

## COMPARATIVE PHONETICS OF UZBEK AND OTHER TURKIC LANGUAGES

**Qarshiyeva Muxarram Shuxratovna**

Termez State University, Philology and Language Teaching: First-year student of the Uzbek language program

Scientific advisor: Termez State University, Doctor of Philosophy in Philology  
**Hamidov Mansur Abdumannovich****Аннотация**

В этой статье рассматривается сравнительная фонетика узбекского языка по отношению к другим тюркским языкам, включая турецкий, казахский и киргизский. Анализируя фонемные инвентари, фонотаксические ограничения, системы гармонии гласных и просодические особенности, исследование подчеркивает как общее фонологическое наследие, так и уникальные фонетические эволюции в тюркской языковой семье. Исследование использует типологическую и описательную лингвистическую методологию, опираясь на акустический анализ, историческую фонологию и полевые данные. Результаты показывают, что, хотя узбекский язык сохраняет многие прототюркские фонетические элементы, он также демонстрирует отчетливые инновации, такие как ослабление гармонии гласных и влияние персидской и русской фонологических систем. Результаты способствуют более широкому пониманию фонетической конвергенции и дивергенции в генетически родственных языках.

**Ключевые слова.** Узбекская фонетика, тюркские языки, гармония гласных, сравнительное языкознание, фонематический инвентарь, фонологическая типология, фонотактика, просодия, звуковые изменения, языковые контакты.

**Abstract**

This article examines the comparative phonetics of the Uzbek language in relation to other Turkic languages, including Turkish, Kazakh, and Kyrgyz. By analyzing phonemic inventories, phonotactic constraints, vowel harmony systems, and prosodic features, the study highlights both the shared phonological heritage and the unique phonetic evolutions within the Turkic language family. The research employs a typological and descriptive linguistic methodology, drawing on acoustic analysis, historical phonology, and field data. Results reveal that while Uzbek preserves many Proto-Turkic phonetic elements, it also displays distinct innovations such as the weakening of vowel harmony and the influence of Persian and Russian phonological systems. The findings contribute to a broader understanding of phonetic convergence and divergence in genetically related languages.

**Keywords.** Uzbek phonetics, Turkic languages, vowel harmony, comparative linguistics, phonemic inventory, phonological typology, phonotactics, prosody, sound change, language contact.

**INTRODUCTION**

The Turkic language family, encompassing over 30 languages spoken across Eurasia, presents a rich field for comparative phonetic analysis. Among them, Uzbek occupies a significant position due to its Central Asian roots, literary development, and phonetic shifts influenced by historical language contact. Phonetics, as the study of speech sounds, provides a crucial perspective for understanding the structural and functional similarities and differences among Turkic languages. Uzbek, a southeastern (Karluk) Turkic language, shares a common ancestry with other Turkic tongues, yet it exhibits phonetic features that set it apart. While Turkish (Oghuz), Kazakh

(Kipchak), and Kyrgyz (Kipchak) retain robust vowel harmony systems and certain consonant inventories, Uzbek reflects both preservation and deviation. Notably, its vowel harmony has weakened considerably, and its consonantal system has been shaped by prolonged contact with Persian, Arabic, and Russian.

A comparative phonetic study enables linguists to trace the evolution of sound systems, identify typological patterns, and assess the impact of internal change and external influence. Phonetics not only underpins orthographic design and pronunciation norms but also reflects broader historical, cultural, and social dynamics within language communities.

This article investigates the phonetic features of Uzbek in comparison with Turkish, Kazakh, and Kyrgyz, focusing on phoneme inventories, vowel harmony, syllable structure, prosodic features, and phonological processes such as assimilation and elision. The aim is to outline the shared phonological framework of Turkic languages while documenting the specific phonetic trajectories taken by Uzbek.

### LITERATURE ANALYSIS AND METHODOLOGY

Linguistic research on Turkic phonetics has a long-standing tradition, with foundational studies by scholars like Radloff (1893), Samoilovich (1922), and more recently Johanson (1998) and Vaux (2009). These works provide comprehensive descriptions of phoneme systems and diachronic changes within Turkic languages. The field has increasingly turned to comparative phonology to understand typological consistencies and variation.

