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History of the intervocalic velars in the Turkic languages

László Károly

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The history of the intervocalic velars not only provides a colourful picture of sound changes, but, on the basis of a thorough analysis, clarifies some historical phenomena of the Turkic languages. It also supplies a key for the etymology and better understanding of certain Turkic words.

The initial part of the article briefly discusses and sums up those common sound changes of /VkV/ and /VgV/ which are already discussed in the Turkological literature. In the main section those cases are investigated which do not follow these regular tendencies. Interpretations and/or solutions are provided for many of these cases.

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1. Introduction

Throughout the history of the Turkic languages, the original Old Turkic velars, i.e. /k/ and /g/ with their allophonic variants, present various ways of sound changes.¹ This phenomenon makes it possible to use velars as key elements, e.g., in the classification of the Turkic languages. For instance, the word *taglıg* ‘having mountains, mountainous’, likely one of the most cited Turkic words, can present the history of /g/ in primary stems preceding consonants and in word final position. It was used in all the classifications proposed by Turkologists; e.g. in an article by Tekin (1990), where the previous classifications are also collected and analysed, six subgroups within the Turkic languages were defined on the base of the word *taglıg*: (1) the *taylıg*-group, i.e. Northern dialects of Altay; the Lower Chulym, Kondom and Lower Tom dialects; (2) the *tūlu*-group, i.e. Altay; (3) the *tōlū*-group, i.e. Kirghiz; (4) *taylıq*-group, i.e. Uzbek, New Uygur; (5) the *tawlı*-group, i.e. the Kipchak branch; and (6) the *Taylı*-group, i.e. Salar and the Oguzic branch.² In his new attempt to

1 One of the earliest papers discussing the history of the velars (gutturals) in Turkic is Bang (1915).

2 My *Taylı*-group puts two distinct groups together which are separate in Tekin (1990: 13) based on the initial consonant, i.e. *taylı* for Salar and *daylı* for the Oguzic branch, but it is not related to our discussion.

classify the Turkic languages, Schönig (1997–1998/1: 123, 124 and /3: 137) also uses the word *taglīg* as a key word.³

Similarly to the preconsonantal and word final positions, velar sounds render a colourful history in intervocalic position, too. In the present paper the history of intervocalic velars will be described with an emphasis on the analysis of those words which do not follow the regular, or sometimes referred to as strong, tendencies.

2. Intervocalic velars in Turkic⁴

There exist several books in which the history of the velars in intervocalic position is discussed, see e.g. Räsänen (1949: 112–124, 153–154), Ramstedt (1957: 85–86), Tenišev (1984: 190–192, 197–198, 200–201, 204–206) and Johanson (1998: 100–101). A common feature of these descriptions is that they operate with a limited number of examples, thus only describing some seemingly general tendencies. However, using the word *eki*, *ekki* ‘two’ in order to exemplify regular tendencies can lead to false conclusions. Another important point is that /VgV/ is divided into groups according to the surrounding vowels, e.g. *aga*, *ugu*, *ägä*, *ögü*, etc., because they strongly determined the history of the voiced velar. In this chapter I provide a brief but well-selected list of examples which will suffice to illustrate the typical traits. All the special cases, i.e. everything outside of the strong tendencies, will be discussed in the following parts of the article.

VkV

The voiceless velar and uvular plosives are preserved in the Turkestan branch, in Khaladj, and in the Oguzic branch if the preceding vowel was short:

- (1) *čiqar*-⁵ ‘zastavljat’ (ili) pozvoljat’ vyjti; otravljat’; puskat’’, *tükil*-⁶ ‘vylivat’sja, prolivat’sja, razlivat’sja’, *buqa*⁷ ‘nehološčennyj byk, byk-proizvoditel’ (Uzb),⁸ *čiqar*- ‘vynosit’; vyvozit’, eksportirovat’’, *tökül*- ‘vylivat’sja, lit’sja, prolivat’sja,

3 It does not concern our present topic, but it is worth noting that the classification of Schönig (1997–1998), although it also has some problems, is much more adequate than the older ones proposed since the very beginning of Turcology up to Tekin (1990).

4 My corpus, on the base of which the strong tendencies were also defined, is based on the dictionary of Clauson (1972). All of its words containing /VkV/ or /VgV/ segments were analysed and compared with historical and modern counterparts.

5 Cf. OT *čikar*- ‘to bring out, send out’.

6 Cf. OT *tökül*- ‘to be poured out’.

7 Cf. OT *buka* ‘bull’.

8 In order to keep a reasonable limit in size, neither the standard abbreviation of the languages and sources, nor the bibliographical details of the frequently used dictionaries and works are given in the article. For further reference and a complete list of the abbreviations and literature, see Róna-Tas and Berta (2011).

razlivat'sja', *buqa* 'byk-proizvoditel', bugaj' (NUyg), *boqa, puqa* 'byk, vol' (YUyg);

- (2) *siqu-*⁹ 'gepreßt, gedrückt werden', *tökül-* 'ausgegossen werden, sich ergießen' (Khal);
- (3) *çıkar-* 'to take out, extract, expel, bring out, push out', *dökül-* 'to be poured; to be shed', *akit-*¹⁰ 'to cause to flow, to pour, to shed' (Tt), *čäkil-*¹¹ 'tjanut'sja, vtjagivat'sja; otstupat', otojti, otodvigat'sja' (Az), *čikar-* 'vytaskivat', otvinčivat', snimat', vyryvat', vydergivat', *čekil-* 'vzvešivat'sja (na vesax); byt' vyčerpnutym', *akit-* 'zastavit' (velet', dat'), teč' (lit', prolivat')' (Gag), *čikar-* 'vytaskivat', izvlekat', vynimat', *čekin-*¹² 'stesnjat'sja, smuščat'sja, čuvstvovat' nelovkost'', *akit-* 'polivat', lit' (dlja umyvanija)' (Tkm).

In the Oguzic branch it became voiced if the preceding vowel was long. This voiced consonant has disappeared through spirantization, and the preceding vowel has become long due to compensatory lengthening in the Western Oguzic languages:

- (4) *yögal-*¹³ 'propadat', isčezat' (postepenno); terjat'sja' (Tkm);
- (5) *yoğal-* [yōal] 'to cease to exit, vanish' (Tt).

It has become voiced in the Kipchak branch, in the South Siberian branch and in Yakut.¹⁴ Chuvash has *media lenis* in this position:

- (6) *čigär-* 'zastavljat' (ili) pozvoljat' vyjtu; vypuskat'; otpravljat', *buğa* 'bugaj' (Kum), *buğa* 'byk' (KrchBlk), *buğa* 'byk' (CtTat), *čigär-* 'dostavat', vynimat', vyvodit', *tögül-* 'vylivat'sja' (KarT, KarCr), *buğa* 'byk' (KarCr), *ciğar-* 'polučat', dobyvat'; vynimat' (KarH), *čigär-* 'zastavljat' vyjti; vyvodit'; vynosit', *tügel-* 'lit'sja, vylivat'sja, vylit'sja, razlivat'sja, prolivat'sja', *buğa* '(dial.) byk' (Tat), *siğar-* 'vynosit'; vyvozit'; vyvodit'; vynimat', *buğa, boğa* 'byk' (Bashk), *šiğar-* 'to publish; to proclaim; to eliminate, to exclude', *šegin-* 'to move backward; to release, to give leave (of absence)' (Kaz), *šiğar-* 'vyvodit'; vypuskat', *buğa* 'byk' (Kklp), *šiğar-* 'vyvodit', vynosit', vyvozit', *buğa* 'byk' (Nog), *čigär-* 'vyvodit', vyvozit',

