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ILLUSTRATION OF THE IPA

# Uzbek

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## Introduction

Uzbek (ISO 639-1: uz) is a Turkic language spoken mainly in Uzbekistan, where the language is accorded the 'state language' status (Figure 1). Outside Uzbekistan, ethnic Uzbek populations are scattered across and beyond Central Asia in such countries as Afghanistan, Tajikistan, Kyrgyzstan, Kazakhstan, China, and Saudi Arabia (Balcı, 2004; Yakup, 2020:411). Many Uzbeks in the diaspora speak one or more languages in addition to Uzbek for interethnic communication (Naby, 1984:11). Some ethnic Uzbek communities are reportedly being linguistically assimilated to ethnic groups that are dominant in their countries or regions (Shalinsky, 1979:12–13; Fevzi, 2013:256; Yıldırım, 2019:64). It is therefore unclear exactly what proportion of ethnic Uzbeks retain Uzbek as their first language today. In the case of ethnic Uzbeks in Xinjiang in China, gauging the extent of linguistic assimilation can be difficult because of the limited range of contrasting features that exist between their variety of Uzbek and Uyghur, the interethnic language of Xinjiang, with which it is generally mutually intelligible (Cheng & Abudureheman, 1987:1–2). The varieties of Uzbek spoken in Afghanistan and China have developed autonomously from those spoken within the borders of the former Soviet Union, and hence differ from the present-day standard Uzbek of Uzbekistan, a former Soviet republic, most notably in lexica but also in phonology, morphology, and syntax (Jarring, 1938; Abdullaev, 1979: Reichl, 1983; Cheng & Abudureheman, 1987; Hayitov et al., 1992:36; Gültekin, 2010).

The language variety whose phonology is described in the present article is the standardized variety of Uzbek used in Uzbekistan, where it is a preferred medium of official communication. Many Soviet (Rešetov, 1964:21; Guljamov, 1968:8; Shoabdurahmonov, 1976:7; Maxmudov, 1986:16; Rajabov, 1996:26) and non-Soviet (Sjoborg, 1962:237; Laude-Cirtautas, 1977:41; Waterson, 1980:xiv; Shōgaito, 1988) scholars have effectively concurred in taking the dialect of Tashkent to be the primary basis of standard Uzbek *fonetika* 'phonetics/phonology' and *orfoepija* 'orthoepy'. Attempts at shifting the basis of standard pronunciation away from the Tashkent dialect (Kamol, 1957:14; Rasulov et al., 1980:21–22; Sodiqov et al., 1981:68) emerged continually during Soviet times, but seem to have largely receded in post-Soviet Uzbekistan. Accordingly, all but one of the recordings accompanying

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**Figure 1.** Map of the main area where Uzbek is spoken.

the present article are from a speaker of Tashkent Uzbek.[1] The speaker (henceforth referred to simply as 'the main informant') is male, and was born in 1994. He had resided in the Chilonzor district of Tashkent for 21 years since the age of three before moving out of the city in 2018, when the recordings were made. As with most Uzbek speakers brought up in Tashkent, he is fluent in Russian.

## Consonants

| | Bilabial | Labio-dental | Alveolar | Alveolo-palatal | Palatal | Velar | Uvular | Glottal |
|---|---|---|---|---|---|---|---|---|
| Plosive | p b | | t d | | | k g | q | ʔ |
| Nasal | m | | n | | | ŋ | | |
| Tap | | | ɾ | | | | | |
| Fricative | | f v | s z | ɕ | | | χ ʁ | h |
| Affricate | | | t͡s | t͡ɕ d͡ʑ | | | | |
| Approximant | | | | | j | | | |
| Lateral approximant | | | l | | | | | |

[1] Due to scarcity of Russian loanwords in the recorded speech of the main informant, the recording for *TETs* 'thermal power plant' in the consonants section is from a different speaker, a female (Russian-dominant) bilingual Russian-Uzbek speaker (born in 1989) brought up in the Yunusobod district of Tashkent.

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| /p/ | *pesh* | /peɕ/ | ‘front’ | /f/ | *fahm* | /fahm/ | ‘quick-wittedness’ |
| /b/ | *besh* | /beɕ/ | ‘five’ | /v/ | *vahm* | /vahm/ | ‘fright’ |
| /t/ | *tor* | /tɔr/ | ‘narrow’ | /t͡ɕ/ | *chin* | /t͡ɕin/ | ‘genuine’ |
| /d/ | *dor* | /dɔr/ | ‘rope’ | /d͡ʑ/ | *jin* | /d͡ʑin/ | ‘genie’ |
| | | | | /ŋ/ | *jing* | /d͡ʑiŋ/ | ‘complaints’ |
| /s/ | *sol* | /sɔl/ | ‘raft’ | | | | |
| /z/ | *zol* | /zɔl/ | ‘adept’ | /k/ | *ko‘r* | /kor/ | ‘blind’ |
| /ɕ/ | *shol* | /ɕɔl/ | ‘woolen fabric’ | /g/ | *go‘r* | /gor/ | ‘tomb’ |
| /m/ | *mol* | /mɔl/ | ‘livestock’ | /q/ | *qo‘r* | /qor/ | ‘coal’ |
| /n/ | *nol* | /nɔl/ | ‘zero’ | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| /l/ | *lol* | /lɔl/ | ‘speechless’ | /χ/ | *xam* | /χam/ | ‘adroop’ |
| /j/ | *yol* | /jɔl/ | ‘mane’ | /ʁ/ | *g‘am* | /ʁam/ | ‘grief’ |
| /ɾ/ | *rol* | /ɾɔl/ | ‘role’ | /h/ | *ham* | /ham/ | ‘also’ |

(/ɾ/ is realized here as [ɾ̊]; see explanation below)

| | | | |
|---|---|---|---|
| /ʔ/ | *san’at* | /sanʔat/ | ‘art’ |
| /t͡s/ | *TETs* | /tet͡s/ | ‘thermal power plant’ |

The digraphs ‹ch›, ‹sh›, and ‹ng› each represent a single phoneme in Uzbek orthography, as does ‹g‘›, in which the inverted comma serves as a kind of diacritic indicating both fricativization and uvularization.

Voice Onset Time (VOT) discriminates between word-initial voiced and voiceless plosives, with the latter set of plosives showing VOT values indicative of a degree of aspiration (Figure 2). The limited amount of data considered here precludes one from drawing firm conclusions about VOT in Uzbek, though they seem to indicate the commonly reported effect of place of articulation on VOT values (Lisker & Abramson, 1964) for voiceless plosives.

The velar plosives /k/ and /g/ in native Uzbek words and loanwords nativized in Uzbek are normally palatalized to [kʲ] and [gʲ], respectively, before underlying (/i/, /e/, /ɜ/, /a/) or inserted ([ĭ]; see ‘vowels’) non-back vowels, or where the plosive closure is released in word-final position. Hence, for example, there is palatalization of velar plosives in such words as /kam/ [kʲam] ‘insufficient’, /gap/ [gʲap] ‘talk’, /tegdɜ/ [tegʲĭdɜ] ‘s/he touched’, in which [ĭ] is an inserted vowel, /bur͡t͡ɕak/ [bur͡t͡ɕakʲ] ‘corner’, and /kerak/ [kʲerakʲ] ‘necessary’.

The glottal plosive /ʔ/ distinguishes few minimal pairs. Its occurrence is limited to a fairly small proportion of loanwords from Arabic whose orthographic representations contain the sequence of a letter, the ‹’› symbol, and a vowel letter, such as *san’at* /sanʔat/ ‘art’ and *in’om* /inʔɔm/ ‘gift’ (Figure 3: left side). Note, however, that ‹’› in Uzbek orthography is not a representation of the glottal plosive but is merely a transliteration of Arabic word-medial *‘ayn* ‹ع› and *hamza* ‹ء›, which represent /ʕ/ and /ʔ/, respectively, in Arabic orthography. Thus, ‹’› may represent not /ʔ/ but /ː/ when it appears after a vowel letter, or

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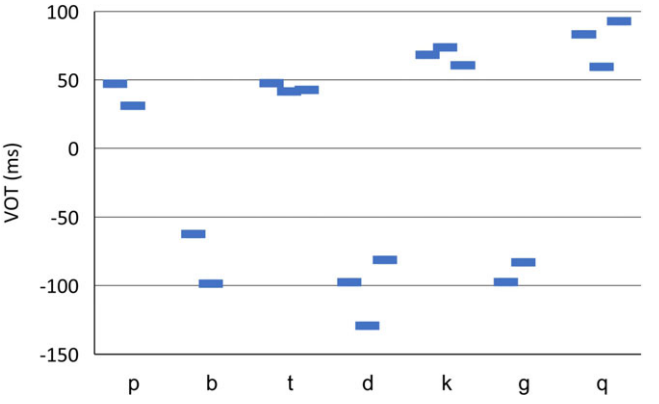


**Figure 2.** (Colour online) VOT values of the word-initial plosives in the test words of /peɕ/, /beɕ/, /tɔr/, /dɔr/, /kor/, /gor/, and /qor/ as produced by the main informant. Each bar represents a single token/repetition.

