

KARTVELIAN NUMERALS

§1. The Kartvelian language family represented by four languages known from South Caucasus, can be classified as follows (the data in brackets mean the estimations of the beginning of divergence according to 'recalibrated' glottochronology developed by S. Starostin — cf. Testelec 1995: 14):

Common Kartvelian[2800 BC]

A. Svan

B. Georgian-Zan [800 BC]

1) Georgian

2) Zan

a) Mingrelian

b) Laz

§2. In Kartvelian languages the following underived forms of cardinal numerals are known:

	Georgian	Mingrel	Laz	Svan
1	<i>ert-i</i>	<i>art-i</i>	<i>ar(t)-i</i>	<i>ešxu</i>
2	<i>or-i</i>	<i>žir-i, žər-i</i>	<i>žur-i</i>	<i>jor-i, jerb-i</i>
3	<i>sam-i</i>	<i>sum-i</i>	<i>sum</i>	<i>sem-i, dat. sam-w</i>
4	<i>otx-i, dial. otxo</i>	<i>otx-i</i>	<i>o(n)txo, otxu</i>	<i>woštxw</i>
5	<i>xut-i</i>	<i>xut-i</i>	<i>xut-i</i>	<i>wo-xušd, wo-xwišd</i>
6	<i>ekvs-i</i>	<i>amšv-i</i>	<i>a(n)š-i</i>	<i>usgw-a, uskw-a</i>
7	<i>švid-i</i>	<i>škvit-i</i>	<i>škvit-i</i>	<i>išgwid, iškwid</i>
8	<i>rva</i>	<i>(b)ruo</i>	<i>ovro, orvo</i>	<i>ara</i>
9	<i>cxra</i>	<i>čxor-o</i>	<i>čxo(v)r-o</i>	<i>čxar-a</i>
10	<i>at-i</i>	<i>vit-i</i>	<i>vit-i</i>	<i>ješd, ješt</i>
20	<i>oc-i</i>	<i>eč-i</i>	<i>eč-i</i>	<i>(jerw-ešd = 2 x 10)</i>
100	<i>as-i</i>	<i>oš-i</i>	<i>oš-i</i>	<i>ašir, ašir</i>

§3. Reconstructing the proto-Kartvelian phonology, the most different results are those of K.H. Schmidt on one hand versus Klimov, Gamkrelidze (& Mačavariani) and Fähnrich on the other hand (the problem is discussed e.g. in Testelec 1995):

	Schmidt 1962	Klimov 1964	Gamkrelidze & Ivanov 1984	Fähnrich & Sardshveladse 1995
1	<i>*ert-i</i> (77,107)	<i>*ert-</i> (79)	<i>*ert-</i> (253)	<i>*ert-</i> (124)
„other”	<i>*šxwa-</i> (133)	<i>*s₁xwa-</i> (178)		<i>*s₁xwa-</i> (322)

	Schmidt 1962	Klimov 1964	Gamkrelidze & Ivanov 1984	Fährnich & Sardshweladse 1995
2	* <i>jor-i</i> (129)	* <i>jor-</i> (149)	* <i>jor-</i> (253)	* <i>jor-</i> (267–68)
3	* <i>sam-i</i> (131)	* <i>sam-</i> (161)		* <i>sam-</i> (294)
4	* <i>oijxw-</i> (128)	* <i>o(s₁)tx(w)-</i> (150)	* <i>o(s)tx(w)-</i> (879)	* <i>otxo-</i> (269)
5	* <i>xutj-i</i> (75,159)	* <i>xu(s₁)t-</i> (262)		* <i>xut-</i> (555)
6	* <i>ekšw/w-</i> (63,107)	* <i>eks₁w-</i> (80)	* <i>ekšw-</i> (878)	* <i>eks₁w-</i> (125)
7	* <i>škwid-</i> (142)	* <i>šwid-</i> (216)	* <i>šwid-</i> (875)	* <i>šwid-</i> (429)
8	* <i>rūs / *árwa</i> (130)	* <i>arwa-</i> (44–45)	* <i>rwa- / *arwa-</i> (879)	* <i>arwa-</i> (35–36)
9	* <i>čxara-</i> (151)	* <i>c₁xra-</i> (232)		* <i>c₁xar-</i> / * <i>c₁xr-</i> (469)
10	* <i>atj-i</i> (92)	* <i>a(s₁)t-</i> (45)		* <i>at-</i> (32)
20	* <i>oc-i</i> (129)	* <i>oc₁ q</i> (151)		* <i>oc₁-</i> (271)
100	* <i>aš-i</i> (93)	* <i>as₁ q</i> (45)	* <i>aš-</i> (253)	* <i>as₁-</i> (38–39)