9 Cf. OT *sikil-* 'to be squeezed, compressed'.

10 Cf. OT *akit-* 'to make (liquid, etc.) flow; to send out (a party, etc.) to raid'.

11 Cf. OT *čäkil-* 'to be pulled'.

12 Cf. OT *čäkin-* 'to draw back, withdraw (Intr.)'.

13 Cf. OT *yökal-* 'to perish, be destroyed or lost; to disappear'.

14 The voiced velar is often spirantized in the Turkic languages, but this phenomenon is not always indicated in the orthographies.

vypuskat'; vynimat'', *tögül-* 'vysypat'sja, ssypat'sja, rassypat'sja, prosypat'sja; vylivat'sja' (Kirg);

- (7) *sagīs*¹⁵ 'um; mysl', zamysel' (Tuv), *coğīs*⁻¹⁶ 'drat'sja, bit'sja (v meste s kem-čem-l.)', *sagīs* 'um; mysl'' (Khak), *soguš-*, *sogīs-* 'drat'sja, sražat'sja', *sagīs*, *sagīs*, *sagič* 'um, mysl', дума, serdce', *tögül-* 'vysypat'sja, rassypat'sja, razlivat'sja, prolivat'sja' (Alt);
- (8) *oğus-* 'udarjat', bit', kolotit'', *ağın-*¹⁷ 'vspominat', upominat'; napominat'; toskovat', skučat'' (Y);
- (9) *šuxal-* [šuyal] 'propadat', isčezat', terjat'sja', *täkän*⁻¹⁸ [tägän] 'lit'sja, vylivat'sja, razlivat'sja, prolivat'sja', *yuxäm*¹⁹ [yuyäm] 'tečenie' (Chuv).

While Azerbaijani and Salar represent spirantization in velar environments, Tuvan has a voiceless glottal fricative in certain cases:

- (10) *čixar-* 'vynimat', vynosit', vysosivat', vyvodit'' (Az), *čixar-* 'vytaskivat'' (Sal);
- (11) *bu''ha* 'byk, bugaj' (Tof).

The following figure summarizes the history of /VkV/:

	debuccalization		spirantization		voicing		spirantization		elision	
	h	< x	<	k	>	g	>	γ	>>	ø
Tuvan		Azeri		Oguzic / V ₋		Kipchak		Oguzic / V̄ ₋		
[+velar]		Salar		Turki		South Siberian				
		[+velar]		Khalaj		Yakut				
						Chuvash [g]				

VgV

The history of the voiced velar and uvular plosives is a bit more complicated than that of the voiceless ones, because the surrounding vowels, as noted above, strongly

15 Cf. OT *sakīs* 'counting, calculation; thought, care, worry'.

16 Cf. OT *sokuš-* 'to beat, crush one another'.

17 Cf. OT *sakīn-* 'to think'.

18 Cf. OT *dökün-* 'to pour (e.g. water) over oneself'.

19 Cf. OT *akīm* 'a single act of flowing'.

determined their development. In those languages where there was/is a tendency to change the /g/ to a semi-vowel in intervocalic position, rounded vowels can result in a /g/ >> /w/ change, and the unrounded vowels in a /g/ >> /y/ one. In palatal words even the rounded environment can result in a /g/ >> /y/ change; see the examples below. Another distinguishing feature is a stronger tendency for change between front vowels, see e.g. Khalaj where the position of the intervocalic /g/ in velar words is very stable, but in palatal environments it can change to /y/: *teyün*²⁰ ‘miteinander in Konflikt geraten, sich überkreuzen’.

The intervocalic /g/ has been preserved in the Turki branch; in Azerbaijanian, in Turkmen and in Khalaj usually in velar environments:

- (12) *âğil*²¹ ‘xlev, korotnik, saraj dlja skota’, *bağir*²² ‘pečen’, *tugun*²³ ‘uzel; uzelok’ (Uzb), *ağil*, *eğil* ‘xlev; korjušnja; skotnyj dvor’, *bağir*, *beğir* ‘pečen’, *tügün* ‘uzel; uzelok, zavjazka’ (MUyg), *ayil*, *âyil* ‘dvor, selenie’ (YUyg), *payir*, *payır* ‘pečen’ (Sal);
- (13) *ağir*²⁴ ‘tjaželyj, veskij, uvesistyj; trudnyj’ (Az), *agir* ‘tjaželyj; gruznyj; uvesistyj, imejuščij bol’šoj ves’ (Tkm);
- (14) *ayil* ‘Viehhürde, Schafstall’, *ayır* ‘schwer’ (Khal).

It has changed to a labial fricative in Chuvash:

- (15) *yivär* ‘tjaželyj’, *pëver* ‘(anat.) pečen’, *tëvë* ‘uzel, uzelok; petlja’ (Chuv).

Depending on the environment, the Kipchak and the Oguzic branches present a labial fricative, or one of the semi-vowels /w/ and /y/:

- (16) *avir* ‘tjaželyj’, *bavir* ‘pečen’, *pečenka*, *töyen* ‘uzel; uzelok, svërtok’ (Tat), *awir* ‘tjaželyj’, *bawir* ‘pečen’, *töyön* ‘uzel; vypuklost’ na čëm-l.; bugorok; komok’ (Bashk), *awir* ‘heavy; hard, difficult’, *bawir* ‘liver’, *tüyin* ‘(bot.) tuber; knot; (fig.) kernel, basic idea, nucleus’ (Kaz), *awir* ‘(v razn. znač.) tjaželyj; trudnyj’, *bawir* ‘pečen’ (Kklp), *avir* ‘tjaželyj, imejuščij bol’šoj ves, vesomyj’, *bavir* ‘pečen’, *pečenka*’ (Nog), *tüyün* ‘uzel’, *üyür* ‘kosjak; stado; staja’ (Kirg), *avur* ‘tjaželyj, gruznyj’, *bavur* ‘(anat.) pečen’ (Kum), *awur* ‘tjaželyj’, *bawur* ‘pečen’ (KrchBlk), *avur* ‘tjaželyj; trudnyj; medlennyj’ (CrTat), *avur* ‘tjaželyj’, *bavur*

20 Cf. OT *tägin*- ‘to reach, attain’.

21 Cf. OT *agil* ‘an enclosure for livestock; cattle-pen, sheep-fold; a settlement or group of tents’.

22 Cf. OT *bagir* ‘the liver’.

23 Cf. OT *tügün* ‘a knot’.

24 Cf. OT *agir* ‘heavy’.

‘pečen’, pečenka’ (Kar), *tivin* ‘uzel’ (KarH), *tüyünčik* ‘uzel, uzelok, svértok’ (KarCr);

- (17) *kavun*²⁵ ‘muskmelon, melon’, *kavur*²⁶ ‘to fry, to roast, to dry’, *düğün* [düyün] ‘wedding feast; circumcision feast’ (Tt), *buzov*²⁷ ‘telenok’, *düyün* ‘uzel, zavjazka; suk v brevne, v doske’ (Az), *gāvun* ‘dynja’, *buzav* ‘(ust.) telenok’, *düvün* ‘uzel; šiška, narost’ (Tkm).

Due to strong contraction the segment /VgV/ changed to a long vowel in the South Siberian branch, in Yakut, in Gagauz and in Kirghiz:

- (18) *āl* ‘selenie; tabor’, *bār* ‘pečen’ (Tuv), *āl* ‘selenie, naselennyj punkt, derevnja; (obl.) ulus’, *pār* ‘pečen’’, *ōr*²⁸ ‘stado; tabun; staja’, *tūnjek* ‘uzelok, svjazka’ (Khak), *pūr* ‘pečen’; serdce’, *ūs*²⁹ ‘rot; otverstie’, *ūr* ‘kosjak, tabun; stado, staja’, *tüyün*, *tün* ‘uzel’ (Oyr);
- (19) *iāy*³⁰ ‘djadja (po materinskoj linii bezotnositel’no k polu govorjaščego)’ (Y);
- (20) *ār* ‘tjaželyj, trudnyj; medlennyj’, *āz* ‘rot, usta, past’’, *dūn* ‘svad’ba; svadebnyj’ (Gag);
- (21) *ōr* ‘tjaželyj; trudnyj’, *bōr* ‘pečen’ (Kirg).

