar, Bashkir, and Khakas languages, if the vowel *ɨ* was used as opposed to *e* in Kazakh. For example: the Azerbaijani *сән*, the Uyghur *сән*, the Altai *сен*, the Kazakh *сен*, the Karakalpak *сен*, the Kyrgyz *сен*, the Kuman *сен*, the Nogai *сен*, the Tuvan *сен*, the Turkmen *сен*, the Uzbek *сен*, the Shor *сен*, the Yakutian *эн*, the Bashkir *һин*, the Tatar *син*, the Hakas *син*, the Chuvash *эсе*.

To clarify, the ancient Turkic *ä* (*ə*) corresponds to the sounds *ə, e, ɨ* in contemporary Turkic languages: *кәл/кәл/кел/кил* 'go'; *бәр/бәр/бер/бир* 'give'; *кәс/кәс/кес/кис* 'cut'; *сән/сән/сен/син* 'you'; *мән/мән/мен/мин* 'I'. According to the laws of language development, there are languages in which the sound *ə* is used as it is, in some languages it has changed to the vowel *e*, and in some it has changed to the sound *ɨ*.

Sagyndykuly (1994) believes that the sound ə was the first soft vowel to appear, and he supports that view with the examples of such Kazakh words as әлду-әлду 'lullaby', ән 'song'. He also explains the formation of the sound ə in the first syllable through such words as әке 'father', әже 'grandmother'. Furthermore, the scientist indicates that the ancient Turkic languages had no soft vowels during the initial stage of their development, and the oldest of the sounds а, е, ә is the soft sound ә. He even claims that the fact of the sound ә being a softened allophone of а is evident from the monuments. He explains the formation of the sound е through the merging of и and ә, forming a diphthong (Sagyndykuly, 1994). K. Musaev contrasts the phoneme ä with the phoneme e in the Kazakh language and says that if the word came from the Arabic-Persian language, then the following example can be given: *el-äl, sel-säl, eli- äli*. Such an opinion was in accordance with the opinion of other scientists that the phoneme ә in Turkic languages is a sound that entered from Arabic-Persian languages.

The vowel е is preserved in modern Azerbaijani, Altai, Bashkir, Kazakh, Karakalpak, Kyrgyz, Kuman, Nogai, Tatar, Tuva, Turkmen, Uzbek, Uyghur, Khakas, Chuvash, and Shor Turkic languages, but not in Yakut. For instance, general Turkic *et 'er (meat)' Bashk. *um*; Tat. *um*; Gag. *et*; Az. *üt*, Turk., CTat., Karakalp. *et*; KBalk., Kum.*et*, Nog., Kaz., Kyr., Alt., Uzb. *et*, Uyg. *üt*, Hak. *it*; Tuv. *iht*, Yak. *et* 'the corpse of a slaughtered animal', Chuv. *üt*. The prolonged **i:** in the contemporary Turkmen language corresponds to the ancient prolonged vowels **i:** and **e:**. For instance: Turkmen. *gi:r-* "enter" ~ Yak. *ki:r*; Turkmen. *gi:n* "wide" ~ Yak. *kien*. The coincidence of the sounds **i:** and **i:** < **e:** in the Turkmen language broke the system of open, non-labial vowels and led to the emergence of new mutually opposite vowels: **ä** – **e**. Also, the Turkic languages were divided into different languages, and in the process of development, the period of formation of the vocalism of the Bulgarian language coincided with the vocalism system of the Kipchak language. We can see it in the process of narrowing of open vowels or opening the narrow, closed vowels. This phenomenon is reflected in the sounds **ä** > **e** > **i**. For instance: *käl-* > *kel-* > *kil-* «come», or the representation of the sounds **e** > **i**. The ways of formation and establishment of these sounds were different and unique. For example: in the Kazakh language there is *кem* 'go', in the Azerbaijani *кem*, in Bashkir *кum*, in Karakalpak *кem*, in Kyrgyz *кem*, in Kumik *зем*, in Nogai *кem*, in Tatar *кum*, in Turkish *git*, in Turkmen *zum*, in Uzbek *кem*, in Uyghur *кәм*.

