

Nasal Assimilation in Kazakh and Kyrgyz

This paper is concerned with the nasal assimilation of suffix-initial [-continuant, -velar] consonants in Kazakh and Kyrgyz, which are closely related Kipchak Turkic languages. Novel data based on recordings made with native speakers will be presented from Kyrgyz showing that nasal assimilation is possible not only in Kazakh but also in Kyrgyz, contrary to claims found in the literature. It will be argued that this nasal assimilation is a phonetically motivated assimilation process but it is constrained by the morphology.

It has been reported in the literature that Kazakh has nasal assimilation in suffixes (e.g., Kuhn 2014). That is, the suffix-initial labial or coronal consonant becomes a nasal if it attaches to a stem ending in a nasal and the suffix contains a non-initial nasal. This is illustrated in (2), where the stem *kyn* ‘day’ ends in a nasal, and the suffixes that follow it all contain a non-suffix-initial nasal. In this environment the suffix-initial consonant becomes a nasal. (1) and (3) show that the nasal assimilation is only possible if both the stem-final and a non-suffix-initial sound are nasals. In (1) the stem-final is not a nasal, in (3) the suffixes do not contain a nasal, and in both cases nasal assimilation of the suffix-initial consonant is disallowed.

- (1) *kœz-diŋ* ‘eye-gen’, *kœz-den* ‘eye-abl’, *kœz-ben* ‘eye-instr’, *kœz-bin* ‘eye-sg1’
(2) *kyn-niŋ* ‘day-gen’, *kyn-nen* ‘day-abl’, *kyn-men* ‘day-instr’, *kyn-min* ‘day-sg1’
(3) *kyn-di* ‘day-acc’, *kyn-de* ‘day-loc’, *kyn-be* ‘day-ques.part’, *kyn-biz* ‘day-pl1’

Nasal assimilation does not take place if the suffix-initial sound is a continuant (e.g., in case of the suffix /-sɪŋ/ (Sg2)) or if it is a velar (e.g., the perfect /-GAn/ (= -gan, -gen, -kan, -ken)), as illustrated in (4) and (5). The explanation for the lack of nasal assimilation in (4) is that fricatives cannot be nasalized; nasal assimilation in (5) is not possible because Kazakh does not allow /ŋ/ in onset. (The velar nasal is prohibited from word-initial position, and there are no attested /Cŋ/ clusters in Kazakh.)

- (4) *kyn-siŋ* ‘day-sg2’ (not **kyn-niŋ*)
(5) *ojan-gan* ‘wake up-perf’ (not **ojan-ŋan*)

The conditioning environment for nasal assimilation is summarized in rule format in (6). Nasal assimilation is only possible in four Kazakh suffixes because the conditions required for the assimilation are only satisfied in these suffixes. These are the genitive /-NIŋ/ (= -niŋ, -nuŋ, -diŋ, -duŋ, -tiŋ, -tuŋ), the ablative /-DAn/ (= -dan, -den, -tan, -ten, -nan, -nen), the instrumental /-Men/ (= -men, -ben, -pen) and the singular first person predicate agreement marker /-MIŋ/ (= -min, -mun, -bin, -bun, -pin, -pun). It should be noted that the sonorant in suffix-initial position becomes a stop homorganic with the sonorant if it follows a less or equally sonorous sound (cf. syllable contact law as proposed by e.g. Gouskova 2004). Nasal assimilation overrides the sonority distance constraints required across syllables by the syllable contact law.