Yakut most often renders a diphthong in the place of the segment /VgV/:

- (22) *īar* ‘tjaželyj; gruznyj’, *bīar* ‘pečen, pečenka’, *uol* ‘syn; mal’čik; paren’, junoša’ (Y).

Turkish drops the /g/ in velar environment, and the preceding vowel becomes long:

- (23) *ağır* [āīr] ‘heavy, weighty; hard; grave, severe, dangerous’, *ağız* [āīz] ‘mouth; opening; entrance’, *yuğur-*, *yoğur-*³¹ [yūur, yōur] ‘to knead’ (Tt).

In extreme cases, sometimes in the neighbourhood of a /y/, the segment /VgV/ contracts to a short vowel in the Kipchak and in the Oguzic branches:

25 Cf. OT *kagun* ‘melon’.

26 Cf. OT *kagur-* ‘to parch (grain and the like); to bake, roast’.

27 Cf. OT *buzagu* ‘a calf’.

28 Cf. OT *ōgūr* ‘a herd’.

29 Cf. OT *ağız* ‘the mouth’.

30 Cf. OT *tagay* ‘maternal uncle’.

31 Cf. OT *yugur-* ‘to knead (dough, etc.)’.

(24) *dayi* ‘djadja’ (Kklp), *tay ake* ‘djadja’ (Kirg), *ul*³² ‘syn’ (Tat), *ul* ‘syn’ (Bashk), *ul* ‘son’ (Kaz), *ul* ‘syn’ (Nog);

(25) *dayı* ‘maternal uncle’, *yirmi*³³ ‘twenty’ (Tt), *dayi* ‘djadja (brat materi)’ (Az).

The following figure summarizes the history of the segment /VgV/:

g / γ	labialization >	v	elision >>	∅
g / γ	approximation >	w / y	elision >	∅
Turki		Chuvash		South Siberian (V̄)
Azerbaijani [+velar]		Kipchak		Gagauz (V̄)
Turkmen [+velar]		Oguz		Kirghiz (V̄)
Khalaj [+velar]		Khalaj [-velar]		Yakut (V̄, VV)
		Oyrot [-velar]		Turkish (V̄V)

3. Out of the strong tendencies

A detailed analysis of the whole corpus makes evident that there are a great number of words in the Turkic languages which do not follow the above described strong tendencies. These cases will be discussed and analysed in the following sub-chapters. This part of the article does not intend to present either the full corpus of the ‘irregular’ words, or a detailed analysis of the single items. The main goal is to define and establish the full set of characteristic and determining factors on the basis of which the detailed analysis can be realised in the future.

3.1. Oguzic influence on some Kipchak languages

The Crimean Tatar and Crimean Karaim languages were strongly influenced by Ottoman Turkish. As a result of this contact situation, a great number of Oguzic loanwords can be found in both languages. Regarding the history of the intervocalic velars, the Kipchak and the Oguzic languages behave differently. This phenomenon can be used in the separation of certain Oguzic loanwords. For instance, the presence of an intervocalic /k/ in those words where the other Kipchak languages have a voiced /g/ indicates the status of the word: e.g. Crimean Tatar *čiqar-* ‘vyvodit’;

32 Cf. OT *ogul* ‘offspring, child’.

33 Cf. OT *yigirmi* ‘twenty’.

vypuskat'; vytjagivat'; vynimat'' and *yïqil*-³⁴ 'svalit'sja, padat'', as opposed to the Kipchakoid forms **čïgar*-, **yïgil*-, are loanwords from Ottoman Turkish. Sometimes both the Kipchakoid and the Oguzic variants are present; see e.g. Crimean Karaim *yïqil*-, *yïgil*- 'padat', opuskat'sja'. The following words also represent Oguzic elements in Crimean Tatar and Crimean Karaim:

Oguzic	Crimean Tatar and Crimean Karaim	Kipchakoid
<i>ağir</i>	→ <i>ağir</i> 'tjaželyj; trudnyj; medlennyj' (CrTat), <i>ağir</i> 'tjaželyj; trudnyj' (KarCr)	↔ * <i>awir</i>
<i>bağir</i>	→ <i>bağir</i> 'grud'; pečen' (ust.)' (CrTat), <i>bağir</i> 'pečen'; pečenka' (KarCr)	↔ * <i>bawir</i>
<i>oğul</i>	→ <i>ağul</i> 'mal'čik' (CrTat), <i>oğul</i> 'syn' (KarCr)	↔ * <i>ul</i>
<i>tügün</i>	→ <i>tügün</i> 'svad'ba' (KarCr) ³⁵	↔ * <i>tüyün</i>
	'wedding'	'knot'

3.2. Geminated velars in intervocalic position

There are words in the Turkic languages that have geminated velars in intervocalic position.³⁶ Many of them came into being on the boundary of two adjacent morphemes, see e.g. *baku* 'a look-out' < **bak-gu* ← *bak*- 'to look at' with the suffix -*gU* and *tikän* 'thorn' < **tik-gän* ← *tik*- 'to insert' with the suffix -*gAn*.

Investigating the words with geminated velars, a noteworthy phenomenon can be detected: while there is no difference between the development of the double velars /kk/ or /gg/ and the single velars /k/ or /g/ in most of the Turkic languages, the Kipchak branch renders different developments for the two types: as opposed to the single velars, the double ones are mostly resistant to sound changes such as voicing, spirantization or approximation. Although the sound group /VkV/ regularly changed to /VgV/ in the Kipchak languages, the Kazakh word *baqïla*- (*baqi*+*lA*-) 'to observe, check, inspect' has preserved the /k/. This is the case with the Kirghiz word *tiken* 'koljučka; zanoza' which also preserved the voiceless velar.

A possible answer for this special behaviour is that the voicing of /k/ took place in the Kipchak branch earlier than the degemination of /kk/. As a result of this order, /kk/ could not change to /g/. Similarly, the voiced velar /gg/ also could not change to an approximant, because its degemination started later in time. For a summary of the typical scenarios in the Kipchak branch, see the following figure:

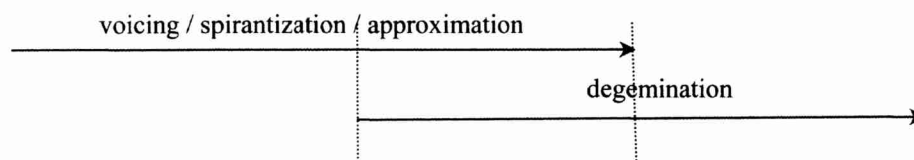
34 Cf. OT *yïkil*- 'to collapse, fall down'.

35 Not only the preservation of intervocalic /g/, but the meaning 'wedding' also strengthen the status of the word.

36 A short overview of the geminated consonants in Old Turkic was written by Bazin (1968).

$$\begin{array}{l}
 */kk/^{PT} > /k/^{Kip} > /g/ > /ɣ/ \\
 */k/^{PT} > /g/ > /ɣ/^{Kip} \\
 */gg/^{PT} > /g/ > /ɣ/^{Kip} > /w y/ > /ø/ \\
 */g/^{PT} > /ɣ/ > /w y/^{Kip} > /ø/
 \end{array}$$

In certain cases the voicing process could happen in the Kipchak languages even if a word originally had a double consonant, see below, e.g., the word *ywkaru* ‘upwards’ < **ywk-garu* with voiced /g/ in some Kipchak languages. Such words indicate that the two changes, i.e. degemination and voicing/spirantization/approximation, overlapped each other, and the process of degemination could happen in certain cases so early that some words with original geminates were able to take part in the voicing process:



In sections 3.2.1 to 3.2.3 those Turkic words will be discussed which do not follow the strong tendencies described under 2. The analysis of the data will be based on the two groups of overlapping sound changes (voicing / spirantization / approximation vs. degemination) in the Kipchak languages.