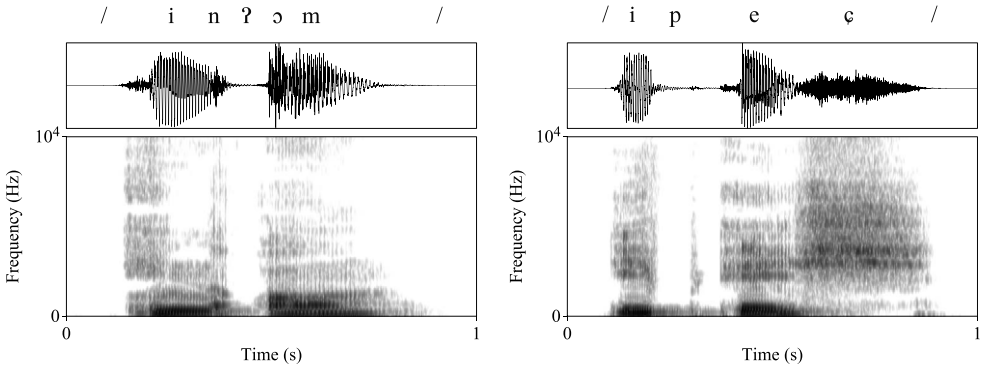


**Figure 3.** *in'om* /inʔɔm/ 'gift' (left), in which a glottal closure/constriction precedes the second vowel for signalling the presence of word-medial *'ayn* ‹ʿ› in the source language, and /ip eɕ/ [ipʔeɕ] 'weave (a) thread(s)!' (right), in which /eɕ/ 'weave!' is preceded by a boundary-marking glottal closure.

may represent no sound or phonetic feature whatsoever (Tog'ayev et al., 2012:36–37). Non-phonemic [ʔ] or glottal constriction optionally precedes the word-initial vowel for marking phrase and prosodic boundaries (Figure 3: right side).

The velar nasal /ŋ/ does not occur in word-initial position. In careful speech, word-final /ŋ/ can be produced with an audible release burst of the velar closure, as can be observed in the recording of /ɔŋ/ 'consciousness'.

The phoneme /ɾ/ does not occur word-initially in native Uzbek words. In non-word-initial position, /ɾ/ occurs in both loanwords and native words. Word-initial /ɾ/, which occurs only in loanwords, is realized as [ɾ] or [r], but can also be realized as [r̥] (as in the main informant's pronunciation of /rɔl/ 'role') or [r̝̊], though the latter are apparently considered less standard. Word-finally, /ɾ/ is usually realized as a trill, as it is in the main informant's pronunciation of /gor/ 'tomb'. Word-final /ɾ/ can also be either fully or partially devoiced, and can accompany frication (Klimenko, 1958:53), as it is in the main informant's pronunciation of /kor/ 'blind'. The trill component of the rhotic is often lost in its word-final realization, leaving only its fricative component intact. The recording of /bɔr/ 'existent' produced by the main informant exemplifies this type of fricative realization.

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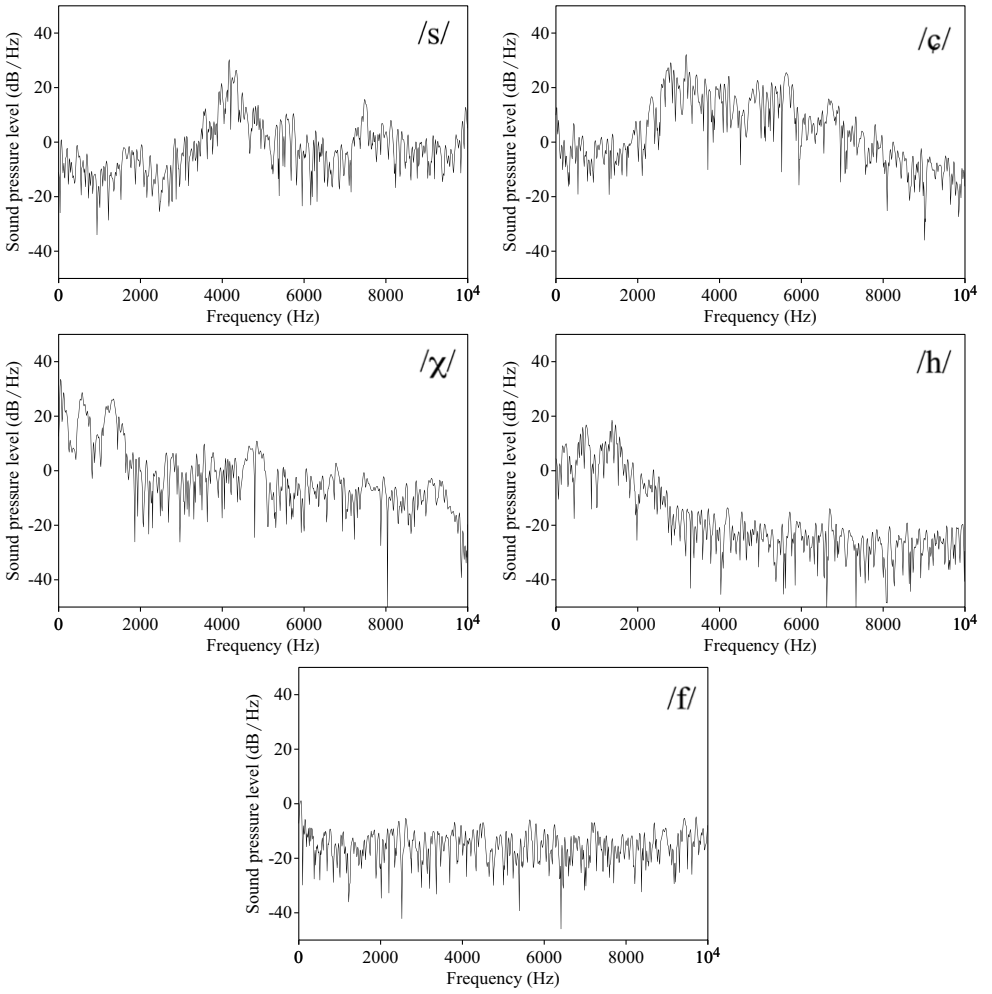


**Figure 4.** Spectra of word-initial /s/, /ɕ/, /χ/, /h/, and /f/ in the test words of /sɔl/, /ɕɔl/, /χam/, /ham/, and /fahm/ as produced by the main informant. Each spectrum was computed from a 40 ms window centred around the beginning to middle of each fricative to reduce coarticulation effects.

Tashkent Uzbek traditionally lacks a contrast between standard Uzbek /χ/ and /h/ (Rajabov, 1996:83). The main informant makes this distinction in his careful pronunciation (Figure 4), but often realizes /h/ as [x], as he does in the recording of /vahm/ [vaxšm] 'fright' accompanying this article.

A number of descriptive works published in the twentieth century, such as Borovkov (1959:682), Rešetov (1959:212–214), Kononov (1960:28–29), and Ismatullaev (1991:20), endorse the phonemic status of both /ɸ/, the voiceless bilabial fricative, and its voiced counterpart /β/. However, in today's standard Uzbek, the bilabial fricatives seem to be in the process of being replaced by their labiodental counterparts, namely /f/ and /v/ (Abdurahmonov, 1992:26; Hamroyev, 2004:25; Otamirzayeva & Yusupova, 2004:40; Matkarimova et al., 2013:10–11), possibly under the influence of Russian, whose own labial fricatives are labiodental. The bilabial fricative [ɸ] is still in use in Uzbekistan at large. For instance, monolingual Uzbek speakers in Bukhara can often be distinguished by their use

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of [ɸ] from Tajik-dominant Bukharan bilinguals who typically use [f] instead of [ɸ] in their speech. However, in recent decades, [ɸ] appears to be only equivocally perceived as the standard pronunciation for the Uzbek voiceless labial fricative phoneme.