§4. Comparative — etymological analysis

1.1. GZ **ert-* “1” must be separated from S *ešxu* id. (see 1.2.) in contrary to Schmidt (1962: 77). The numeral could perhaps be derived from the GZ verb **rt-* “to make, begin” (FS 287). The semantic motivation first numeral = beginning numeral has an analogy e.g. in Welsh *cyntaf* “the first”, Old Irish *cét-* etc. vs. Old Church Slavonic *načeti* “to begin”, *konь* “beginning” (Pokorny 1959: 564). If this etymology is correct, the numeral seems to be an innovation.

1.2. S *ešxu* “1” is related to G *sxva* “anderer, zweiter, fremd, ein”, M *šxva* “anderer, fremd”, Laz *čkva* “anderer, übriger” (Klimov 1964: 178; FS 322). The meaning “one” (S) can be an archaism in confrontation with the semantic dispersion in GZ branch. A parallel semantic development probably appears in Slavic **inъ* “other” (**ěino-* < *e-oino-*) vs. IE **oino-* “one”.

An absence of any internal etymology within Kartvelian gives a legitimacy to seek external parallels. Trombetti 1923: 110 collected the following comparanda: a) Khvarshi *has*; b) Semitic **faš-t-*; c) Sumerian *aš*; d) Brahui *asi*. Let us analyze these comparisons.

a) Khvarshi *has*, together with other Didoan forms (Ginukh *hes*, Ink-hokvari *hos*, Bezhta *hōs*, Gunzib *hšs*), reflect the nom. of proto-Didoan paradigm **hšs* vs. obl. **ssi-* (Gunzib *si-d*, Bezhta *si-d* and Didi nom. *sis*). Among the parallels in other North Caucasian branches (Avar-Andi **ci-*; Lak *ca*; Dargin **ca*; Lezgin **ssa*; Khinalug *sa*; WC **zV*; Urarteian *šusi-* “1”, *šuni-* “all”) the closest relative appears in Nakh **čha* “1” > Chechen *čha?*, Ingush *caš*, Bats *čha* (NCED 323–324: NC **chš* < **cəhV* or **həcV*).

b) For Semitic **fašt-ay-* (Akkadian *ištēn(um)* “1”, *ištēnšeret*, poet. *ištēnešret* “11”, Ugaritic *fšt fšrh*, Hebrew *faštēfāsār* “11”, Epigraphic South Arabian *š₁tn* “1” — see AHw 400–401; Aistleitner 1965: 244–245), the most probable cognates within Afroasiatic appear in Omotic: Yemsa *issoo*, *isson*, Chara *issaa*, Wolaita *ista*, Zala *istaa*, Malo *istá*, Gofa *issi(no)*, Dache *isiyno*, Dorze *isiino* & *istaa*, Nao *is(i)n* etc. “1” and perhaps also in Chadic: (Central)

Mafa *sətaɖ*, Sulede *sta*; ? (East) Mokilkö *só* “1” (Blažek 1990: 34). The comparison of AA **faši*-(-*t/n*-) “1” and K **eʃxu* “1” > ‘other’ is in principle possible even in the genetic plan, if we accept the following development: **faʃ[u]*- > **ʃwa*- > **ʃwa*- > **ʃwa*- > K **ʃxwa*- or sim.

c) Sumerian *aš* means really “1” in the standard dialect (Diakonoff 1983: 85).

d) In agreement with Dravidian historical phonology, Brahui *asi* “1” (adj.), *asiṭ* “1” (entity), *asīke* “once” must be derived from proto-Dravidian **ouru* “1” (DEDR # 990 and table 1; Zvelebil 1970: 172) < **or-tu* with the neuter suffix **-tu* (Andronov 1978: 239–240).