3.2.1. Words with clear etymological background

As mentioned above the word *baku* ‘a look-out’ comes from the verbal base *bak-* ‘to look at’, and it is a derivative in *-gU*.³⁷ Already Kāšgarī (545) correctly analysed this word, stating that it was ‘originally with double *qāf*’. Modern Uygur has another derivative of *bak-* in *-gUčī*, which also shows the same phenomenon, cf. *baquči* ‘prismatrivajuščij, uxaživajuščij’. The word is unfortunately not common in the modern Turkic languages, but the Kazakh form *baqila-* ‘to observe, check, inspect’, with the additional ending *+lA-*, may go back to the same origin. In this case the preservation of the intervocalic /k/ in Kazakh is the result of the original double consonant.

The word *soku* ‘mortar’ also shows the simplification of a geminate on morpheme boundary. It is a derivative of the verb *sok-* ‘to beat, crush’ with the same suffix *-gU*. Kāšgarī (545) gives its original form also with geminate (*soqqu*).

³⁷ The suffix *-gU* appearing already in the Old Turkic sources, was a projection participle, not a word formative element, but words in *-gU* sometimes were lexicalized. For further details on this, see Erdal (2004: 302–306).

Sanglax (245r18), the Middle Turkic dictionary of Muḥammad Maḥdī khan, cites the word with two *qāf*: *soqqu* ‘a large wooden mortar (*hāwan*)’. In some modern languages this geminate is still preserved, or there are other, sometimes very recent, derivatives also with geminated /kk/:

- (26) *suqī*, *awan-suqī*, *awan-sōqī* ‘stupa, stupka’ (SibTat), *soqqa* ‘mortar’ (Kaz), *zoku*, *zokgu*, *zokku* ‘büyük taş dibek’ (TiD), *soqqī* ‘stupka; stuk’ (KhakQbR, KhakSR), *sok*, *sokī*, *sokkī*, *sokpa* ‘stupa’ (Alt).

The unvoiced velar in Kirghiz *soku* ‘stupa (derevjannaja)’, instead of a Kipchakoid **sogu*, also argues for an original geminated velar.

The word *tikān* ‘thorn’, i.e. ‘the stinging one’, is most likely a derivate from the verb *tik-* ‘to insert’ with the participle-like formative *-gAn*; see also Erdal (1991: 385). Kāšgarī (202) has already noted in his dictionary that this word originally had a geminate, cf. **tikān* ‘thorn (šawk)’. This pronunciation is only for lightness. By rule one should double the *kāf* and say: *tikkān*. The modern Kipchak data also point to this original geminate:

- (27) *tiken* ‘koljučka; zanoza’ (Kirg), *tiken* ‘prickly bushes, thorn, thorny, splinter’ (Kaz), *tikān* ‘koljučki (u nek-ryx rastenij)’ (Bashk).³⁸

The word *yaka* ‘the edge, or border’, if its widely accepted etymology is valid, also had a geminated velar: *yaka* < **yakka* < **yak-ga*. It is namely a derivative of the verb *yak-* ‘to approach, or be near’ in *-gA*, see e.g. Erdal (1991: 381). This word can be found in all the Turkic languages, and there is a great number of data supporting a geminated velar

- (28) *yaka* ‘vorot, vorotnik’ (Tat), *yaqa* ‘der Kragen, der Rand, der Ufer’, *jaqa* ‘der Kragen, der Rand, die Grenze’ (TatKR), *jaka* ‘vorotnik, (v nekotoryx mestax) odežda, kraj, bereg, predgor’e, (tjan’š. str.) mauërlat’ (Kirg), *yaqa* ‘vorotnik’ (CrTat),³⁹ *yaqa* ‘vorotnik’ (KarSh).

However there are examples with a voiced velar:

38 There are other derivatives from the verb *tik-* which also had geminates, see e.g. *tikū* ‘a piece’: *bīr tikū āt* ‘a slice of meat’. Kāšgarī (546) notes that ‘[i]ts root-form has a double *kāf* which was lightened...’ There appears a similar form in the Chagatay dictionary of Pavet de Courteille as *tikkā* ‘pièce’, *tikkā tikkā* ‘en pièces’. See further *bir tike* ‘nemnožko, čutočku’ (Kirg) and *tikā* ‘nemnogo, čut’-čut’ (Bashk). Another word is *tiküč* ‘pastry-cook’s prick’ in Kāšgarī (180) < **tik-güč* with the instrumental formative *-gUč*, see Erdal (1991: 358).

39 The Crimean Tatar word can also be a loanword from Ottoman Turkish.

- (29) *yāğa* ‘vorot, vorotnik, (étn.) nagrudnik (ženskoe nagrudnoe ukrašenie iz našityx materiju serebrjanyx monet, korallov i dragocennyx kamnej)’, s pritjaž. affiksom 3 l. ‘kraj, bereg’ (Bashk), *žağa* ‘shore, coast, beach, collar’ (Kaz), *žağa* ‘vorotnik, kraj, bereg, beregovoj’ (Kklp), *yaga* ‘vorotnik, bereg, beregovoj’ (Nog), *yāğa* ‘der Kragen, das Ufer’ (CrTatR), *yāğa* ‘bereg, konec, kraj, predel’ (KarH, KarCr), *yāğa* ‘vorot, vorotnik, bereg, kraj’ (Kum), *yaga* ‘Kragen, Ufer, Rand’ (KumN), *džağa* ‘bereg, poberež’e, beregovoj, vorotnik, vorot’ (KrchBlk), *jağa* ‘Kragen’ (KrchP).

In certain languages both forms are present:

- (30) *yaga* ‘szél, szegély, mellék [edge, border, environs]’, *yaka* ‘gallér [collar]’ (BashkP), *jağa* ‘der Kragen, das Ufer’, *jaqa* ‘der Kragen, die Rand, die Grenze’ (KazR).

This double representation of the original geminated /kk/ can be interpreted as two processes, i.e. voicing and degemination, having overlapped each other, and degemination could precede voicing in certain cases. As a result, /kk/ > /k/ > /g/ could appear.

Another well-known example is the word *ywkaru* ‘upwards’ which comes from the nominal base *ywk* ‘high ground’ with the directive ending +*gArU*. Although it is a clear example for a geminated velar,⁴⁰ most of the Kipchak languages render a voiced /g/, see e.g. *yoğari* ‘verx; vverx; naverxu; vysoko; vyše’ (Kar), *yugari* ‘verx’ (Tat), *yuğari* ‘vysoko; vyše’ (Bashk), *joğari* ‘height; top, upper part’ (Kaz), etc. The only languages where the velar remained unvoiced—always in alternation with a voiced variant—are: *joğari*, *joqari*, *yoqari* ‘verx’ (Kklp) and *jokoru* (južn.), *jogoru*, *joğor* ‘verx, vverx’ (Kirg).⁴¹ The history of this word shows that the degemination of the original double consonant happened sometimes earlier than in other cases. Accordingly *ywkaru* could take part in the standard voicing processes of the words with original /VkV/.

It is a widely accepted view that the word *yaku* ‘a raincoat’ is a derivative of the verb *yag-* ‘to pour down; to rain’ and that it had a double consonant at the boundary of the first and second syllables.⁴² Although this etymology raises a couple of difficulties, some modern Turkic data also point to a geminated velar, i.e. *yaku* < **yakku* < **yagku* or **yaggu*, see:

40 Sanglax (344r2) still preserved the original form as *yoğğari* ‘upwards, above (bālā wa fawq)’ and Khalaj also has a double consonant: *yuqqar* ‘oben, nach oben’.