Scientist Eskeeva (2007) concludes in her work: "It can be seen that the transition of the phoneme а to the phoneme ä in the monosyllabic roots and root-bases in the language of the Orkhon, Yenisei, Talas monuments is more common in the languages of the Kypchak-Bulgarian group than in the languages of the Kypchak-Nogai group: Bashk. *bäj(läm)*, «knitting», *baj (läneš)* «connection», *jäj* «summer», *jäš* «young», *jäš (en)* «lightning, thunder», *säs* «hair» ~ Kaz., Karakalp., Nog. *baj (lam)*, *baj (lanis)*, *žaz, žaj, šaš*". The scientist says that monosyllables used with the phoneme ä in the languages of the modern Kipchak group are rendered with the phoneme а in the language of the Russians, which is not a sufficient reason to consider the sound ä as a later phenomenon. It can be concluded that the scientist describes the vowel ä as an indigenous sound.

According to Karzhaubayuly (2003), a researcher of ancient Turkic writing graphics, according to the ancient Turkic worldview system, vowels (soul) are divided into two groups. They are:

- Амал 'A way, a method' (male): back, hard, non-labial – а у (ы), о, u (ү). Four sounds.
- Білік 'Knowledge' (female): front, soft, labial – е, i, ö, ü. Four sounds.

These eight sounds consist of four forms (а, е), (у, i), (о, u), (ö, ü), the phonemes а, е are not marked at the beginning and middle of the word, and the phonemes у (ы), i (in some positions it is not written at the beginning of the word) are marked at the end of the word, and the phonemes о, ö are marked at the beginning and middle of the word. In his research, the scientist gives the classification of the researchers who determined the composition of vowel sounds in the Orkhon monuments according to the following table.

Scholars	Thomsen	Radlov	Orkun	A. Gaben on Gaben	Malov	Tekin	DTS	Kormushin	Amanzholov	A.M. Scherbak
□	a, e	a, ä	a, e	a, ä	a, e	a, e	a, e	a, e	a, ä, e	a, ä, e
□	y, i	y, i, e	y, i	y, i, e	y, i	y, i	y, i, e	y, i	y, i, e	y, i, e
□	o, u	o, u	o, u	o, u	o, u	o, u	o, u	o, u	o, u	o, u
□	ö, ü	ö, ü	ö, ü	ö, ü	ö, ü	ö, ü	ö, ü	ö, ü	ö, ü	ö, ü

According to scientist Karzhaubayuly (2003), the image 𐰤 in the text of the Orkhon monuments was read by V. Thomsen as the phoneme а, е, while the Russian V. Radlov read it as the phoneme а, ä (е). However, V.V. Radlov read the image 𐰤 as **й i, e**. In the meantime, V.V. Radlov tried to give the phonetic features of two dialects of the indigenous Turkic written language (not possible). In connection with this, according to the statement of the scientist V. Radlov, he says that in the process of examining and comparing several texts, there is not a single text marked with the vowel ä (е) phoneme. V. Thomsen's methodology includes H. Orkun, S. E. Malov, T. Tekin, G. Aidarov, S. G. Klyashtorny, A. N.

Kononov, V. D. Kormushin, G. Closon, and V. V. A. von Gaben, A. M. Shcherbak, A. Amanzholov are attributed to the adherents of Radlov's methodology. After analyzing everything, the scholar chooses V. Thomsen's methodology.

Let us focus on the conclusions of some researchers. In the work "Comparative-historical grammar of Turkic languages" there is a statement that the vowels **a** and **e** originated from the Turkic language. It also shows the following six ways of forming these sounds:

1. Turkic language had **ä** open and **ɛ** closed vowels.
2. These vowels were contrasted qualitatively and quantitatively, i.e. **ä-ɛ**: (open short–closed long).
3. There were short **ä** and long **ǟ** sounds.
4. There were sounds **ǟ** and **ɛ** (open long and semi-closed short).
5. The vowels **ä**, **ǟ**, **ɛ** and **ɛ̄** existed.

6. In the early period of the Turkic language, there were the sounds **â**, **ǟ**, **ä** and **ê**, **ɛ̄**, **ê**, and the vowels **â** and **ê** in the general Turkish language corresponded to the sound **â** and the vowels **ä** and **ê** corresponded to the sound **ä** (Comparative-historical grammar of Turkic languages, 1984).