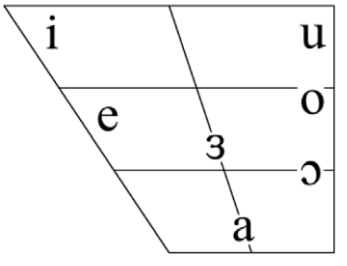
A number of descriptive and pedagogical treatments, including Kissen (1952:19, 74–76), Borovkov (1959:682), Kononov (1960:30), Safaev (1965:12), and Ismatullaev (1991:16), mention 'softness', i.e., palatalization, with regard to Uzbek /ɕ/, /t͡ɕ/, and /d͡ʑ/ (or certain major allophones thereof), often putting it in contrast with the 'hardness' of Russian /ʃ/ and /ʒ/, which are characterized by posterior articulation and/or a lack of palatalization (Jones & Ward, 1969:134, 137; Kamiyama, 2012; Yanushevskaya & Bunčić, 2015; Kochetov, 2017). In particular, Kissen (1952:74–75) describes the articulation of Uzbek /ɕ/ and /d͡ʑ/ as involving the tongue body being moved forward, the front-to-middle part of the tongue being raised towards the hard palate, and the tip of the tongue being lowered. These descriptions strongly suggest anterior tongue position, palatalization, and non-apical (laminal) articulation, for the phonemes.

However, the articulation of /ɕ/, /t͡ɕ/, and /d͡ʑ/ is subject to much inter- and intra-speaker variation, with these phonemes often being realized as [ʃ], [t͡ʃ], and [d͡ʒ]-like sounds, not only by some Tashkent Uzbek speakers but also by a number of newsreaders at the national television and radio broadcasting station. This synchronic variation precludes unequivocal identification of standard Uzbek /ɕ/, /t͡ɕ/, and /d͡ʑ/ as palatalized postalveolar consonants.

The fricative [ʑ] can occur as an allophone of /d͡ʑ/ where it precedes a plosive, e.g., in /ad͡ʑdaɾ/ [aʑdaɾ] 'dragon' as well as in some words of onomatopoeic origin. Otherwise, its occurrence is largely limited to loanwords from Russian.

The occurrence of the affricate /t͡s/ is limited to loanwords from Russian.

## Vowels




| | | | | |
|---|---|---|---|---|
| /i/ | ‹i› | /iz/ | *iz* | 'trace' |
| /e/ | ‹e› | /ez/ | *ez* | 'crush' |
| /a/ | ‹a› | /azm/ | *azm* | 'firm decision' |
| /ɔ/ | ‹o› | /ɔz/ | *oz* | 'few' |
| /o/ | ‹o‘› | /oz/ | *o‘z* | 'self' |
| /u/ | ‹u› | /uz/ | *uz* | 'tear off' |
| /ɜ/[2] | ‹i› | /bɜz/ | *biz* | 'we' |

The vowels in the trapezoid above are placed so as to conform to the formant frequency values of the Uzbek vowel phonemes produced by the main informant (Figure 5).

[2] No recording of /ɜ/ in isolation accompanies the present article, because its elicitation was not possible due to the absence of any orthographic representation uniquely assigned to /ɜ/.

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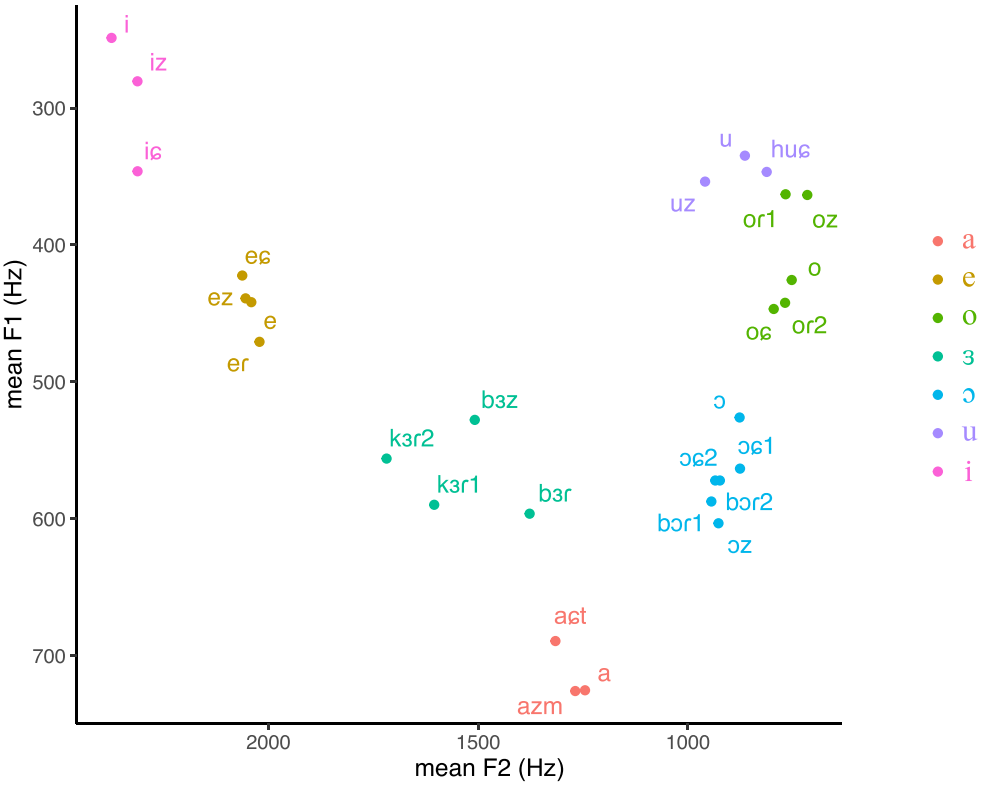


**Figure 5.** (Colour online) F1 and F2 values of Uzbek vowels produced in isolation and of those vowels produced in isolated words by the main informant. Numbers suffixed to some of the words distinguish between homographs. Each point represents a mean of three to five tokens.[3] The test words that do not appear in the lists accompanying the consonant and vowel charts are /aɕt/ 'Asht district', /bɜr/ 'one', /bɔr/ 'go!' (bɔr1), /bɔr/ 'existent' (bɔr2), /er/ 'husband', /eɕ/ 'weave!', /huɕ/ 'sense', /iɕ/ 'matter', /kɜr/ 'enter!' (kɜr1), /kɜr/ 'dirt' (kɜr2), /or/ 'braid!' (or1), /or/ 'mow!' (or2), /oɕ/ 'Osh city', /ɔɕ/ 'exceed!' (ɔɕ1), and /ɔɕ/ 'pilav' (ɔɕ2).

The inverted comma serves as a diacritic in ‹o'›. The diacritic orthographically distinguishes ‹o'› from ‹o› and indicates the greater closeness of /o/ as opposed to /ɔ/.

The vowels that are transcribed in the present description as /i/ and /ɜ/ distinguish no minimal pairs in standard Uzbek. It is therefore possible to identify them as allophones of a single phoneme, as in fact most textbooks and the current orthography of Uzbek do. The present description, on the other hand, recognizes their phonemic status on the basis of their phonetic distinctiveness and the existence of near-minimal pairs, of which there are not many, e.g., /iz/ 'trace' vs. /bɜz/ 'we' (see Figure 5). This practice is partly in line with that of Polivanov (1922), who proposes that seven vowel symbols including 'i' and 'ə' be used in transcribing Tashkent Uzbek.

In native Uzbek roots, /o/ occurs almost exclusively in root-initial syllables (Otamirzayeva & Yusupova, 2004:30). Some interjections which end in /o/ (Qo'ng'ulov, 1975) are exceptions to this rule.

Close vowels and /ɜ/ are frequently devoiced when adjacent to voiceless consonants or are elided outright, especially in unstressed syllables. The elision of /u/ and /ɜ/ in /kut͡ɕli/

[3] All the formant frequency data presented in Figure 5 and Table 1 were obtained from the audio data using Barreda's (2021) plugin for Praat (Boersma & Weenink 2022). R packages (R Development Core Team 2022; Wickham 2022) were used for data visualization in Figures 5 and 9.