2. K **jor*- “2” is the only proto-Kartvelian form reconstructed with the initial **j*-. It were already Caldwell (1913/56: 327–28), and later Fähnrich (1966: 149), who pointed to the parallel in Dravidian **ir*- “2” (DEDR # 474).

3. K **sam*- “3” has a suggestive parallel in Lak *šam-a* “3” (Trombetti 1902: 196). The other related forms are Khinalug *pš^wa* “3” and Tabasaran *simi-çur*, Agul *šin-çur* “30” (NCED 978: **šwimHV*). Trombetti (l.c. and 1923: 201) recognized the cognate in Sino-Tibetan *(*g*-)*sūm*- “3” and Yeniseian **doʔŋa* “3”, cf. also Bouda 1957: 83 and Starostin 1982: 210 & 1995: 222–223.

4. K **otxo*- “4” is probably a more preferable reconstruction than **o(s₁)tx(w)*- (Klimov 1985: 207). The presence of the cluster -*št*- in Svan can be explained by analogy to the following numeral *wo-xušd*, *wo-xwišd* “5”. The attempt of an internal etymology of the type **otxo*- = “2+2” = **or*- “2” (only G) & **tq̄u*- (K **tq̄ub*- “twin” — see FS 340) is quite improbable (Klimov 1985: 207). But already van Ginneken and Frei noticed the resemblance of K “4” and IE “8”, traditionally reconstructed **oktō(u)* and interpreted it as dual of a hypothetical sg. **okto*- **“4”*. This idea was supported by Henning, who analyzed the system of Old Iranian metrology. He determined that the meaning of Avestan *ašti*- corresponds to Greek *παιλαιστή* “the breadth of *four* fingers” (1942: 235) and identified it with the expected Iranian **ašta*- < **okto*- (1948: 69). Accepting this etymology, Klimov (1977: 162–163; 1985: 206–207 with older literature) finds a support in examples of the type Aimara *pusi* “4” vs. Quechua *pusex* “8” or Ob-Ugric **n̄l̄ɛ* “4” vs. **n̄l̄ɛγ* “8” (Honti 1982: 171), where “8” represents probably dual of “4” (Gulya 1976: 314). The metathesis in the substitution IE **-kt*- > K **-tx*- has an analogy in K **usx(o)* “bull for sacrifice” < IE **uksōn*- (Klimov 1994: 476). On the other hand, Manaster-Ramer (1995: 16–17) prefers to reconstruct K **os₁tx(o/w)*-, seeing here a substitution of the *satəm* variant of the IE **oktoH* “8” (but the final -*x*- can also be explained from the alliteration with the following numeral **xu(s₁)t*-). If it is accepted, the semantic change “8” > “4” can be connected with the opposite semantic shift for K **arwa*- “8” < Semitic **ʔarbaš*- “4”. Manaster-Ramer finds a formal analogy in the case of the North American

language Northern Chumash (Hoka) where the Yokuts (Penuti) numeral “10” was borrowed as “5” and the native word for “4” changed its meaning to “8”.

5. K **xu(s)₁t-* “5” has not unambiguous etymology. So far the following solutions have been proposed:

a) Internal etymology based on GZ **xuŕ-* “drücken” (Zycař & Džindžixadze 1985: 874) is improbable for semantic and phonetic (**-ŕ-* vs. **-t-*!) reasons.

b) Bork (1907: 25) and later Oštir (1921: 129) compared K “5” and NC counterparts as Rutul *xud*, Khinalug *pxu*, Bats *pxi*, Kabardin *txwə* etc. “5”, reconstructed as EC **xxwə* and WC **(t)xwə-* by Klimov 1967: 307 or NC EC **ffiiä/*ffiiä* besides WC **s-xwə* in NCED 426.

c) Manaster-Ramer (1995: 16–17) proposes a borrowing of K **xus₁t-* “5” from some Semitic source of the type Akkadian f. *ħamištu(m)* “5”, *ħamuštum* “5th”, cf. Old Assyrian *ħamuštum* “Fünfergruppe” (AHw 317; Riemschneider 1978: 69, 294), assuming a development via **ħawištu* (or **ħawuštu*).