Осы дауысты дыбыстар түркі тілдерінде тіл-тілге қарай бөлініп, әрқайсысы жеке фонема деңгейінде жұмсалды. These vowel sounds were distributed among the Turkic languages accordingly, and they were utilized as separate phonemes. In the languages of the Kypchak group (Kazakh, Karakalpak, Nogai), semi-open vowels underwent narrowing, hence the proto-Turkic sound **ɛ** was transformed into the vowel **e**. The sounds **e** (< **ä**, **ɛ**) became **i** in Tatar and Bashkir languages, while in the affix they give the sound **ä**. The sounds **e** – **ǟ** were opposed in Turkmen language, and the long sound **e**: turned into **ei** as a result of its development, while the sound **ei** turned into the vowel **i**. For example: *e:l* > *i:l* "ea", *ge:č* > *gi:č* "late". In Azerbaijani, the long and short vowels **ä** – **e** are opposed. For example: *äl* "hand" – *el* "country"; Az. *er* "early", *bel* "hill, waist", *gez* «late» ~ *i:r*, *bi:l*, *gi:č*. Similarly, in the contemporary Chuvash language, the sound **a** represents the general Turkic sound **ä**, while **i** represents the sound **e** (**e**:). In Yakut language, the sound **e**: became a shortened vowel diphthong: *än* "you" – *ien* "the most". These conceptions indicate that the ancient Turkic language had the vowel **ä** and the long sound **ɛ**, and the sounds **ä** (**e**, **e**) utilized differently based on the neighboring sounds. For instance, the contemporary Tuvan language contains the following vowels: **a**, **ə** (**e**), **o**, **o**, **y**, **y**, **ы**, **и**. Within these sounds, the sound **ə** comes in the beginning of the word, while the sound **e** usually follows a consonant. The pronunciation of the vowel [ə] (**e**) of the Tuvan language varies between two sounds: the open [ə], which is present in Uyghur, Azerbaijani, Tatar, Bashkir and some other languages as a separate phoneme, and a semi-open [ə] (**e**), which is present in Altai, Kazakh, Kyrgyz, Kumyk, Nogai, Turkmen, Hakas, Shor and many other languages (Iskhakov, 1961). For example,

The Tuvan sound **e** [ə]

The order is as follows: Tuvan, Kazakh, Hakas, Yakut, Chuvash.

Эр «man» – ер – ир – эр – ар.

Бер «give» – бер – пир – бизер – пар.

Мен «I» – мен – мин – мин – эпё.

Чер «land, soil» – жер – чир – сир – çёр.

Кел «come» – кел – кил – кэл – кил.

Демир «iron» – темір – тимір – тимир – темир.

Келин «daughter-in-law» – келін – килін – кийиит – келин (Iskhakov, 1961).

For the first time, the issue of vowel **ə** was considered in the work of Thomsen (1916). The scientist examines the formation process of the semi-closed vowel **ə** in connection with the Orkhon-Yenisei written monuments. This sound is represented by the symbol **ı**. The scientist comes to the following conclusion based on the use of the symbol **ı** in some words in the Runic script, and the fact that this symbol is given in a different context in some words: "1. Words with only the sign **ı** had a pure **i** sound (the **i** sound corresponds to it **i** modern Turkic). 2. And if the character **ı** lost its content in other words, it became a semi-open (closed) **ə**, different from the sound of **ä** (Thomsen, 1916). The scholar notes that whenever the sign **ı** was encountered in the monuments, the pure sound **i** was used, and when the given sign could not be found, the closed sound **ə** was used (Thomsen, 1916). Later, the sign **ı** was used to indicate the closed vowel **ə**. For example: *эки* «two», *эл* «tribal community», *эм* «doing», *бэл* «waist». The scholar also notes that the closed sound **ɛ** (**ə**) is only witnessed in the first syllable in the Yenisei monuments: *el* «tribal community», *bes* «five»; the closed or semi-closed sound **ɛ** (**ə**) was viewed as the variant of the vowel **ä**. Also, the scientist says that in the language of the monument, the vowel **e** was used in two variants, one of which was the sound of closed **ɛ**, and the other one was the sound of semi-closed **ɛ** (Thomsen, 1916). According to A.S. Amanzholov, the vowel **ɛ** is a variant of the **ä** sound, and it did not have the ability to distinguish meaning.

In the works of Shcherbak (1970), the vowel **ä** is considered as an indigenous sound coming from the Turkic ancestors. He mentions that in some languages the sound **e** was formed from the vowel **ä** and in some languages it was preserved. Agreeing with the opinion of the scientist, let us focus on the words given in this work.