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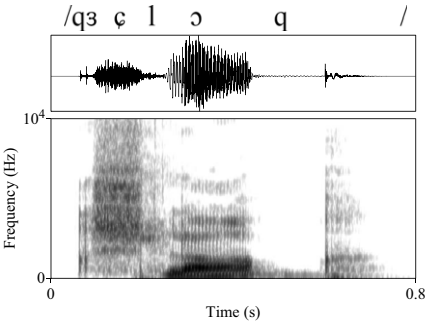


**Figure 6.** Elision of /ɜ/ in /qɜɕlɔq/ 'village'.

'strong' in the 'North Wind and the Sun' passage and /qɜɕlɔq/ 'village' (Figure 6) serve as examples. They are also highly susceptible to coarticulatory effects from adjacent sounds. Hence, for instance, the close realization of /ɜ/ in the palatal context of /plaɕɜga/ [plaɕĭgʲa] 'to his/her cloak' in the same passage.[4]

The phonetic realization of /ɔ/ ranges between [ɑ] and [ɔ̟]. This variability is observed among words, speakers, and even among utterances from a single speaker. Thus, for example, one speaker may produce [ɑt͡ɕ] and [bɔ̟r] for /ɔt͡ɕ/ 'hungry' and /bɔr/ 'existent', for which another may produce [ɔt͡ɕ] and [bɔ̟r]. Presumably because of this variability, some descriptions characterize the vowel phoneme as unrounded (Reshetov & Shoabdurahmonov, 1957:191; Doniyorov, 1980:51, 54) or as weakly rounded (Jamolxonov, 2009:70).

Many Uzbek dialects have front rounded vowels that contrast with back rounded vowels (Reshetov & Shoabdurahmonov, 1978:45–46). Such dialects, which are geographically widely distributed across and beyond Uzbekistan, also exist in some non-urban areas within the Tashkent region (Rešetov, 1952; Shoabdurahmonov, 1976). Perhaps owing to the existence of such dialects, some descriptive treatments of Uzbek postulate a phonological backness contrast in the non-dialectal (standard) variety (e.g., Coşkun, 2000:2–5; To'ychiboev & Hasanov, 2004:45; Yakup, 2020:414). Such treatments postulate that Uzbek has [ø]/[œ]/[ɵ]-like and [y]-like front rounded vowel phonemes, which they often transcribe as 'ö' and 'ü', as is customary among Turkologists. Thus, for example, Boeschoten (1998:358) writes in his description of Uzbek that 'there are minimal pairs such as *bol-* 'become, be' vs. *böl-* 'divide' and *uč* 'extremity' vs. *üč* 'three''.

Contrary to this observation, a formant frequency analysis of the close and close-mid rounded vowels produced by the main informant in the test words /bol/ 'become!' and /bol/ 'divide!', and in /ut͡ɕ/ 'fly!' and /ut͡ɕ/ 'three',[5] found no clear or consistent distinction between them (Table 1). This indicates that they are homophonemic in Tashkent Uzbek, hence their identical phonemic transcriptions (/bol/ and /ut͡ɕ/) in the present article and identical orthographic representations (*bo'l* and *uch*) in standard Uzbek. Note that if the backness contrast existed in his speech, the vowels in /bol/ 'divide!' and /ut͡ɕ/ 'three' would be front vowels with high F2 values and would contrast in backness—and hence also in formant frequency values—with those in their homographic counterparts, namely /bol/ 'become!' and /ut͡ɕ/ 'fly!'.

[4] /plaɕ/ is a Russian loanword whose source word, *plašč* 'cloak', ends in Russian /ɕ:/. Given the main informant's fluency in Russian, the formation of the palatal context in /plaɕɜga/ can be ascribed to the palatal nature of Russian /ɕ:/ and/or to that of Uzbek [ɕ] and [gʲ].

[5] This study contrasted /ut͡ɕ/ 'three' not with *uč* 'extremity' (Boeschoten 1998: 358) but with /ut͡ɕ/ 'fly!', another word that Boeschoten (1998: 365) transcribes as *uč*, in order that the pair of words should share the same dialectal vowel length (see below).

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**Table 1** Mean formant frequency values in Hz of the vowels in two homographic word pairs (three to four tokens per word) produced by the main informant

| | | F1 | | F2 | | F3 | |
|---|---|---|---|---|---|---|---|
| | | Mean | SD | Mean | SD | Mean | SD |
| /bol/ | 'become!' | 434 | 7 | 873 | 43 | 2833 | 161 |
| /bol/ | 'divide!' | 407 | 41 | 836 | 46 | 2890 | 95 |
| /ut͡ɕ/ | 'fly!' | 307 | 36 | 1077 | 212 | 2325 | 239 |
| /ut͡ɕ/ | 'three' | 310 | 24 | 895 | 226 | 2572 | 47 |

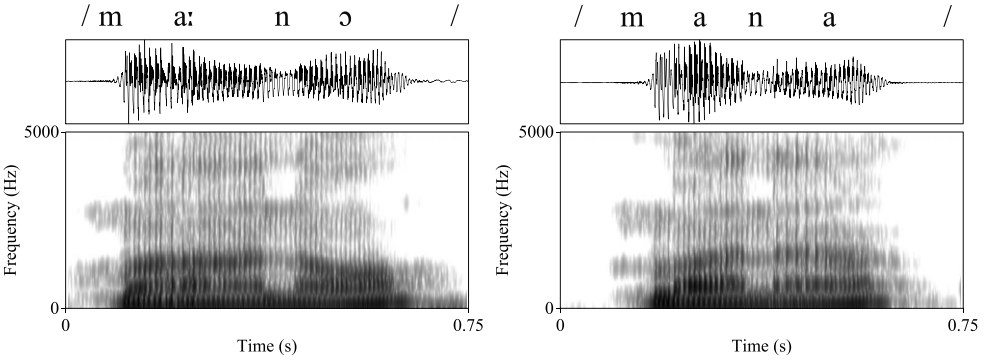


**Figure 7.** *ma'no* /ma:nɔ/ 'meaning' (left), an Arabo-Persian loanword, and *mana* /mana/ 'here; look' (right).

Vowel lengthening occurs in a number of words of foreign origin, though it distinguishes few minimal pairs. For example, /a:/ in /ma:qul/ 'acceptable' and /ma:nɔ/ 'meaning', both of which are loanwords, contrasts in length with /a/ in /maqɔl/ 'proverb', another loanword, and /mana/ 'here; look' (Figure 7). Some instances of vowel lengthening in Arabo-Persian loanwords are orthographically indicated with ‹'›, as in *ma'qul* /ma:qul/ and *ma'no* /ma:nɔ/, where the sequence of ‹a› and ‹'› represents /a:/.

Vowel length distinction in words of native origin exists in a number of Uzbek dialects (Tekin, 1995), such as those spoken in the Khorezm and Iqon-Qorabuloq areas (Abdullaev, 1961; Abdullaev, 1967; Dobos, 1974; Reshetov & Shoabdurahmonov, 1978:47; Madrahimov, 1999). As for Tashkent Uzbek, an Uzbek linguist/folklorist from Tashkent made a claim in 1935 that his native variety had two long (close) vowel phonemes in addition to having six short vowel phonemes (Junus, 1935:15). In addition, some dialects spoken in the vicinity of Tashkent, namely in and around Qoraxitoy in the Tashkent region, also reportedly utilize long vowels in native Uzbek words (Shoabdurahmonov, 1976:10), though it is unclear whether their length is phonological.

Perhaps contrary to what might be expected based on these facts, vowel length in native words is not phonological in present-day Tashkent Uzbek or in standard Uzbek. No consistent native vowel length distinction is observed in the main informant's speech. For example, /bɔr/ 'go!' vs. /bɔr/ 'existent' and /ot͡ɕ/ 'fade !' vs. /ot͡ɕ/ 'vengeance', which would be heterophonemic word pairs in most of the aforementioned dialects, with the first member of the pair having a shorter vowel than the second, are pronounced as homophonemic pairs by the main informant.[6]

[6] An analysis of 8 such word pairs (3 tokens per word) found no statistically significant effect of dialectal vowel length on vowel duration, but found a significant difference in vowel duration by word pair.