41 Crimean Tatar *yuqari* ‘vverx; staršij’ may be an Ottoman loanword.

42 See the first appearance of this etymology in Kāšğarī (454), who wrote that ‘[i]ts root form is *yāğqu*, which was lightened’.

- (31) *žaǰi* ‘winter colt-skin coat’ (Kaz), *yaqqi* ‘ein Pelz aus Rehfell, der mit den Haaren nach aussen getragen wird, ein Pelz mit Shawlkragen, gewöhnlich aus Murmeltierfell’ (AltR), *yaqqi, d’aqqi* ‘ein Pelz aus Rehfell, der mit den Haaren nach aussen getragen wird’ (AltTelR).

The word *yarlika-* ‘to be gracious, compassionate; to issue orders, to command’ < **yarligka-* can also be mentioned here. It is from the noun *yarlig* ‘poor, destitute, pitiable’ with the derivative element $+(X)(r)kA-$.⁴³ Although it can be observed in some modern Turkic languages, it is a rather religious or technical term belonging to the written language and hardly used in the spoken varieties. Therefore the Kipchak examples with an unvoiced /k/ do not indicate a double consonant, but rather constitute a simple preservation of the original form written with a /k/, see:

- (32) *yarlika-* ‘(rel. razg.) milovat’, pomilovat’, proščat’, prostit’, otpuskat’ (otpustit’) grexi’ (Tat), *yarliqa-* ‘(rel.) proščat’, prostit’ (kogo), otpuskat’, otpustit’ grexi (komu)’ (Bashk), *yarlika-* ‘(ust.) odarivat’ (kogo-l.); (rel.) proščat’, otpuskat’ grexi’ (Nog).

Finally the word *yakīn* ‘near’ will be discussed, because its widely accepted etymology poses difficulties. According to a common view, it comes from the verbal base *yak-* ‘to approach, to be near to’ as an ergative formation in $-Xn$, see e.g. Erdal (1991: 302). It is always compared with the word *uzun* ‘long’ ← *uza-* ‘to be, or become, long, or long drawn’, because both are from intransitive verbs and used adjectivally. If we look at the modern Kipchak forms, it can be seen, however, that they preserved the unvoiced /k/ without exception:

- (33) *yakīn* ‘blizko, nedaleko; okolo, počti’ (Tat), *yaqīn* ‘blizko’ (Bashk), *žaǰīn* ‘near, by, beside, to; near relative’ (Kaz), *žakīn* ‘blizko; skoro; svoj (podnoj, rodstvennik); drug, prijatelj’; okolo, priblizitel’no’ (Kklp), *ǰakīn* ‘blizko; blizkij; svoj (rodnoj); drug, prijatelj’ (Kirg), *yakīn* ‘blizkij’ (CrTat), *yaqīn* ‘blizkij’ (KarCr), *yakīn* ‘(dial.) blizko’ (Nog).

Based on this etymology it is difficult to interpret the modern Kipchak counterparts. Interestingly, the vowel in the second syllable is long in both words in Turkmen: *uđīn* ‘dlinnyj’ and *yakīn* ‘blizkij; nedalekij, nedal’nij; približennyj; rodnoj’. As a working hypothesis we can suppose that the vowel in the second syllable was, or became very early, long and stopped the voicing process of the /k/. Another possibility is that the etymology, i.e. *yak-Xn* is not valid. However, further research is needed to prove which explanation is valid.

43 Bisyllabic words ending in a consonant take the short form $+kA-$, see further Erdal (1991: 458–465).

3.2.2. The case of the numerals

Some numerals in Turkic may point to geminated consonants (*eki* ~ *ekki* ‘2’, *yeti* ~ *yetti* ‘7’, *säkiz* ~ *säkkiz* ‘8’, *tokuz* ~ *tokkuz* ‘9’, *otuz* ~ *ottuz* ‘30’ and *elig* ~ *ellig* ‘50’). There are two different views about the origin of these geminated consonants. One may think that they are original and only seldom written in the sources, but some modern languages clearly show them. See. e.g., Clauson (1972: 823 and 1959: 20–22) who writes that ‘sekkiz ‘eight’; like ottuz, ékki:, q.v., and three other numerals originally had a medial double consonant, but this is seldom written and in many languages not pronounced.’ The word *eki* ~ *ekki* ‘2’ has, e.g., relatively few examples with geminate in the historical sources:

- (34) *ekki* ‘the number ‘two’’ (AK), *äkki*, *iki* ‘dva’ (AIM), *iki*, *ikki* ‘dva’ (ANehF), *ikki*: *ikki böl-* ‘to divide in two’ (ARbg), *eki*, *ekki* ‘zwei’ (LCC), *ik(k)i kâz* ‘deux fois’ (ABul), *yäkki* ‘2 (sic!)’ (ADur).

All the other sources I checked render the word as *eki*.

Other scholars argue that these geminated consonants of the numerals are secondary. The Chuvash numerals may indicate that they are of emphatic origin:

one	<i>përre</i>	<i>për</i>
two	<i>ikkë</i>	<i>ikë, ik</i>
three	<i>viššë</i>	<i>višë, viš</i>
four	<i>tāvattā</i>	<i>tāvata, tāvat</i>
five	<i>pillëk</i>	<i>pilëk</i>
six	<i>ulttā</i>	<i>ultā, ult</i>
seven	<i>šiččë</i>	<i>šičë</i>
eight	<i>sakkār</i>	<i>sakār</i>
nine	<i>tāxxār</i>	<i>tāxār</i>
ten	<i>vunnā</i>	<i>vun</i>

Whatever may be the case, the appearance of the geminates is most likely older than the initial state of the voicing processes /k/ > /g/ in the Turkic languages. The following table gives the modern Turkic forms of the numerals *eki*, *säkiz*, *tokuz* and the word *ekiz* ‘twin’ as a clear derivative of *eki*:

languages	two	twin	eight	nine
Tatar	<i>ike</i>	<i>igez</i>	<i>sigez</i>	<i>tugiz</i>
Bashkir	<i>ike</i>	<i>igeđ</i>	<i>higeđ</i>	<i>tuđiđ</i>
Kirghiz	<i>eki</i>	<i>egiz</i>	<i>segiz</i>	<i>toguz</i>
Kazakh	<i>yeki</i>	<i>yegiz</i>	<i>segiz</i>	<i>tođiz</i>
Karakalpak	<i>eki, yeki</i>	<i>yegiz</i>	<i>säkkiz, segiz</i>	<i>tođuz, toqquz</i>