***äk** – «seeding». In contemporary Azerbaijani, the word is *äk*-, in Chuvash it is *ак*, that is, the sound **ä** is preserved in these languages, while in Kazakh the word is *ек*. E.V. Sevortyan believes that *ек* is the preliminary form.

Also, if we summarize the point of view of which of the vowels **ä** and **e** is considered to be ancient, the following analyzes can be made. In A.M. Scherbak's work, there is the word ***äβ** (~ **öy**) «house», while E.V. Sevortyan gives the

words *en/eb/eb/un/ub/eb/er/yb* «house» and claims that the ancient Turkic, Kuman languages have the sound *ɛ* in the first syllables of the forms *ue* and *ye*. That is, if A.M. Scherbak claims that the first syllable of the given words contains the sounds *ä~ ö* while E.V. Sevortyan believes that the sound is the closed *ɛ*.

**äm* «healing» (in the work by A.M. Scherbak); *em* «healing, cure» (in the work by E.V. Sevortyan). The sound *ä* in the given words is represented as *im* in Uyghur, while in Kazakh it is *em*, and in Tatar, Bashkir, Chuvash, Hakas languages it is *im*. E.D. Polivanov provides the following opinion related to this sound change: «The connection between closed and open vowels led to the change in the degree of the distinctive feature of closeness/openness. Here the vowel *ä* transformed into *i*; while the sounds *o, ö* turned into *y, y̆*».

**ä* «meat» (in the work by A.M. Scherbak); *et* «meat» (in the work by E.V. Sevortyan). Azerbaijani and Uyghur languages of modern Turkic languages have preserved the form with the vowel *ä ä̆*. In Tatar, Bashkir, and Khakas languages it is called *î*, in Chuvash it is *ĭ*, in Kazakh it is *et*. Then A.M. Shcherbak believes that the *ä* sound in Turkic languages is indigenous, while E.V. Sevortian considers the *e* sound to be ancient.

Related to the phoneme *ə*, A. Iskakov notes in his work: «...Although the sound *ə* has disappeared permanently in some modern Turkic languages, it is still used in all syllables of words in languages such as Tatar and Uyghur. And there should be no doubt that it is an indigenous sound preserved only in the first syllable in the Kazakh language» (Iskakov, 1999). Also, the scientist believes that the sound *ə* is the soft pair of the ancient Turkic sound *a*. F.G. Iskhakov also supports this view. The scholar notes that the word *map* «sweat» of the Chuvash language is *māp* in the ancient Turkic, while in other Turkic languages it can be *mep // mup*.

S. Myrzabekov believes that the sound *ə* is an indigenous sound and claims, «Out of 67 thousand words encompassed in the 10-volume explanatory dictionary of the Kazakh language, the number of words starting with *ə* is 870, the number of words starting with *a* is 4440, and the number of words starting with *e* is 2249» and analyzes the oppositions of the remaining vowels. He adds that «according to orthography, the letter *ə* is encountered in the first syllable of around 2.5 thousand words». Overall, the scientific conceptions mentioned above indicate the presence of various viewpoints related to the formation of the vowel sound *ə*.

Words from the Arabic-Persian language were mastered and used according to the peculiarities of each language. According to Yakshi (2010), the author of the work "Borrowed Arabic words common to the Kazakh, Uzbek, and Turkish languages", the vowel sounds in Arabic become hard and soft due to the preceding consonant. The transcription of this sound was given by the letters *ə, a*. However, the sound *ə* in Arabic is pronounced slightly thicker than the sound *ə* in Kazakh. In the same way, the sound of *a* in the Arabic language is different from the Kazakh language (Yakshin). Of course, words from the Arabic-Persian language are acquired according to the acoustic and articulatory features of that language. In connection with this, the table shows how some words with the sounds *a/ə/e* in Turkic languages were acquired from the Arabic-Persian language.