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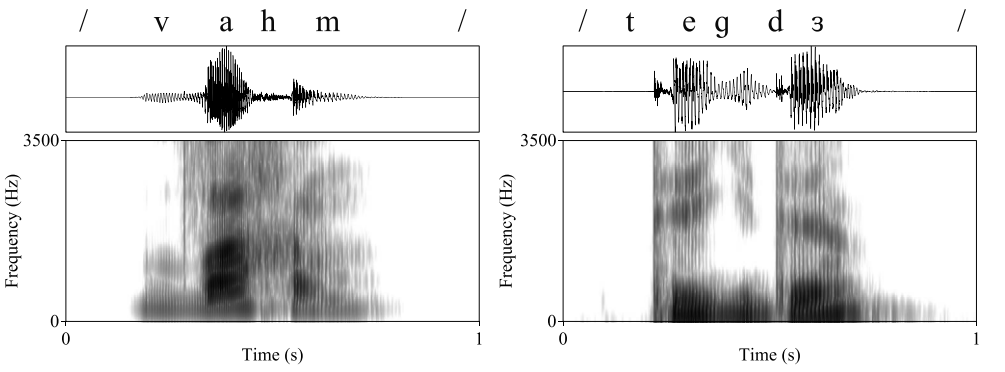


**Figure 8.** /vahm/ [vaxɜ̆m] 'fright', an Arabo-Persian loanword, in which the consonant cluster is broken up by an epenthetic vowel (left),[7] and /tegdʒ/ [tegʲĭdʒ] 's/he touched', in which a front vowel occurs between the two voiced plosives (right). /tegdʒ/ consists entirely of native Uzbek morphemes, thus /teg/-/dʒ/ 'touch-PST.3'.

Vowel insertion rarely receives mention in the Uzbek linguistic literature except in relation to vowel epenthesis in loanwords (Kononov, 1960:47–49; Figure 8: left side). However, insertion of vowels in Uzbek is not limited to loanwords. It also takes place in native Uzbek words, though little is known about what motivates it or what determines the quality of the inserted vowel. The audio data elicited from the main informant contain some instances of native Uzbek vowel insertion, of which /tegdʒ/ [tegʲĭdʒ] 's/he touched' contains a relatively well-defined and clearly audible inserted vowel (Figure 8: right side).

All the instances of vowel insertion are found in consonant clusters formed at syllable/morpheme boundaries where a velar or uvular plosive is followed by a consonant produced with a more anterior articulation, e.g., in /tegmɔq/ [tegʲĭmɔq] 'to touch' (/teg/-/mɔq/ 'touch-INF') and /jɔqdʒ/ [jɔqɜ̆dʒ] 'it was to someone's liking' (/jɔq/-/dʒ/ 'be of one's liking-PST.3').[8] This apparent bias towards heterorganic 'posterior-to-anterior' consonant clusters and the acoustic variability of the inserted vowels may lead one to a cautious speculation that native Uzbek vowel insertion results from minimization of gestural overlap in the clusters (Chitoran et al., 2002; Hall, 2006:407–410). However, the limitations of the data and the fact that native Uzbek vowel insertion is as yet an unexplored topic preclude any general discussion of the phenomenon.

## Suprasegmental features

Figure 9 shows three acoustic measurements (duration, mean f0, and mean intensity) taken from the vocalic portions of disyllabic and trisyllabic native Uzbek words recorded in citation form. The words, which the main informant read from a word list, are of different word classes and comprise mono- and multi-morphemic nouns, pronouns, verbs, and participles.

[7] As a reviewer points out, it is not entirely unfeasible that a vowel had been inserted between /h/ and /m/ in a colloquial variety of Arabic or Persian before the loanword was borrowed into Uzbek. I speculate that the presence of [ɜ̆] here resulted from Uzbek or Turkic vowel epenthesis, based on the following admittedly circumstantial evidence: 1) New Persian varieties, through which Uzbek is considered to have borrowed the majority of its loanwords from Arabic, permit a wide variety of consonant clusters in the coda position (Xaskašev 1985: 48; Mahootian 1997: 298–299), 2) vowel epenthesis in Arabic loanwords is commonplace in a number of other Turkic languages (e.g., Turkish *vahim*), and 3) Central Asian Arabic dialects have long been borrowers rather than lenders of loanwords (Chikovani 2003; Jastrow 2005: 133–139).

[8] In the latter example, [ɜ̆] is partially devoiced.

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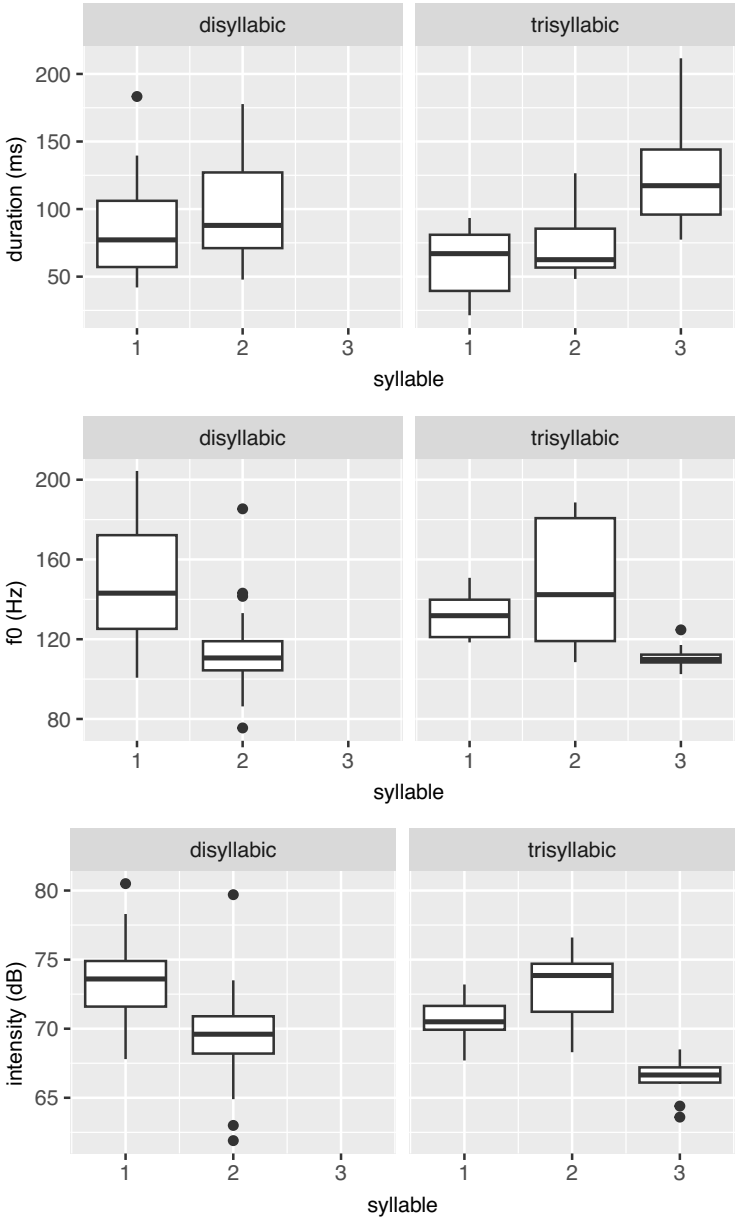


**Figure 9.** Duration, mean fundamental frequency, and mean intensity measures obtained from vocalic portions of syllables in 22 disyllabic and 5 trisyllabic native Uzbek words produced in citation form. The numbers of tokens are 82 for disyllabic words and 30 for trisyllabic words.

It can be observed in Figure 9 that the vowel duration increases in the final syllable and that both the mean frequency and mean intensity are the highest on the penultimate syllable.

Given that previous descriptions of Uzbek are unanimous in locating the primary lexical stress on the final syllable (Kononov, 1960; Sjoborg, 1962; Bodrogligeti, 2003), one potentially feasible interpretation of these observations is that vowel duration correlates with lexical stress in native Uzbek words and/or that certain acoustic properties (such

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as a high f0) of the penultimate syllable contribute to the perceived prominence of the final syllable. However, only words with canonical (final) stress are analysed in this study, due to the scarcity of words with non-canonical stress in the recorded speech of the main informant.[9] They were also read aloud in isolation. The observed increase in vowel duration could therefore be due to phrase-final lengthening rather than stress, and the penultimate rise in f0 might also result from intonational phenomena such as pitch accents. Future studies are therefore needed to clarify which acoustic properties correlate with lexical stress in Uzbek. In this respect, it may be worth noting that the aforementioned observations align with Athanasopoulou et al.'s (2020:7–8) findings on Uzbek lexical stress. Their findings are that the vowel in the final syllable is longer than the vowels in the preceding syllables and that f0 is raised in the penultimate syllable (intensity is not examined in their study). Like the present study, Athanasopoulou et al. (2020) obtained their results from words with canonical (final) stress. Unlike in the present analysis, the words they analysed consist of trisyllabic nouns that occur sentence-medially, within a noun phrase, and as the initial component of a compound noun. The fact that similar results are obtained across these two studies may suggest that Athanasopoulou et al.'s two findings on lexical stress in Uzbek are consistent across certain different phrasal and/or syllabic contexts.