Nogay	<i>eki</i>	<i>egiz</i>	<i>segiz</i>	<i>togiz</i>
Karaim (Trakai)	<i>eki</i>	<i>egiz'ak</i>	<i>segiz'</i>	<i>toğuz</i>
Karaim (Halič)	<i>eki, iki</i>	<i>egizek</i>	<i>segiz</i>	<i>toğuz</i>
Karaim (Crimean)	<i>eki</i>	<i>egiz</i>	<i>sekkiz</i>	<i>dokuz</i>
Crimean Tatar	<i>eki</i>	–	<i>sekiz</i>	<i>tokuz</i> ⁴⁴
Kumück	<i>eki</i>	<i>egiz</i>	<i>segiz</i>	<i>toğuz</i>
Karachay-Balkar	<i>eki</i>	<i>egiz</i>	<i>segiz</i>	<i>toğuz</i>
Turkish	<i>iki</i>	<i>ikiz</i>	<i>sekiz</i>	<i>dokuz</i>
Azerbaijani	<i>iki</i>	<i>äkiz</i>	<i>säkkiz</i>	<i>doğğuz</i>
Gagauz	<i>iki</i>	<i>ikiz</i>	<i>sekiz</i>	<i>dokuz</i>
Turkmen	<i>iki</i>	<i>ekiz</i>	<i>sekiz</i>	<i>sokuz</i>
Modern Uygur	<i>ikki</i>	<i>egiz</i>	<i>säkkiz</i>	<i>toqquz</i>
Turki dialects	<i>iki, ikki, işki</i>	–	<i>sekiz</i>	<i>toquz, toqquz</i>
Yellow Uygur	<i>iški, işke</i>	–	<i>sekes, sak'is</i>	<i>toqış, to'qis</i>
Salar	<i>iski, ički, işki</i>	–	<i>sēkis, sēkes, sekis</i>	<i>toqos</i>
Oyrot	<i>eki</i>	<i>egis</i>	<i>segis</i>	<i>togus</i>
Tuvan	<i>iyi</i>	<i>iyis</i>	<i>ses</i>	<i>tos</i>
Khakass	<i>ikī</i>	<i>ikīs</i>	<i>sigīs</i>	<i>toğīs</i>
Chuvash	<i>ikkē, ikē, ik</i>	<i>yěkēreš</i>	<i>sakkār</i>	<i>tāxxār, tāxār</i>
Khalaj	<i>äkki</i>	–	<i>säkkiz</i>	<i>toqquz</i>
Yakut	<i>ikki</i>	<i>igire</i> ⁴⁵	<i>ağis</i>	<i>toğus</i>

As can be seen from this table, the Kipchak languages show uncommon behaviour. Although all the four words have the same segment /VkkV/, only the word *eki* has preserved the original voiceless consonant, while the other three have a voiced /g/. A working hypothesis for this phenomenon was proposed by Berta (2001: 177) in one of his papers. He interprets it as a conditioned sound change, i.e. under the influence of the final /z/ the degemination /kk/ > /k/ happened much earlier in these words than in others, early enough to take part in the regular voicing process /k/ > /g/. In addition he notes (p. 182) that the word structure, found in some new Russian loanwords, (C)VkVz is not known from these languages. Most likely it is a regressive assimilation /k/ > /g/ triggered by the final /z/.

44 The Crimean Tatar and Crimean Karaim words for 'eight' and 'nine' are loanwords from Ottoman.

45 A loanword from Mongolic, cf. *ikire, ikere* 'twins'.

3.2.3. Words with dubious etymological background

There are Turkic words lacking a clear etymology that look like words with original /VkV/ or /VgV/, but the modern Kipchak counterparts may point to an original double consonant. In the following section some of these examples will be discussed and analysed.

In his etymological dictionary, Clauson (1972: 610) writes that the word *kakač* ‘dirt’ is perhaps a diminutive form of the word *kak* ‘something dried’.⁴⁶ There are at least two problems with this explanation: (1) there is no diminutive ending +Ač in Old Turkic known to me; and (2) the Kipchak languages have preserved the unvoiced /k/ which likely points to an original geminate, see:

- (35) *kakaš* ‘vjalenoe (ili) kopčenoje mjaso; (peren.) toščij, xudoj’ (Nog), *kakač* ‘perxot’; bran’ po adresu koz’ (Kirg).⁴⁷

A possible solution for these problems is to analyse the word as a derivative in +gAč. Based on the form *kakač* < **kakkač* < **kakgač* the Kipchak data can be understood. However, this explanation raises semantic difficulties since the formative +gAč, as a class marker, is used only in animal and plant names.

The word *bogaz*, *boguz* ‘throat’ has an etymology proposed by Erdal (1991: 326). According to him it comes from the verb *bog-* ‘to strangle’, ‘the throat being the only part of a person’s body by which he can get strangled.’ This is, on the one hand, although very ingenious, semantically not very convincing; on the other hand, the modern Kipchak data may point to an original double consonant:

- (36) *bugaz* ‘(anat.) gortan’, gorlo, glotka; (geogr.) proliv’ (Tat), *boğad* ‘(anat.) gorlo; proliv’ (Bashk), *bogoz* ‘(južn.) mesto sxoženiya dvux ili neskol’kix ložbin’, *boguz* ‘otverstie v seredine verxnego mel’ničnogo žernova, večeja’ (Kirg), *bogaz* ‘dvojnoj podborodok; (geogr.) proliv’ (Nog), *boğaz* ‘proliv, zaton’ (KrchBlk).

It is worth noting that there is a homophone word *bogaz*, *boguz* ‘pregnant’⁴⁸ in the Turkic languages which behaves differently in the modern Kipchak languages, see the table below:

46 The other explanation of Clauson’s (1972: 610), according to which it is a quasi-onomatopoeic word, cannot be taken seriously.

47 The words *qaqač* ‘vjalenoe mjaso’ (CrTat) and *qaqač* ‘sušenoje, vjalenoje mjaso (bol’šej čast’ju koz’e)’ (KarCr) are not used here because they could be Ottoman loanwords, cf. *kakaç* ‘dried meat; salted and dried fish’ (Tt).

48 On the possible etymologies and explanations of this word already proposed in the Turkological literature, see Kincses Nagy (2005: 176–177).

	<i>bogVz</i> ‘throat’	<i>bogVz</i> ‘pregnant’
Tatar	<i>bugaz</i>	<i>buaz</i>
Bashkir	<i>boǵaǵ</i>	<i>bïwaz</i>
Nogay	<i>bogaz</i>	<i>buvaz</i>
Karachay-Balkar	<i>boǵaz</i>	<i>buwaz</i>
Kirghiz	<i>bogoz, boguz</i>	<i>bōz, buvaz</i>

Since there are no convincing etymologies for these words and, accordingly, their relation is unclear, completely different opinions can be formulated: (1) they are independent words without any relation; (2) they are different derivatives of the same base, i.e. *boggVz* vs. *bogVz*; or (3) the different forms in the modern Kipchak languages emerged as a result of an early split. However, further research is needed to make a solid statement.

Finally I mention here the word *ïgač, aǵač* ‘tree’. According to Erdal (1991: 84) it is a derivative from the noun *ï* ‘vegetation; bush’ with the class marker +*gAč* mentioned above at the word *kakač*. The word behaves uncommonly in the Turkic languages: (1) the first syllable shows the alternation: *a ~ ĩ ~ ya ~ yï ~ ha ~ hï*;⁴⁹ and (2) the intervocalic velar remained intact not only in the Kipchak, but in the South Siberian languages where the contraction of the segment /VgV/ is very strong, see:

- (37) *aǵač* ‘derevo; les, derevo (drevesina)’ (Tat), *aǵas* ‘derevo; les (material)’ (Bashk), *aǵaš* ‘tree, wood, timber’ (Kaz), *ïǵač* ‘derevo (obščee nazvanie: rastuščee, srublennoe, drevesina)’ (Kirg), *aǵač* ‘derevo’ (Kum); *aǵas* ‘derevo; les’ (Khak), *agas* ‘derevo’ (Oyr).⁵⁰

Until an explanation is suggested, all we can do is register this phenomenon.

3.3. Onomatopoeic words

There are a great number of onomatopoeic words in Turkic with intervocalic /k/ which also cannot follow the strong tendencies. In the following, I present some typical cases of onomatopoeic verbs in +*kI-* and +*kIr-* falling into this category:

The verbs *tokï-* ‘to hit, knock’ and *okï-* ‘to call out aloud; to recite; to read’ are well documented since the Old Turkic period. The base of *tokï-* is the onomatopoeic word *tok*, cf. *tok tok etti* ‘something solid made a noise’ in Kāšǵarī (167). Discussing the verb *okï-*, Erdal (1991: 468) cites a word of exclamation in *w̄* as a possible stem for it, cf. *ũ* ‘a particle of response to a caller’ in Kāšǵarī (32). Another explanation

49 The same can be seen in the case of the word *agla-, ïgla-* ‘to weep’.

50 As an exception, Tofalar *ñeš* probably comes from *ñas* < **ñās* < **ñagač* < **yagač*, cf. Róna-Tas–Berta (2011: 54).

could be that the word *okī-* comes from a stem like *ok* which was homophonous with, or maybe the same as, the enclitic particle *ok* known from the historical sources.