Arabic and Persian words	Kazakh The language	The Karakalpak language	The Kyrgyz language
адат	Әдет “tradition”	a'det	адат
тәнәкер	Дәреже “degree”	da'reje	даража
дәрак	Дерек “data”	derek	дарек
шәгірт	Шәкірт “student”	sha'kirt	шакирт
дәрд	Дерт “burden”	-	дарт
аруах	аруак, әруак “spirit”	a'rwaq	арбак
адабиат	Әдебиет “literature”	a'debiyat	адабият
адаб	Әдеп “etiquette”	a'dep	адептүү
адил	Әділ “just”	a'dil	адил
айал	Әйел “woman”	hayal	аял
алам	Әлем “world”	a'lem	аалам

Similarly, Yakshi, who examined the Arabic words in the Kazakh, Uzbek and Turkish languages, makes the following conclusion: "The marking and sounding of the Arabic vowels in the words entered into the Kazakh, Uzbek and Turkish languages is different. In Kazakh and Turkish languages, when a word with the Arabic hard consonants is encountered, the Arabic short *ə (a)* sound is conveyed through the hard *a* sound, for example: *نَظَرَ* [nazar] > *назар* - *nazar*, *قَرَارٌ* [qarar] > *қарар* - *kara:r*, *صَبْرٌ* [sabr] > *сабыр* - *sabir*, *طَبَقٌ* [tabaq] > *табақ* - *tabak*, and in the words which contain soft consonants, the soft sounds *ə* and *e* in Kazakh, the sound *e* in Turkish is used, for instance: *دَرَجَةٌ* [daraja] >

дәреже - *derece*, بَرَكَة [baraka] > береке - *bereket*, سَبَب [sebeb] > себен - *sebeb*. However, in the words with the prolonged *ə*: (*a:*), the Kazakh language hardens the soft vowels, while the Turkish lets them remain soft, for instance: ثَوَاب [saya:b] > *cayan* – *seva:p*, جَوَاب [jaua:p] > *жaуaн* – *ceva:p*. There are Kazakh words which are pronounced softly although they contain hard Arabic vowels, for instance, نَصِيْب [nasi:b] > *нəcin*, صَبِيْ [sabi:y] > *сəбу*, and on the contrary, there are words which contain soft Arabic vowels but are pronounced hardly, for instance, سَفَر [safar] > *canap*” (Yakshi, 2010). From this we can see that when the words with the vowel *ə* sound were introduced from the Arabic-Persian language, they were assimilated according to the peculiarities of that language. If we take into account the peculiarities of a certain language, then it is not for nothing that some words in the Arabic-Persian language are learned with the sound of *ə*. If so, it can be said that the speech organs are quite ready to master words with the sound of *ə*.

In fact, Z.M. Bazarbaeva makes the following conclusion: "Kipchak-Nogai group part is very close to Kuman group part. This includes Nogai, Karakalpak, and Kazakh languages. They have nine vowel sounds: a, ä, e, y, i, o, ö, u, ü. The ninth vowel ä is believed to have come from Arabic and Persian. However, the origin of this vowel has recently become a controversial issue. It makes sense to consider it as a pure Turkish sound. Because the articulation character of this sound is characteristic of Kazakhs, especially the cry of small babies from the front articulation apparatus is proof of this. The vowels of this part of the group have been transformed and subjected to historical reduction. Open vowels a, ä, e, o, ö did not undergo any changes (Bazarbaeva, 2023). Evolution of vowels (vocalism) in Turkic (Kipchak) languages.

IV. CONCLUSIONS

In linguistics, no postulate stays unchanged and untouched. Every branch of linguistics develops and changes throughout the centuries. One of such changes is closely connected to internal and external factors. Among the language phenomena which are altered and formed by extralinguistic factors while reappearing and replenishing based on the different tendencies of internal factors, phonetic sounds may be mentioned. The branch of historical phonetics explains the nature of the acoustic-articulatory alteration, namely, the reasons for the articulatory changes of sounds. It is obvious that sound changes in the phonetic structure initially occur in their articulatory base. Nonetheless, such sound changes encompass not only the alteration of articulatory base adapted to the authentic speech apparatus of a nation, but also the increasing function of sounds.

The development of the ninth Turkic vowel – a cause of heated debate among the scientists – has been considered. The vowel *ə*, witnessed in such Kazakh words as *дəт*, *əн*, *дəл*, *иңдə*, is believed to originate from the ancient times. The vowel *ə* is preserved in some Turkic languages but lost in the rest. It acts as an independent phoneme in the Azerbaijani, Turkmen, Uyghur, Tatar, Bashkir, and Kazakh languages, and it may be witnessed in the synharmonic accents of the Uzbek language. In the scope of contemporary Turkic languages, the sound *ə* is not witnessed in the Turkish and Turkmen languages that consist of 18 vowels and the Uzbek, Yakutian, and Kyrgyz languages that have six vowels. Throughout the development of Turkic languages, some languages preserved the sound *ə* and others the sound *e*. Azerbaijani and the new Uyghur languages have the short variant of the sound /ə/: *кəл* “come”, *гəл* in Azerbaijani and *кəл* in Uyghur. In some words of the Tatar, Bashkir, Hakas and Chuvash languages, the vowel *ə* transformed into *и*: **əт* “meat”, tat. *um*.