Words which are identified in the literature as having non-canonical stress include some proper names, loanwords, and interrogative pronouns. Uzbek linguists are in agreement that certain morphemes repel stress. A list of such stress-repellent morphemes is found in Bodrogligeti (2003:41–43). Some stress-repellent suffixes share their morphemic and orthographic representations with other suffixes that do not repel stress. As a result, there are pairs of words derived from the same stem which are distinguished only by stress. Some textbooks (e.g., Oripov & Obidova, 1994:49; Andaniyozova et al., 2012:34) contain (non-exhaustive) lists of such word pairs.

Tashkent Uzbek, and hence also standard Uzbek, exhibit very limited vowel harmony. The near-absence of vowel harmony in Tashkent Uzbek is often ascribed to language contact in Central Asia, where Turkic languages, most of which are harmonizing languages, have been in contact with non-harmonizing Iranian languages for centuries (Polivanov, 1926:19; Polivanov, 1933; Menges, 1945). The deverbalizing suffix which may be realized as [q, ɜq, oq, uq] depending on phonological context is one of the few affixes that exhibit vestiges of harmony in standard Uzbek, with [uq] being invariably preceded by a stem-final syllable containing /u/.

## The North Wind and the Sun (Orthography)

Bir kun shimoliy shamol va quyosh qaysi biri kuchliroq ekanligi o'rtasida tortishib qolishibdi. Shu paytda ularning ko'zi plashga o'ranib yo'lda ketayotgan yo'lovchiga tushib, qaysi biri yo'lovchining plashini birinchi yechishga majbur etsa, o'sha kuchli hisoblanadi deb kelishibdi. Shunda shimoliy shamol bor kuch-qudrati bilan esishni boshlabdi-yu, lekin shamol qanchalik kuchayganligi sari, yo'lovchi ham shunchalik o'z plashiga o'ranib olibdi va shamol o'z fikridan qaytishga majbur bo'libdi. Shunda quyosh porlab chiqibdi va yo'lovchi

[9] The interrogative pronoun /qajsɜ/ 'which', which a number of descriptions identify as a word with non-final stress (Sjoborg 1962: 258; Kononov 1960: 54; Oripov & Obidova 1994: 48; Bodrogligeti 2003: 39) appears twice in the 'North Wind and the Sun' passage. It seems to carry not as high an f0 on the first syllable as the canonically stressed disyllabic words analysed here, while having a long vowel duration not in the final syllable but in the first syllable. These observations somewhat support the interpretation mentioned above, as does the cross-linguistic commonality of syllable duration as a correlate of lexical stress (Gordon & Roettger 2017), though the propensity of /ɜ/ for elision makes it difficult to interpret this observation.

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asta-sekin isib, tezda plashini yechib olibdi. Shunday qilib, shimoliy shamol quyoshning undan kuchli ekanligini tan olishga majbur bo‘libdi.

## The North Wind and the Sun (Phonemic transcription and morphemic gloss)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| bɜr | kun | ɕimɔlij | ɕamɔl | va | qujɔɕ | qajsɜ | bɜrɜ \| | kut͡ɕlirɔq |
| *Bir* | *kun* | *shimol-iy* | *shamol* | *va* | *quyosh* | *qaysi* | *bir-i* | *kuch-li-roq* |
| one | day | north-ADJZ | wind | and | sun | which | one-3 | strength-ADJZ-CMPR |

| | | | |
|---|---|---|---|
| ekanligɜ | ortasɜda | tɔrtɜɕɜb | qɔlɜɕɜbdɜ ‖ |
| *e-kan-lig-i* | *o‘rta-si-da* | *tort-ish-ib* | *qol-ish-ib-di.* |
| COP-PTCP-NMLZ-3 | middle-3-LOC | drag-RECP-CVB | remain-RECP-EV-PST.3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| ɕu | pajtda | ularniŋ | kozɜ \| | plaɕga | oranɜb | jolda \| |
| *Shu* | *payt-da* | *u-lar-ning* | *ko‘z-i* | *plash-ga* | *o‘ra-n-ib* | *yo‘l-da* |
| this | time-LOC | 3SG-PL-GEN | eye-3 | cloak-DAT | wrap-PASS-CVB | road-LOC |

| | | | | | |
|---|---|---|---|---|---|
| ketajɔtgan | jolɔvt͡ɕiga | tuɕɜb \| | qajsɜ | bɜrɜ | jolɔvt͡ɕiniŋ |
| *ket-ayotgan* | *yo‘lov-chi-ga* | *tush-ib,* | *qaysi* | *bir-i* | *yo‘lov-chi-ning* |
| go-PROG.PTCP | approach.NMLZ-er-DAT | descend-CVB | which | one-3 | approach.NMLZ-er-GEN |

| | | | | | | |
|---|---|---|---|---|---|---|
| plaɕɜnɜ | bɜrint͡ɕɜ | jet͡ɕɜɕga | | mad͡ʑburːr | etsa \| | oɕa |
| *plash-i-ni* | *bir-inchi* | *yech-ish-ga* | | *majbur* | *et-sa,* | *o‘sha* |
| cloak-3-ACC | one-ORD | take.off-NMLZ-DAT | | compelled | do-COND | that |

| | | | | | |
|---|---|---|---|---|---|
| kut͡ɕli | hisɔblanadɜ | deb | kelɜɕɜbdɜ ‖ | | ɕunda |
| *kuch-li* | *hisob-la-n-a-di* | *deb* | *kel-ish-ib-di.* | | *Shun-da* |
| power-ADJZ | calculation-VBZ-PASS-PRS-3 | COMP | come-RECP-EV-PST.3 | | this-LOC |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ɕimɔlij | ɕamɔl | bɔr | kut͡ɕ qudraːtɜ | | bɜlan | eɕː[10] \| | esɜɕnɜ |
| *shimol-iy* | *shamol* | *bor* | *kuch-qudrat-i* | | *bilan* | | *es-ish-ni* |
| north-ADJZ | wind | existent | strength.and.might-3 | | with | | blow-NMLZ-ACC |

| | | | | | | |
|---|---|---|---|---|---|---|
| bɔɕlabdɜju \| | leːkin | ɕamɔl | qant͡ɕalik | kut͡ɕajganligɜ | | sarɜ \| |
| *bosh-la-b-di=yu,* | *lekin* | *shamol* | *qanchalik* | *kuch-ay-gan-lig-i* | | *sari,* |
| head-VBZ-EV-PST.3=and | but | wind | how.much | strength-VBZ-PTCP-NMLZ-3 | | forward |

[10] Here /eɕː/ represents misread /esɜɕ/. The main informant immediately corrects it in self-repair to /esɜɕ/ in the ensuing phrase /esɜɕnɜ/.

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| | | | | | | |
|---|---|---|---|---|---|---|
| jolɔvt͡ɕi | ham | ɕunt͡ɕalik | oz | plaɕɜga | oranɜb | ɔlɜbdɜ ‖ |
| *yo‘lov-chi* | *ham* | *shunchalik* | *o‘z* | *plash-i-ga* | *o‘ra-n-ib* | *ol-ib-di* |
| approach.NMLZ-er | also | so.much | self | cloak-3-DAT | wrap-PASS-CVB | take-EV-PST.3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| va | ɕamɔl | oz | fikrɜdan | qajtɜɕga | mad͡ʑbuːr | bolɜbdɜ ‖ |
| *va* | *shamol* | *o‘z* | *fikr-i-dan* | *qayt-ish-ga* | *majbur* | *bo‘l-ib-di.* |
| and | wind | self | idea-3-ABL | return-NMLZ-DAT | compelled | become-EV-PST.3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| ɕunda | qujɔɕ | pɔrlab | t͡ɕɜqɜbdɜ | va | jolɔvt͡ɕi | aːsta sekin |
| *Shun-da* | *quyosh* | *porla-b* | *chiq-ib-di* | *va* | *yo‘lov-chi* | *asta-sekin* |
| this-LOC | sun | shine-CVB | go.out-EV-PST.3 | and | approach.NMLZ-er | gradually |

| | | | | | |
|---|---|---|---|---|---|
| ɜsɜb \| | tezda | plaɕɜnɜ | jet͡ɕɜb | ɔlɜbdɜ ‖ | ɕundaj |
| *isi-b,* | *tez-da* | *plash-i-ni* | *yech-ib* | *ol-ib-di.* | *Shun-day* |
| get.warm-CVB | quick-LOC | cloak-3-ACC | take.off-CVB | take-EV-PST.3 | this-like |