6. K **eks₁w-* “6” was compared with its EC counterparts by Bork (1907: 25–26) and Oštir (1921: 130). Only Khinalug *zāk* “6” is formally similar, but it corresponds regularly to other EC forms, e.g. Kubachi *ēk*, Agul (Chirag) *rekka-l*, Dargwa (Akusha) *ureg-al* “6” etc. (NCED 219: NC **?rānĀE* “6”). Marr (1927 — see Klimov 1967: 308) tried to analyze the numeral in **e-* (**ert-* “1”) & **kus-* (**xut-* “5”). But already Bopp (1848: 38) noticed the evident similarity of the K numeral “6” with its IE counterparts. Among the IE forms of this numeral a source of the type Armenian *vec* “6”, Greek Doric *ῥέξ*, Attic *ἔξ* or Old Prussian (*w*)*uschsts* “6th” was quoted (Klimov 1967: 308 & 1985: 206). But the sequence **-ks₁w-* perfectly reflects the initial cluster reconstructed in IE **Kswēks* “6”. If this point of view is acceptable, the pre-K **kšwe...* can represent a borrowing from some IE dialect, preserving the initial cluster (cf. Avestan *xšuuas* or Sogdian of Khorezm *xwšw*, Yaghnobi *uxš* etc.).

7. K **šwid-* “7” was compared with IE **septm* “7” already by Bopp (1848: 38–39). But the IE numeral is very probably of Semitic origin, cf. Semitic **sabātum* “7” (Illič-Svityč 1964: 7; Blažek 1997). The borrowing from a Semitic source of the type Akkadian f. *sebet(tum)*, *sibbitu* can explain the development in vocalism, assuming pre-K **šiwid-* > K **šwid-* (Klimov 1985: 206), but the unexpected initial *s-* in Akkadian against the reflexes of the Semitic **š-* in other Semitic languages suggests that the donor-language was not Akkadian. Testelec (1995: 25) offers a different solution based on the priority of clusters postulated by Schmidt: **šibšit* > **šfiwit* > **škwit*.

8. K **arwa-* “8” cannot be compared with Chechen *barh*, Bats *barλ* “8” (Oštir 1921: 129) which have good cognates within EC: Khwarshi *ba λa*, Andi *bejλ’λ’i-gu* etc. “8” (EC **būnĀe*), besides WC **p(p)əλ’ə* “4” (NCED 314–

315). A more promising source seems to be the Semitic numeral “4”, cf. Akkadian m. *arba’u(m)* “4” (AHw 66), Ugaritic *árbaʿ*, Hebrew *ʔarbaʿ* etc. (Klimov 1967: 308–309). Klimov (1985: 207) reconstructs the original source in the form of dual, e.g. in Akkadian **arba’ā(n)*. A similar way of formation of some even numerals is known in Ugaritic where the numbers “6” and “12” can be expressed as *ṭṭtm* and *ṭtm* resp., i.e. dual of *ṭṭ* “3” and *ṭ* “6” (Brugnatelli 1982: 18).

Trombetti 1902: 198 proposes an alternative properly Kartvelian etymology based on subtraction **ara-(j)or-* “not two” > **arao(r)* — > **arwa-*.

9. K **c₁xar(a)-* “9” was compared with Semitic **tišš-* “9” already by Marr (1925: 74, 77; cf. Klimov 1967: 309). The initial cluster **c₁x-* should substitute the sequence *t-š-f* of the hypothetical source. The symbol **c₁* must reflect a sound close to *č* (cf. Schmidt 1962: 56, 151 writes directly **č*; Gamkrelidze uses the symbol **č̣*). The substitution *š > x* has an analogy in 1.2.b. The continuation of the Semitic **f* implies that the donor-language could not have been Akkadian (at least the language known from written records) where the loss of all ‘laryngeals’ (with exception of *h*) has taken place. It remains to explain the final part **-ar(a)-*. The variant *čxovro* in Laz discloses an influence of the preceding numeral (“retardation” after Marr). But there is yet one, rather neglected solution, assuming a compound **a(s₁)t-s₁xwa-ara-* “ten-*one-not-(+ lost verb)”, cf. G *ar(a)* “not, no-” (Trombetti 1902: 198).