The article considered distinct scientific conceptions related to the formation of the sound *ə*. This issue requires further exploration. For this reason, the next article will also discuss the given problem.

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REFERENCES

- [1] Aralbayev, Z.A. (1988). *Etudes on Kazakh phonetics*. Almaty.
- [2] Baitursynuly, A. (1992). *Language training*. Almaty.
- [3] Baskakov, N.A. (1988). *Historical and typological phonology of Turkic languages*. Moscow: Nauka.
- [4] Bazarbaeva, Z.M. (2023). Evolution of vowels (vocalism) in Turkic (Kipchak) languages. *Tiltanym*, 1(89), 34-43.
- [5] Bazarbayeva, Z.M., Zharkynbekova, Sh., Amanbayeva, A., Zhumabayeva, Zh., Karshygayeva, A. (2023). The National Corpus of Kazakh Language: Development of Phonetic and Prosodic Markers. *SFU journal. Humanities*, 16(8), 1256-1270.
- [6] *Comparative-historical grammar of Turkic languages. Phonetics*. (1984). Moscow: Nauka.
- [7] Eskeeva, M. (2007). *Monosyllabic bases of Old Turkic and modern Kipchak languages*. Almaty.
- [8] Ilminsky, I. (1860). *Materials for the study of the Kyrgyz dialect*. Kazan.
- [9] Isakov, A. (1999). *Analyzing the phonomorphological structure of the Kazakh language from a historical point of view*. Almaty: RBC.
- [10] Iskhakov, F.G., Palmbach, A.A. (1961). *Grammar of the Tuvan language. Phonetics and morphology*. Moscow.
- [11] Junisbekov, A. (1972). *Vowels of the Kazakh language*. Alma-Ata: Nauka.
- [12] Karzhaubayuly, S. (2003). Heritage of Orkhon. *Historical and cognitive ethnographic literature*. Astana.

- [13] Kaypnazarova, M.K. (2018). Phonetics of the northern dialect of the Karakalpak language. *Bulletin of the Chelyabinsk State University*, 1(411), 29-33.
- [14] Kenesbaev, I, Musabaev, G. (1962). *Modern Kazakh language (Vocabulary, phonetics)*. -Almaty.
- [15] Khassenov, B. (2021). Sound Symbolism in the Proto-Turkic Language. *3L: Southeast Asian Journal of English Language Studies*, 27(1).
- [16] Khassenov, B., Adilova, A., & Rapisheva, Z. (2022). Colour Symbolism in Turkic Culture: A New Look in the Reconstruction of Colour Designation. *Pertanika Journal of Social Sciences & Humanities*, 30(4).
- [17] Khassenov, B.R., Adilova, A.S., Tuite, E.E., & Ibrayeva, A. G. (2022). A new approach in linguistics. *Bulletin of the Karaganda university Philology series*, 106(2), 34-42.
- [18] Melioransky, P.M. (1894). *Brief grammar of the Kazakh-Kyrgyz language*. Saint-Peterburg.
- [19] Omarbekov, S. (1965). *Local features of the Kazakh colloquial language*. Almaty.
- [20] Sagindykuly, B. (1994). *Phonological character of the development of vocabulary of Turkic languages*. Almaty.
- [21] Shcherbak, A.M. (1970). *Comparative phonetics of Turkic languages*. Leningrad.
- [22] Thomsen, V. (1916). Une lettre meconnue des inscriptions de l'eniissei. *JSFOu*, 30, 1-9.
- [23] Tomanov, M. (1981). *Comparative phonetics of Turkic languages*. Almaty.
- [24] Yakshi, M.Z. (2010). *Borrowed Arabic words common to Kazakh, Uzbek, and Turkish languages*. Almaty.
- [25] Zhubanov, K. (1999). *Studies on the Kazakh language*. Almaty.

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