| | | | | | |
|---|---|---|---|---|---|
| qɜlɜb | ɕimɔlij | ɕamɔl | qujɔɕniŋ | undan | kut͡ɕli |
| *qil-ib,* | *shimol-iy* | *shamol* | *quyosh-ning* | *un-dan* | *kuch-li* |
| make-CVB | north-ADJZ | wind | sun-GEN | 3SG-ABL | power-ADJZ |

| | | | | |
|---|---|---|---|---|
| ekanligɜnɜ | tan | ɔlɜɕga | mad͡ʑbuːr | bolɜbdɜ ‖ |
| *e-kan-lig-i-ni* | *tan* | *ol-ish-ga* | *majbur* | *bo‘l-ib-di.* |
| COP-PTCP-NMLZ-3-ACC | share | take-NMLZ-DAT | compelled | become-EV-PST.3 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | third person | COP | copula | PASS | passive |
| 3SG | third person singular | CVB | converb | PL | plural |
| ABL | ablative | DAT | dative | PROG | progressive |
| ACC | accusative | EV | evidential | PRS | present |
| ADJZ | adjectivizer | GEN | genitive | PST | past |
| CMPR | comparative | LOC | locative | PTCP | participle |
| COMP | complementizer | NMLZ | nominalizer | RECP | reciprocal |
| COND | conditional | ORD | ordinal | VBZ | verbalizer |

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## The North Wind and the Sun (Free translation)

One day, the North Wind and the Sun were disputing which of them was stronger. At that moment, they noticed a passenger who was walking down the road wrapped in a cloak, and they agreed that the one who made the passenger take off his cloak first would be judged the stronger. Then the North Wind began to blow with all its might, but the stronger the wind, the more tightly the passenger wrapped himself in his cloak, and the Wind was forced to abandon this attempt (lit. its idea). Then the Sun shone (in a thorough manner) and the passenger gradually warmed up and soon took off his cloak (to his benefit). Thus, the North Wind was compelled to admit that the Sun was the stronger of the two (lit. stronger than it).

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## References

Abdullaev, Fattax Abdullaevič. 1967. *Fonetika xorezmskix govorov*. Tashkent: Fan.
Abdullaev, Fattoh Abdullaevich. 1961. *O'zbek tilining Xorazm shevalari*. Tashkent: O'zbekiston SSR Fanlar Akademiyasi Nashriyoti.
Abdullaev, N. 1979. Ob uzbekskix govorax afganistana. *Sovetskaja tjurkologija*, 6, 62–70.
Abdurahmonov, X. 1992. Orfoepiya va imlo. In X. Abdurahmonov, A. Pafiev, & D. Shodmonqulova (Eds.). *O'zbek tilining amaliy grammatikasi*, pp. 11–67. Tashkent: O'qituvchi.
Andaniyozova, Dilrabo Ro'ziqulovna, Gavhar Ro'ziqulovna Andaniyozova, & Zohida Rasulovna Muqimova. 2012. *Hozirgi o'zbek adabiy tili (oliy o'quv yurtlariga kiruvchilar va ona tilimizni mustaqil o'rganuvchilar uchun qo'llanma)*. Tashkent: Muharrir.
Athanasopoulou, Angeliki, Irene Vogel, & Hossep Dolatian. 2020. Acoustic properties of word and phrasal prominence in Uzbek. *Proceedings of the Workshop on Turkic and Languages in Contact with Turkic*, 5, 1–15.
Balcı, Bayram. 2004. The role of the pilgrimage in relations between Uzbekistan and the Uzbek community of Saudi Arabia. *Central Eurasian Studies Review*, 3(1), 16–18.
Barreda, Santiago. 2021. Fast Track: Fast (nearly) automatic formant-tracking using Praat. *Linguistics Vanguard*, 7(1), 20200051. https://www.degruyter.com/journal/key/lingvan/7/1/html.
Bodrogligeti, András J. E. 2003. *Academic reference grammar of modern literary Uzbek (volume 1)*. Muenchen: Lincom Europa.
Boersma, Paul & David Weenink. 2022. Praat: Doing phonetics by computer. Version 6.2.17. http://www.praat.org/
Boeschoten, Hendrik. 1998. Uzbek. In Lars Johanson & Éva Á. Csató (Eds.). *The Turkic languages*, pp. 357–378. London: Routledge.
Borovkov, Aleksandr Konstantinovič. 1959. Kratkij očerk grammatiki uzbekskogo jazyka. In S. F. Akobirov, Z. M. Ma"rufov, & A. T. Xodžaxanov (Eds.). *Uzbeksko-russkij slovar'*, pp. 678–727. Moscow: Gosudarstvennoe izdatel'stvo inostrannyx i nacional'nyx slovarej.
Cheng, Shiliang & Abudureheman. 1987. *Wuzibiekeyu jianzhi*. Beijing: Minzu Chubanshe.
Chikovani, Guram. 2003. Central Asian Arabic dialects: The main lexical peculiarities. In I. Ferrando & J. J. Sanchez Sandoval (Eds.). *AIDA 5th conference proceedings*, pp. 1–12. Cádiz: Servicio de Publicaciones de la Universidad de Cádiz.
Chitoran, Ioana, Louis Goldstein, & Dani Byrd. 2002. Gestrual overlap and recoverability: Articulatory evidence from Georgian. In Carlos Gussenhoven & Natasha Warner (Eds.). *Laboratory Phonology*, 7, 419–447. Berlin: Mouton de Gruyter.
Coşkun, Volkan. 2000, *Özbek Türkçesi grameri*. Ankara: Türk Dil Kurumu.
Dobos, Éva. 1974. An Oghuz dialect of Uzbek spoken in Urgench. *Acta Orientalia Academiae Scientiarum Hungaricae*, 28(1), 75–97.

Downloaded from https://www.cambridge.org/core. 25 Jul 2025 at 05:52:25, subject to the Cambridge Core terms of use.