Uzbek phonetics has been addressed in the works of Nazarov (1976) and Abdullaev (1990), who highlighted the reduction in vowel harmony and influence of neighboring languages. Their analyses note the increased presence of pharyngeal and uvular consonants due to Arabic loanwords, as well as Russian palatal consonants through Soviet-era borrowings.

In contrast, Turkish phonetics has been thoroughly documented in modern phonological works by Lewis (2001) and Göksel & Kerslake (2005). These studies affirm the strength of Turkish vowel harmony, a symmetrical eight-vowel system, and strict syllabic rules that prevent consonant clusters at word-initial positions.

Kazakh and Kyrgyz phonology have been explored in Central Asian linguistic surveys, such as those by Kuntze (2000) and Vajda (2005), showing robust vowel harmony systems, presence of front-back and rounded-unrounded distinctions, and velar-uvular contrasts. Kazakh, for instance, exhibits a rich vocalic inventory with nine primary vowels and pharyngealized consonants that differ notably from Uzbek.

Despite the availability of individual language studies, comprehensive comparative phonetic research between Uzbek and its sister Turkic languages remains limited. This article seeks to fill this gap by synthesizing available data into a systematic contrastive framework, thereby contributing to the typological and historical phonological discourse.

This study utilizes a qualitative and descriptive comparative methodology grounded in traditional phonetic analysis and supplemented by instrumental phonetics. Four Turkic languages were selected for comparison: Uzbek (Karluk), Turkish (Oghuz), Kazakh (Kipchak), and Kyrgyz (Kipchak). The selection aims to cover diverse branches of the Turkic family to capture both conserved and divergent phonetic features.

The primary sources include:

1. Descriptive grammars and phonological studies of each language.
2. IPA (International Phonetic Alphabet) transcription data.
3. Phonemic inventories from authoritative databases like PHOIBLE and WALS.

4. Audio recordings of native speakers, transcribed and analyzed using Praat software to measure vowel formants (F1, F2) and consonantal features.

The study focuses on the following phonetic domains:

- **Phonemic Inventory:** Cataloging and comparing the number and nature of vowels and consonants.
- **Vowel Harmony:** Describing the systems of vowel agreement in suffixation and identifying regularity or erosion.
- **Phonotactics:** Exploring permissible syllable structures and consonant clusters.
- **Prosody:** Analyzing stress placement, intonation patterns, and syllable duration.
- **Sound Changes:** Tracing diachronic shifts (e.g.,  $y \rightarrow j$ ,  $q \rightarrow k$ ) and effects of loanwords.

Data are presented in tabular and graphic form, including vowel charts and consonant grids, to allow clear visual comparison. Emphasis is placed on observable, articulatory phonetic phenomena rather than abstract phonological rules.

This methodology allows for a balanced examination of synchronic and diachronic phenomena and supports a typologically informed understanding of phonetic variation across Turkic languages

## RESULTS

The comparative phonetic analysis revealed several key similarities and distinctions between Uzbek and other Turkic languages:

1. **Phonemic Inventories:** Uzbek has 6 vowel phonemes (/a, e, i, o, u, ö/) and approximately 24 consonants. Turkish maintains an 8-vowel system with front-back and rounded-unrounded contrasts, while Kazakh and Kyrgyz show richer vowel systems (Kazakh has 9 oral vowels) and consonants including uvulars (/q/, /ɣ/). Uzbek notably lacks the front-rounded vowel harmony that Turkish and Kazakh maintain.
2. **Vowel Harmony:** Turkish, Kazakh, and Kyrgyz strongly adhere to vowel harmony principles, whereby suffix vowels harmonize with stem vowels in frontness and rounding. Uzbek, however, exhibits significant erosion of this system. For example:
  - Turkish: ev → evler (house → houses)
  - Kazakh: kitap → kitaptar (book → books)
  - Uzbek: kitob → kitoblar (book → books; suffix not harmonized)
3. **Phonotactics:** All compared languages prefer CV syllable structures. However, Turkish and Uzbek prohibit initial consonant clusters, whereas Kazakh and Kyrgyz tolerate limited clusters. Uzbek allows final consonant clusters due to Russian influence (e.g., sport, rasm), while traditional Turkic forms avoided them.
4. **Prosodic Features:** Turkish and Uzbek display predictable stress patterns—final syllable in Turkish, penultimate or final in Uzbek. Kazakh and Kyrgyz show variable stress that is often phrasal. Uzbek intonation has been affected by Russian prosody, resulting in flatter contours.
5. **Sound Change and Contact Influence:** Uzbek demonstrates phonetic influence from Persian and Russian, introducing phonemes like /f/, /x/, and /ts/. For instance, Uzbek 'faylasuf' (philosopher) and 'tramvay' (tram) exhibit borrowed consonants. Kazakh and Kyrgyz, meanwhile, have integrated Arabic and Mongolic phonemes differently.

The table below summarizes core contrasts:

Feature	Uzbek	Turkish	Kazakh	Kyrgyz
Vowel System	6 vowels	8 vowels	9 vowels	8 vowels

Vowel Harmony	Weak	Strong	Strong	Strong
Loanword Influence	High (Persian, Russian)	Moderate (Arabic, French)	Moderate (Russian)	Moderate (Arabic, Russian)
Consonant Inventory	24	29	28	27
Stress Pattern	Penultimate/Final	Final	Variable	Variable

These findings confirm that while Uzbek shares fundamental Turkic phonetic traits, it has diverged significantly due to historical contact and internal innovation. Nonetheless, the presence of cognate phonemes, prosodic tendencies, and syllable patterns affirms a shared phonetic substratum across the family.

### CONCLUSION

The comparative phonetic analysis of Uzbek and other Turkic languages underscores both the shared heritage and divergent evolution of these closely related languages. Uzbek retains many features from its Proto-Turkic roots but shows marked deviations in its vowel harmony, loanword adaptation, and phonotactic flexibility. These deviations, driven largely by Persian and Russian influence, distinguish Uzbek from more conservative Turkic languages such as Kazakh and Kyrgyz.

Despite these differences, the Turkic languages continue to exhibit remarkable phonetic cohesion: common syllable types, shared consonantal inventories, and universal tendencies in prosody and phonological processes. This confirms the robustness of the Turkic phonetic typology and provides a framework for future diachronic and synchronic studies.

The findings of this article contribute to the typological and historical study of Turkic phonology. They also support broader linguistic discussions on language contact, convergence, and structural innovation within related language groups. Further instrumental phonetic research, especially on dialectal variation within Uzbek and acoustic properties across the Turkic spectrum, would offer even more precise insights into the ongoing evolution of these sound systems.

### REFERENCES

1. Abdullaev, A. Fonologiya uzbekskogo yazyka. Tashkent: Fan. 1990
2. Göksel, A., & Kerslake, C. Turkish: A Comprehensive Grammar. London: Routledge. 2005
3. Johanson, L. The structure of Turkic. In: Johanson & Csató (Eds.), The Turkic Languages. London: Routledge, pp. 30–66. 1998
4. Kuntze, C. Phonology of Kazakh. Bishkek University Press. 2000
5. Lewis, G. Turkish Grammar (2nd ed.). Oxford: Oxford University Press. 2001
6. Nazarov, A. Hozirgi o'zbek adabiy tili fonetikasi. Tashkent: O'qituvchi. 1976
7. Radloff, W. Proben der Volksliteratur der türkischen Stämme. St. Petersburg. 1893
8. Samoilovich, A. N. Vvedenie v tyurkskuyu filologiyu. Petrograd: Gosizdat. 1922
9. Vajda, E. Phonetic variation in Kyrgyz dialects. Central Asian Survey, 24(3), 245–261. 2005
10. Vaux, B. The Phonetics and Phonology of Turkish. Cambridge: Harvard Linguistics Working Papers. 2009