The modern Kipchak languages preserved the original unvoiced /k/ in both cases, see:

- (38) *tukī-* ‘tkat’, sotkat’; dolbit’, stučat’ (o djatle); (peren.) tverdit’ (dolbit’, govorit’) odno i to že’ (Tat), *tukī-* ‘tkat’, sotkat’ (čto); vzbaltyvat’, vzboltat’, vzbivat’, vzbít’ (čto); mesit’, zamesit’ (testo); (peren.) tverdit’, dolbit’ odno i to že’ (Bashk), *toqī-*, *toqu-* ‘to weave’ (Kaz), *toqī-* ‘tkat’; vjazat’; (peren.) osvoit’; osoznat’ (Kklp), *tokī-* ‘tkat’; (kn.) vjazat’ (Nog), *toku-* ‘tkat’; sedlat’ (Kirg);
- (39) *ukī-* ‘čitat’; učit’, učit’sja, obučat’sja; (peren.) uznavat’ (Tat), *uqī-* ‘čitat’ (čto); učit’sja, obučit’sja, zanimat’sja’ (Bashk), *oqī-* ‘to read; to learn, study’ (Kaz), *oqī-* ‘čitat’; učit’sja, obučat’sja’ (Kklp), *okī-* ‘čitat’; učit’sja, obučat’sja, zanimat’sja’ (Nog), *oku-* ‘čitat’; učit’sja (čteniju, pis’mu, naukam); (etn.) otčityvat’, zagovarivat’ (znaxarskij sposob lečenija)’ (Kirg), *oxu-* ‘čitat’; učit’sja’ (Kum), *oqu-* ‘čitat’ (KrchBlk).

Similar to the formative *+kI-*, *+kIr-* also creates verbs from onomatopoeic stems. Here we discuss two examples: *bakīr-* ‘to shout, bellow’ and *čakīr-* ‘to call out, shout’. On the basis of the Mongolic suffix *+kirA-*, which has the same function as *+kIr-*, it was proposed that the Turkic formative *+kIr-* goes back to Proto-Turkic **+kIrA-*, cf. Tekin (1982) and Erdal (1991: 467). The final vowel has regularly disappeared until Old Turkic times.⁵¹

The word *bakīr-* has a counterpart in Mongolic, see *barkira-* ‘to shout, cry, yell’. The base of this verb is **bar*, which can be compared with the Turkish form *bar bar* and *bağır bağır* ‘loudly, at the top of one’s voice’ in *bar bar bağır-* ‘to shout at the top of one’s voice’. Based on this parallel, Tekin (1982: 509) and Erdal (1991: 466) supposed that the Turkic form also had an /r/ which was dropped; thus a Proto-Turkic form **bārķira-*⁵² can be reconstructed.

The loss of the /r/ happened very early. It could be a simple drop of the /r/ by dissimilation as Erdal (1991: 466) suggested, or it could have disappeared by means of assimilation: **bārķira-* > **bākkīra-* > **bākīr-*. The Yakut word *bakkīrā-* ‘gromko plakat’, revet’ (o rebenke)’, as a loanword from Mongolic *barkira-*, represents the latter: Mongolic /rk/ > Yakut /kk/.

51 However, the relation between the two Old Turkic formatives, *+kIr-* and *°krA-* is not clear.

52 The length of the vowel in the first syllable is preserved in Turkmen: *bāğīr-* ‘revet’ (o verbljude); (peren.) žalobno plakat’; rydat’, vopit’ (Tkm). The Turkish form *bağır-* ‘to shout, yell, cry out’ also points to a long vowel.

Intervocalic /k/ has been preserved in the Kipchak languages, see:

- (40) *bakir-* ‘orat’, gromko kričat’, gorlanit’ (Tat), *baqir-* ‘kričat’, orat’ (razg.); gorlanit’ (prost.); revet’; myčat’; blejat’ (Bashk), *baqir-* ‘to howl, shout; cry out; to weep loudly; to scold loudly’ (Kaz), *baqir-* ‘kričat’, orat’; rugat’sja’ (Kklp), *bakir-* ‘kričat’, revet’, vopit’; gromko branit’ (kogo-l.), kričat’ (na kogo-l.)’ (Nog), *bakir-* ‘orat’, veret’, gromko kričat’, gorlanit’ (Kirg).⁵³

The word *čakir-* represents the same phenomenon as *bakir-*. Although the Mongolic counterpart of this verb cannot be found, its existence can easily be supposed because some Turkic languages preserved it, cf. *čarkira-* ‘kričat’ (napr. o sil’no plačuščem rebenke ili o grače, galke’ (Kirg) and *čakkirā-* ‘učašč.-dlit. teč’ s šumom; zvonko struit’sja’ (Y). Moreover, the base *čar* exists in Mongolic, cf. *čar* ‘sound of voice, cry, clamour, noise’. On the base of these parallels we can reconstruct the Mongolic verb *čarkira-* and its Turkic pair **čarkira-*. The long vowel of the base can be secured by Turkmen *čāgīr-* ‘zvat’, vzyvat’; priglašat’; sozyvat’; prizyvat’ and Turkish *çağır-* ‘to call; to invite; to summon; to shout, to call out; to sing’.

Similarly to *bakir-*, the Kipchak languages have preserved the voiceless /k/:

- (41) *čakir-* ‘zvat’, pozvat’, vzyvat’, vzyvat’; trebovat’, potrebovat’; priglašat’, priglasit’; prizyvat’, prizvat’ (Tat), *saqir-* ‘zvat’, pozvat’, priglašat’, priglasit’ (kogo); prizyvat’, prizvat’ (Bashk), *šaqir-* ‘to call, to invite, to crow’ (Kaz), *šaqir-* ‘zvat’, priglašat’; sozyvat’; kričat’, oklikat’; pet’ (o petuxe)’ (Kklp), *šakir-* ‘zvat’, priglašat’, sozyvat’; prizyvat’ (napr. k zaščite rodiny); pet’ (o petuhe)’ (Nog), *čakir-* ‘zvat’, vzyvat’, priglašat’, sozyvat’ (Kirg), *čaqir-* ‘zvat’, priglašat’; vzyvat’ (Kum), *čaqir-* ‘zvat’ (KrchBlk).⁵⁴

In the previous paragraphs, we argued that the words *toki-*, *oki-*, *bakir-* and *čakir-* did not receive the effects of the sound change /k/ > /g/ because they originally had a double consonant in intervocalic position – either /rk/ > /kk/, or /kk/. There is however one other linguistic fact which can be considered: the onomatopoeic words do not always take part in the general sound changes of a language, which might suggest that the preservation of the /k/ is caused by the onomatopoeic character of the word. It cannot however be a valid argumentation in our case because there are

53 Crimean Tatar *bağır-* ‘kričat’ is an old Ottoman loanword. Crimean Karaim presents both the original Kipchak form and an Ottoman loanword: *baqir-* ‘gromko kričat’, golosit’ and *bağır-* ‘kričat’, respectively.

54 Crimean Tatar has an Ottoman loanword: *čāgīr-* ‘zvat’; priglašat’. Crimean Karaim presents both *čaqir-* ‘zvat’, prizyvat’; vzyvat’; pet’; kričat’ and *čāgīr-* ‘zvat’, vzyvat’, vzyvat’. Note that other Karaim dialects also have forms with voiced /g/: *čāgīr-* ‘zvat’, vzyvat’, vzyvat’ (KarT), *cağır-* ‘zvat’ (KarH).