Doniyorov, Xudoyberdi. 1980. Fonetika. In Shonazar Shoabdurahmonov, Mazluma Asqarova, Azim Hojiev, Inomjon Rasulov, & Xudoyberdi Doniyorov (Eds.). *Hozirgi o'zbek adabiy tili (1 qism)*, pp. 33–77. Tashkent: O'qituvchi.
Fevzi, Firuz. 2013. Kuzey Afganistan (Güney Türkistan) Türk boyları üzerine bir araştırma. In Marcel Erdal, Yunus Koç, & Mikail Cengiz (Eds.). *Dilleri ve kültürleri yok olma tehlikesine maruz Türk toplulukları*, pp. 255–258. Ankara: Hacettepe Üniversitesi Türkiyat Araştırmaları Enstitüsü Yayınları.
Gordon, Matthew & Timo Roettger. 2017. Acoustic correlates of word stress: A cross-linguistic survey. *Linguistics Vanguard*, 3(1), 1–11.
Guljamov, Ja. G. 1968. *Grammatika tashkentskogo govora*. Tashkent: Fan.
Gültekin, Mevlüt. 2010, Afgan Özbekçesinin Seripul ağzında *-GAn* eki (Çeviren: Esra Yavuz). *Turkish Studies*, 5(1), 1437–1451.
Hall, Nancy. 2006. Cross-linguistic patterns of vowel intrusion. *Phonology*, 23, 387–429.
Hamroyev, M. A. 2004. *O'zbek tilidan ma'ruzalar to'plami*. Tashkent.
Hayitov, Sh. A., N. S. Sobirov, & A. S. Legay. 1992. *Xorijdagi o'zbeklar*. Tashkent: Fan.
Ismatullaev, Xajrulla Xikmatullaevič. 1991. *Samoučitel' uzbekskogo jazyka*. Tashkent: O'qituvchi.
Jamolxonov, Hasanboy. 2009. *O'zbek tilining nazariy fonetikasi ("O'zbek tili"dan o'quv qo'llanma)*. Tashkent: Fan.
Jarring, Gunnar. 1938. *Uzbek texts from Afghan Turkestan*. Lund: Christian Wilhelm Kyhl Gleerup.
Jastrow, Otto. 2005. Uzbekistan Arabic: A language created by Semitic-Iranian-Turkic linguistic convergence. In Éva Á. Csató, Bo Isaksson, & Carina Jahani (Eds.). *Linguistic convergence and areal diffusion: Case studies from Iranian, Semitic and Turkic*, pp. 133–139. London: Routledge.
Jones, Daniel & Dennis Ward. 1969. *The phonetics of Russian*. Cambridge: Cambridge University Press.
Junus, ƠJazi Alim. 1935. *Ozвek lahçalarini tasnifda вir taçriвa*. Tashkent: OzSSR Davlat Naşrijati.
Kamiyama, Takao. 2012. *Roshiago onsei gaisetsu*. Tokyo: Kenkyusha.
Kamol, Faxri. 1957. Kirish. In Faxri Kamol (Ed.). *Hozirgi zamon o'zbek tili*, pp. 7–45. Tashkent: O'zbekiston SSR Fanlar Akademiyasi Nashriyoti.
Kissen, Il'ja Al'bertovič. 1952. *Kratkij očerk fonetiki russkogo jazyka v sopostavlenii s fonetikoj uzbekskogo jazyka*. Tashkent: Gosudarstvennoe Učebno-pedagogičestoe Izdatel'stvo UzSSR.
Klimenko, Aleksandr Andreevič. 1958. *Élementy fonetiki uzbekskogo jazyka*. Tashkent: Ministerstvo prosveščenija UzSSR respublikanskij naučno-metodičeskij kabinet po zaočnomu obučeniju.
Kochetov, Alexei. 2017. Acoustics of Russian voiceless sibilant fricatives. *Journal of the International Phonetic Association*, 47(3), 321—348.
Kononov, A. N. 1960. *Grammatika sovremennogo uzbekskogo literaturnogo jazyka*. Moscow: Izdatel'stvo Akademii Nauk SSSR.
Laude-Cirtautas, Ilse. 1977. On the development of literary Uzbek in the last fifty years. *Central Asiatic Journal*, 21(1), 36–51.
Lisker, Leigh & Arthur S. Abramson. 1964. A cross-language study of voicing in initial stops: Acoustical measurements. *Word*, 20(3), 384–422.
Madrahimov, Otanazar. 1999. *O'zbek tili o'g'uz lahjasining qisqacha qiyosiy lug'ati*. Urganch: Xorazm.
Mahootian, Shahrazad. 1997. *Persian*. London: Routledge.
Matkarimova, Dildora, Nargis Mamatqulova, & Nasiba Mamatjanova. 2013. *Ona tilini o'rganamiz*. Tashkent: Alisher Navoiy nomidagi O'zbekiston Milliy Kutbxonasi Nashriyoti.
Maxmudov, Axmad. 1986. *Soglasnye uzbekskogo literaturnogo jazyka*. Tashkent: Izdatel'stvo Fan UzSSR.
Menges, Karl H. 1945. Indo-European influences on Ural-Altaic languages. *Word*, 1, 188–193.
Naby, Eden. 1984. The Uzbeks of Afghanistan. *Central Asian Survey*, 3(1), 1–21.
Oripov, Qobuljon & Mahmuda Obidova. 1994. *Ifodali o'qish*. Tashkent: O'qituvchi.
Otamirzayeva, S., & M. Yusupova. 2004. *O'zbek tili (fonetika, grafika, orfoepiya va orfografiya)*. Tashkent: O'AJBNT Markazi.
Polivanov, Evgenij Dmitrievič. 1922. Zvukovoj sostav Taškentskogo dialekta. *Nauka i prosveščenie*, 1, 17–19.
Polivanov, Evgenij Dmitrievič. 1926. *Étnografičeskaja xarakteristika uzbekov*. Tashkent: Uzbekskoe Gosudarstvennoe Izdatel'stvo.
Polivanov, Evgenij Dmitrievič. 1933. *Uzbekskaja dialektologija i uzbekskij literaturnyj jazyk*. Tashkent: Uzbekskoe Gosudarstvennoe Izdatel'stvo.
Qo'ng'ulov, R. Q. 1975. Undov. In G'. A. Abdurahmonov, Sh. Sh. Shoabdurahmonov, & A. P. Hojiev (Eds.). *O'zbek tili grammatikasi I tom: Morfologiya*, pp. 591–601. Tashkent: Fan.
R Development Core Team. 2022. R: A language and environment for statistical computing (version 4.2.1). R Foundation for Statistical Computing, Vienna, Austria.
Rajabov, Nazar. 1996. *O'zbek shevashunosligi*. Tashkent: O'qituvchi.
Rasulov, I., X. Doniyorov, & A. Hojiev. 1980. Kirish. In Shonazar Shoabdurahmonov, M. Asqarova, A. Hojiev, I. Rasulov, & X. Doniyorov (Eds.). *Hozirgi o'zbek adabiy tili (1 qism)*, pp. 5–32. Tashkent: O'qituvchi.

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Reichl, K. 1983. Syntactic interference in Afghan Uzbek. *Anthropos*, 78, 481–500.
Rešetov, Viktor Vasil'evič. 1952. *Kuraminskie govory taškentskoj oblast'* Tashkent: Izdatel'stvo Akademii Nauk UzSSR.
Rešetov, Viktor Vasil'evič. 1959. *Uzbekskij jazyk, čast' 1. Vvedenie. Fonetika.* Tashkent: Gosudarstvennoe Učebno-pedagogičeskoe Izdatel'stvo UzSSR.
Rešetov, Viktor Vasil'evič. 1964. *The Uzbek national language* (translated from the Russian by Helen Chavchavadze). Washington, D.C.: Center for Applied Linguistics, Washington, D.C.
Reshetov, Viktor Vasilyevich & Shonazar Shoabdurahmonov. 1957. Fonetika. In Faxri Kamol (Ed.). *Hozirgi zamon o'zbek tili*, pp. 183–209. Tashkent: O'zbekiston SSR Fanlar Akademiyasi Nashriyoti.
Reshetov, Viktor Vasilyevich & Shonazar Shoabdurahmonov. 1978. *O'zbek dialektologiyasi*. Tashkent: O'qituvchi.
Safaev, A. 1965. Fonetika. In O. Azizov, M. Mirzaev, A. Safaev, & A. Bo'rivekov (Eds.). *O'zbek va rus tillarining qiyosiy grammatikasi*, pp. 5–17. Tashkent: O'qituvchi.
Shalinsky, Audrey. 1979. *Central Asian emigres in Afghanistan: Problems of religious and ethnic identity*. New York: Afghanistan Council.
Shoabdurahmonov, Shonazar. 1976. *Toshkent oblasti o'zbek shevalari (Fonetika, morfonoliya, leksika, sintaksis)*. Tashkent: Fan.
Shōgaito, Masahiro. 1988. Uzubekugo. In Takashi Kamei, Rokurō Kōno, & Eiichi Chino (Eds.). *Gengogaku daijiten dai 1-kan*, 829–833. Tokyo: Sanseido.
Sjoborg, Andrée Frances. 1962. The phonology of standard Uzbek. In Nicholas Poppe (Ed.). *American studies in Altaic linguistics*, pp. 237–262. Bloomington: Indiana University Press.
Sodiqov, Abduazim, Abduzuhur Abduazizov, & Muhammadavaz Irisqulov. 1981. *Tilshunoslikka kirish (Universitetlar va pedagogika institutlarining filologiya fakul'tetlari studentlari uchun darslik)*. Tashkent: O'qituvchi.
Tekin, Talat. 1995. *Türk dillerinde birincil uzun ünlüler*. Istanbul: Simurg.
Tog'ayev, To'lqin, Gulbahor Tavaldiyeva, & Muyassar Akromova (Eds.). 2012. *O'zbek tiligning kirill va lotin alifbolaridagi imlo lug'ati*. Tashkent: Sharq.
To'ychiboev, Bosim & B. Hasanov. 2004. *O'zbek dialektologiyasi*. Tashkent: Abdulla Qodiriy nomidagi Halq Merosi Nashriyoti.
Waterson, Natalie. 1980. *Uzbek-English dictionary*. Oxford: Oxford University Press.
Wickham, Hadley. 2022. tidyverse. R package version 1.3.2.
Xaskašev, Tolib. 1985. Fonetika. In Šarofiddin Rustamov & Razzoq Ğafforov (Eds.). *Grammatikai zaboni adabii hozirai tojik (jildi 1)*, pp. 13–78. Dushanbe: Doniš.
Yakup, Abdurishid. 2020. Uyghur and Uzbek, the Southeastern Turkic languages. In Martine Robbeets & Alexander Savelyev (Eds.). *The Oxford guide to the Transeurasian languages*, pp. 411–429. Oxford: Oxford University Press.
Yanushevskaya, Irina, & Daniel Bunčić. 2015. Russian. *Journal of the International Phonetic Association*, 45 (2), 221–228.
Yıldırım, Fikret. 2019. Çin'deki Özbekler ve Özbekçe. *Uluslararası Uygur Araştırmaları Dergisi*, 13, 57–86.

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