- (6) [-cont, -velar] → [-cont, -velar, +nasal] | [nasal]#__V[nasal]

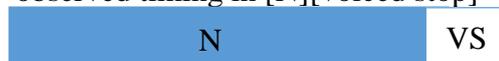
Kyrgyz is claimed to not have nasal assimilation, but recordings made by the author show that nasal assimilation of the suffix-initial consonant is possible in the Northern (Bishkek) dialect of Kyrgyz. (I made recordings with a Southern (Osh) speaker, who did not have nasal assimilation. At this point, it is not clear whether we are dealing with a dialectal or idiolect variation in Kyrgyz.) There are only two suffixes where nasal assimilation could occur in Kirghiz: the ablative /-DAn/ (-dan, -den, -don, -dœn, -tan, -ten, -ton, -tœn, -nan, -nen, -non, -nœn) and the genitive /-NIŋ/ (-nuŋ, -niŋ, -nun, -nyn, -duŋ, -din, -dun, -dyn, -tuŋ, -tin, -tun, -tyn). (In contrast to Kazakh, suffix-initial /m/ does not alternate in Kyrgyz, and there are no /B/-initial suffixes that contain a nasal.) I found that nasal assimilation is optional in case of /-DAn/, but it does not seem to be possible with /-NIŋ/.

I propose that the explanation for the Kazakh and Kyrgyz nasal assimilation lies in the phonetics of [+nasal][+voice, +stop] clusters. Cohn & Riehl (2012) show that the internal timing of [nasal][voiced stop] clusters is not equally divided between the nasal and the voiced stop segments, rather there is a significantly longer nasal part followed by a very short oral component; this is illustrated in (7).

(7) expected timing in [N][voiced stop]



observed timing in [N][voiced stop]



The short duration of the stop segment in these clusters makes it harder to perceive. Thus the most salient perceptual cue for identifying the stop segment is the vowel following the cluster. In [nasal][vowel] sequences the vowel is partially nasalized, whereas in [nasal][voiced stop][vowel] sequences there is no nasalization on the vowel. In case of Kazakh and Kyrgyz suffix-initial nasal assimilation, a nasal follows the [nasal][voiced stop][vowel] sequence (i.e., [nasal][voiced stop][vowel][nasal], e.g., n#dAn). In this case, the vowel preceding the second nasal is nasalized. This results in the loss of the main cue for the voiced stop (recall that the plain quality of the vowel is the main perceptual cue for the voiced stop preceding the vowel), therefore the consonant preceding the now partially nasalized vowel is perceived (and then, via hypocorrection, produced) as a nasal.

An additional constraint, not yet noted in the literature, on the suffix-initial nasal assimilation is that the nasal following the suffix-initial consonant must be contained in the same suffix. If the voiced stop and the following nasal are hetero-morphemic, the nasal assimilation is not going to take place. In (8) the verbal stem *ojan-* ‘wake up’ is followed by the past tense suffix /-DI/ (-di, -du, -ti, -tu) which is then followed by the second person agreement suffix. Even though the agreement suffix is a nasal and the verbal stem ends in a nasal, nasal assimilation of /d/ does not take place. Compare (8) with *kyn* ‘day’ + /-DAn/ (ablative), which is realized as *kyn-nen* ‘from the day’ (cf. (2)). In (9), the initial /d/ of the locative suffix /-DA/ (-da, -de, -ta, -te) does not become a nasal, despite being followed by the nasal-initial agreement suffix /-MIn/. Similarly, in (10) the suffix-initial /b/, found in the negative suffix, does not become nasalized, because the nasal following it is not contained in the same suffix. Compare (10) with *kyn-men* ‘with the day’ (cf. (2)), which is derived from *kyn* ‘day’ and the instrumental suffix /-Men/.

(8) *ojan-du-ŋ* (wake up-past-sg2) ‘you woke up’ (not **ojan-nu-ŋ*)

(9) *divan-da-mun* (sofa-loc-sg1) ‘I am on the sofa’ (not **divan-na-mun*)

(10) *ojan-ba-ŋuz* (wake up-neg-imp.polite) ‘don’t wake up! (polite)’ (not **ojan-ma-ŋuz*)

(8)-(10) indicate that it is not sufficient for the nasal assimilation to merely have the string [nasal][voiced stop][V][nasal]; the second nasal can only nasalize the preceding vowel, which is a precondition for the nasal assimilation of the suffix-initial voiced stop, if it is in the same morphological domain as the vowel.

Selected references

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