10. K **a(s₁)t-* “10” resembles some EC counterparts: Lak *aç*, Chamalal *aça-da*, Kubachi *wiç*, Chechen *itt* etc. (Oštir 1921: 130; NCED 245–246: NC **ʔəncĕ*). Manaster-Ramer (1995: 17) sees here a transformation of Semitic **fašarát-um* “10” (orig. m.). In this case a hypothetical source cannot be the historically recorded Akkadian where the change **fa- > e* took place (cf. *ešer* & *ešeret* besides more archaic Assyrian *ešar* “10” & *ešartu* “Zehnergruppe” — AHw 253). Finally, it is tempting to connect pre-K **ašt-* “10” with Semitic **fašt-ay-* “1” (cf. 1.2.b), assuming “10” = “1 x [10]”. This solution could be supported by K **as₁[ir]-* “100”, if it represents a borrowing of West Semitic **fašīr-* “10th”, hence K “100” = “tenth [ten]” ? (cf. §12).

11. GZ **oc₁-* “20” has no satisfactory etymology. The attempt of Lafon (1933: 18) to derive it from G *or-* “2” & *at-* “10” (K **jor-* & **a(s₁)t-*) cannot be accepted for phonetic incompatibility.

12. K **as₁[ir]-* “100” was compared with the Semitic numeral “10” already by Trombetti (1902: 199). A possible source could be found in some ordinal patterns as *qaṭil*: Hebrew *šāšīrī*, Syriac *šəsīrāyā* or *qāṭil*: Arabic *šāšīr*, Geez *fašəṛ*; Akkadian ordinals are formed on the pattern *qaṭul*: *ešrum* m./f. (Brockelmann 1908: 491; Moscati 1964: 118–119). This interpretation implies the original semantic motivation “100” = “tenth [ten]” (cf. Bats

atasi “1000” = **at-* “10” x *asi* “100” — all Georgian loans — Klimov 1985: 208). It is tempting to assume the same origin for the NC counterpart: Tabasaran *warž*, Agul *balrš*; Akusha *darš*; Lak *tturš* etc. besides Ubykh *š^wa*, Adyghe & Kabardin *ša* etc. “100” (Klimov 1967: 310; NCED 587–588: NC **Hlōšwē*).

§5 Conclusion:

Kartvelian numerals can be classified according to their most probable origin as follows:

a) Inherited:

The numerals “1” and “2” are probably not borrowed. The hypothetical cognates within the Nostratic macro-phylum support their inherited origin. This semantic field can be extended: Svan *išgen* “other, another” can reflect K **č(w)en-*, cf. S *la-m-šged* “north” vs. G *črd-ili* “shadow” or S *mi-šgwi* vs. G *čemi* and Z *čkimi* “my” and S *gwi-šgwi* “we” vs. G *čveni*, L *čkuni*, M *čkini* — see Schmidt 1962: 57); this reconstruction is compatible with AA **čin-ay-* “2” > Semitic **čin-ay-* // Egyptian *snwj* // Berber **sīn* & **hissīn*; cf. also Hurrian *šin-* and Nakh **ši(n)* “2” (NCED 845–846).

b) North Caucasian origin:

In the case of the numeral “3”, NC origin seems to be the most probable. Just this direction of borrowing can be supported by the existence of convincing external parallels within the Sino-Caucasian macro-phylum. The NC source is also not excluded for the numerals “5” and “10”. The semantic field of the numeral words of North Caucasian origin can be completed: K **tqub-* “twin” (Klimov 1964: 184; FS 340) vs. WC **tq̄l:wA* “2” > Ubykh *tq̄^wa*, Adyghe *t^wə*; Khinalug *ku*, Tabasaran *q̄lu*, Kubachi *k^we*, Lak *ki-a* etc. (NCED 924: NC **tq̄Hwā*); cf. also Nakh **tq̄a* “20” (NCED 456; Klimov 1967: 307).

c) Indo-European origin:

The numerals “4” and “6” are probably borrowed from an IE source (cf. also G *pirveli* “first” vs. IE **p₁rH₂wó-* id.). Its dialectal affiliation is naturally uncertain. If we do not take into account the possibility of the proto-Indo-European as a contacting entity, there are at least three IE branches which were or could have been in contact with people of Southern Caucasus: 1. Hittites, 2. Indo-Iranians, 3. Armenians.