Turkic languages outside of the Kipchak branch where the voicing of /k/ and other regular sound changes could happen, see e.g.:

- (42) *ōgī-* ‘čitat’ (SibTat),⁵⁵ *čār-* ‘zvat’; *priglašat’*; *prizyvāt’* (Gag), *bağīr-* ‘orat’, *revet’* (Az).

Finally another word in this category is also worth mentioning: *baka* ‘frog’. Although it has no convincing etymology, it is likely a word of onomatopoeic origin. The base is usually defined as **bak±*. According to Severtjan (1974–1980/2: 40–42) the nominal stem **bak* has been preserved in some Turkish dialects as *bağ*, *bābā* ‘kaplumbağa; birkaç günlük kurbağa yavrusu’. From this onomatopoeic word a verb *bak-* has developed which served as a base for the word *baka*. Whatever the case is, there existed a suffix *°gA* in the Turkic languages which formed animal names such as *karga* ‘crow’, *kumursga* ‘ant’, *imğa* ‘wild mountain goat’. Maybe some other words with a voiceless /k/ also belong to the same formative: *buka* ‘bull’, *tākā* ‘he goat’, *bökā* ‘a big snake’. Accordingly, the word *baka* can be interpreted as **bākka* < **bāk-ga*. Sanglax, the Middle Turkic dictionary, and some Oguzic dialects show the traces of the original geminate: *taš-baqqa* ‘tortoise, turtle (sang pušt)’ (San), *ğurbaya*, *ğurbaqqa*, *ğurbaya*, *ğurbayë*, *ğurbaqa*, *ğurbayï*, *ğurbaqğa*, *ğurbaqqa*, *ğurbaqqa*, *ğurbaqğa*, *ğurbaqğä*, *ğurbağğa*, *ğurbayï*, *ğurbaya* ‘Frosch’ (Khor). The length of the base is preserved in Turkmen *gurbāga* ‘ljaguška’, in Khalaj *bāqa* ‘Schildkröte’, *ğurbāya*, *ğulbāya*, *ğurmāya*, *ğurbāča*, *čur(r)ubāqa*, *čurpāq/ya*, *ğirmāqa*, *ğirbāya* ‘Frosch’ and the Turkish forms also point to that: *bağa* ‘tortoise shell’, *kurbağa* ‘frog’ (Tt). The Kipchak counterparts again point to an original double consonant:

- (43) *baka* ‘ljaguška, (fig.) zapor, derevjannyj zasov (dveri) basovaja klaviša, balansir (priposoblenie na mel’nice)’ (Tat), *baqa* ‘ljaguška, ulitka’ (Bashk), *baka* ‘ljaguška, (fig.) suxoparyj čelovek, čelovek (xudoj) kak palka’ (Kirg), *baqa* ‘frog’ (Kaz), *baqa* ‘ljaguška’ (Kklp), *baka* ‘ljaguška’ (Nog), *baqa* ‘ljaguška, ljagušačij’ (CrTat), *baqa* ‘ljaguška’ (KarC), *baqa* ‘ljaguška’ (Kum), *maq* ‘ljaguška’ (KrchBlk), *maq’a* ‘Frosch, Kropf’ (KrchP).⁵⁶

3.3.1. The so-called Modern Uyğur umlaut

The Uyğur umlaut is a special kind of regressive assimilation, i.e. the sound /i/ in the second syllable changes the /a/ in the first syllable to an /e/: *seriq* < OT *sariğ* ‘yellow’, *eti* < OT *atī* ‘his/her/its horse’. Comparing the Uyğur words where the regres-

⁵⁵ Siberian Tatar is considered to be a group of Kipchakoid dialects, but it behaves differently regarding the intervocalic velars.

⁵⁶ See further *bağa* ‘ljaguška’ (KarH, KarT) with voiced /g/.

sive assimilation does not take place with those examples of the Kipchak languages where the intervocalic /k/ remain intact, an interesting correlation can be detected. It seems that the original geminated consonant /kk/ not only stopped the voicing process in the Kipchak languages, but could also defer the regressive assimilation in Modern Uygur:

Kipchak	Old Turkic	Modern Uygur
<i>yakīn</i>	<i>yakīn</i>	<i>yaqin, yeqin</i> ‘blizko, nedaleko’ (MUyg), <i>yaqin</i> ‘near, close to’ (TurkiJ), <i>yaqīn</i> ‘blizkij, blizko’ (TurkiL)
<i>čakīr-</i>	<i>čakīr-</i>	<i>čakīr-</i> ‘vyzyvat’, priglašat’, klikat’, oklikat’, zvat’, sozyvat’, szyvat’, podzyvat’; (voen.) prizyvat’ (MUyg), <i>čaqær-, čæqær-, čaqīr-</i> ‘to call’ (TurkiJ), <i>čaqir-</i> ‘to call, to summon’ (TurkiJ), <i>čaqīr-</i> ‘zvat’, kričat’, slavīt’ (TurkiL)

4. Conclusions

As the above cited examples show, there are different factors which determine the history of a sound, or a sound group. A thorough analysis and comparison of every single word meeting the primary criteria, in our case having a velar in intervocalic position, reveal such processes which cannot be seen in the context of a preselected set of words. The analysis of the whole corpus also manifested that the Kipchak branch plays an important role in the understanding of the processes discussed above. In addition to this, a relative chronology of two groups of sound changes, i.e. degemination : voicing/spirantization/approximation, in the Turkic languages could also be defined. The results can be summed up as follows:

1. In most cases the intervocalic geminated velars could not undergo the sound changes voicing/spirantization/approximation in the Kipchak languages because the process of degemination took place later.
2. Onomatopoeic words in the Kipchak branch are also resistant to the sound changes /k/ > /g/.
3. Voicing of /k/ (< */kk/) regularly happened in the Kipchak languages in the environment $_Vz$ which can be understood as regressive assimilation.
4. If an intervocalic /k/ has been preserved in the Kipchak branch, it is most likely that the sound change /a/ > /e/ ($_Vi$) is deferred in Modern Uygur.

In addition to this, the results can be used in further etymological studies: there are a significant number of Turkic words which have no (convincing) etymology and show the same phenomenon as the above discussed words, e.g. the very common word *sakal* ‘beard’ has preserved its unvoiced /k/ in the Kipchak languages:

- (44) *sakal* ‘boroda, borodka plotničn’ego topora’ (Tat), *haqal* ‘boroda’ (Bashk), *sakal* ‘boroda’ (Kirg), *saqal* ‘beard’ (Kaz), *saqal* ‘boroda’ (Kklp), *sakal* ‘boroda’ (Nog), *saqal* ‘boroda’ (CrTat), *sakal* ‘boroda’ (KarT), *saqal* ‘boroda’ (KarSh), *saqal* ‘boroda’ (Kum), *saqal* ‘boroda, podborodok’ (KrchBlk).

From these data we can draw the conclusion that the word *sakal* could originally have had a geminated velar in intervocalic position.⁵⁷

However the proper analysis of such words must be relegated to future papers.

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⁵⁷ Some Oguzic dialects and Khalaj also point to this: *sağgal*, *sağgal*, *saqqal* ‘Bart’ (Khor), *saqqal* ‘Bart’ (SOG), *saqqal*, *sağgal* ‘Bart’ (Kh). Interestingly, the word *sakak* ‘pendulous; double chin’ considered to come from the same base as *sakal*, follows the strong tendencies: *sagak* ‘(u čeloveka) vtoroj podborodok’ (Kirg), *sağaq* ‘angle formed by the neck and chin’ (Kaz), *sağaq* ‘mesto pod podborodkom; žabry (u ryby)’ (Kklp), *sagak* ‘žabry (ryby)’ (Nog), *sağaq*: *sağaqla* ‘okoloušnye železny’ (KrchBlk), *sağaq* ‘žabra (u ryby)’ (RKrchBlk).

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