Ad 1) Concerning the Hittite (Anatolian) numerals, our knowledge of this topic does not allow us to find any closer connections. There is a certain lexical evidence supporting the early contact of the Kartvelians and of ancestors of the Hittites (Giorgadze 1979: 64–66; Ivanov 1979: 111–129; Gamkrelidze & Ivanov 1984: 897–898). It is in good agreement with the archaeological data, demonstrating the Transcaucasian diffusion of the bearers of the Kurgan burials into Eastern Anatolia c. 3000 BC (Winn 1981: 113–118).

Ad 2) The phonetic shape of K numerals “4” and “6” resembles the Indo-Iranian data more than any others. An Indo-Iranian character of the donor language could be supported by the existence of other lexical parallels (Klimov 1993: 29–37). The most serious question, which remains open, is the localiza-

tion of the contact in space and time. The generally accepted presence of Indo-Aryans in Eastern Anatolia in the middle of 2nd mill. BC is too late; the numerals “4” and “6” represent a common Kartvelian level, i.e. the beginning of the 3th mill. BC or earlier (Testelec 1995: 14).

Ad 3) Armenian can be probably excluded as a donor language for phonetic and chronological reasons.

d) Semitic origin:

It is remarkable that most of the K numerals can be explained as Semitic borrowings, namely “7”, “8”, “9”, “100”, and probably also “5” and “10”. There are only two Semitic languages with written records, spoken in a relative geographical proximity to Southern Caucasus in the 3rd mill. BC: Akkadian in Mesopotamy and Eblaite in Northern Syria. A hypothetical donor language can be characterized by certain features differing from historically attested Akkadian: in phonology esp. Semitic *ʃa- > K *a- vs. Akkadian e- (but Eblaite a-) and in morphology the pattern of ordinals *qaṭil* (cf. Hebrew or Aramaic) or *qāṭil* (cf. Ugaritic or Arabic) vs. Akkadian *qaṭul* (Eblaite numerals are not known, but cf. the personal name *Mu-sa-ti-sa* “she makes number 6” — Segert 1984: 54). There are more cultural Semitic borrowings in common Kartvelian lexicon, e.g. K *okro- “gold” > G *okro-*, M *orko-*, S (w)*okwr-* (Klimov 1964: 151) vs. Semitic \sqrt{wrq} > Akkadian (w)*arāqu(m)* “gelbgrün sein”, *ú-šá-ra-qu* “vergolden” (AHw 1463–64), Ugaritic *yrq* “Gelbes (Gold)” (Aistleitner 1965: 137), Hebrew *yārāq* “das Grüne”, *yeraqraq* “goldgrün”, Geez *warq* “Gold” etc. or K *uʃel- “yoke” > G *uʃel-*, M *uʃu-*, S *ūʃwa-* (Klimov 1964: 186) vs. Semitic *ǵull- “yoke” > Old Canaanite (Tell Amarna) *ḥullu*, Hebrew *ʃol*, Akkadian *ullu* etc. (Illič-Svityč 1965: 334 — 35). The Kartvelian — Semitic contact can also be documented archaeologically. In the Maikop culture from Northern Caucasus (26th-23rd cent. BC), Safronov (1989: 242–58) has identified genetic links to the Upper Euphratian culture related to the Ebla civilization. He interprets this discovery as a result of the northward migration of the bearers of Syrian civilization, speaking a Semitic language, perhaps close to Eblaite.

The presented conclusions, if correct, mean that Kartvelian was under a massive influence of other language families (North Caucasian, Indo-European, Semitic), comparable with the influence e.g. of Arabic on Siwa (Berber) or Indo-Aryan on Brahui where only “1”, “2” and “1”, “2”, “3” resp. are unborrowed. The traditionally assumed conservatism of numerals is only myth.

Abbreviations:

AA Afroasiatic, C Caucasian, E East, G Georgian, IE Indo-European, K Kartvelian, L Laz, M Mingrel, N North, S Svan, W West, Z Zan.

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- AHw = Soden, W. von, 1965–81: *Akkadisches Handwörterbuch*, I-III. Wiesbaden: Harrassowitz.
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