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Uralic numerals: is the evolution of numeral system reconstructable?
(reading new Václav Blažek's book on numerals in Eurasia)

A new book on the history of nimerals in the languages of different language families of Eurasia appeared two years ago [Blažek 1999], a chapter of it is devoted to the Uralic numerals. Its author, Dr. Václav Blažek is known not only as a researcher of Afro-Asiatic languages, being his main field, but also – and may be more – as a scholar belonging to the Nostratists' family. The last direction determines his interest to the Uralic languages, too. His impact into the Uralistics, while being may be marginal to himself and certainly not so great, is sometimes very promising: e.g., at least the best of new Aryan etymologies for Finno-Ugrian words suggested during last two decades belong to him (F.-Mord. *akšterɜ 'unfertile' < Aryan *a-kšaitra- 'uncultivated'; Vog. (Pelym) šešwė etc. 'hare' < Aryan *śasa- 'id.'; F.-Perm. *śikštɜ 'wax' < Aryan *śikšta- 'id.' [Blažek 1990: 40-43]).

Other Blažek's specialization – being to the best of my knowledge primary while recognized not so widely – is mathematics. His new book lies, so to say, at the crossroads of these two fields and is a result of the authour's long-term study devoted to historico-etymological analysis of the numerals of different language families. As it is clear from the title, the book embraces a great number of languages and language families, namely Afro-Asiatic [pp. 1-79], Kartvelian [pp. 80-88], Uralic [pp. 89-101], «Altaic» (i.e. Turkic, Mongolian, Tungus-Manchu, Korean, Japanese) [pp.102-140] and Indo-European [pp. 141-324]. As examples of "patterns of creating numerals" on the pp. 325-330 there are also given with some short comments the numerals of Papuan (Telefol, Kombai, Aghu), Eskimo, Burushaski, Sumerian, Yukaghir, Chukchi, Khoisan (San, Nama) and some Amerindian (Haida, Yuma, Chumash) languages. The Uralic part of the book is very interesting to the Uralists, since, though the subject was from the beginning of the Uralic comparative linguistics very important and recently here and there newly discussed, the Uralic numerals are at the first time considered on such a wide geographic and historical phone.

Unlike of the authour of well-known recent monograph on the same subject in Uralistics [Honti 1993] (and this difference might make these two books mutually complementing), the core of Blažek's interest is not the simple reconstruction of development of the numerals in concerned languages, but the origin of the reconstructed numerals (mainly of first decade) of the big language families enlisted above. The main authour's task seems to be not simply to trace the development of the word, but to give an *etymology* in the original meaning of the term, to show the very way of "creating" the numeral, to find the source proto-form, which later gave birth to the numeral stem. This approach, may be reasonable in some peculiar cases (s. also below), can hardly lead to appropriable results every time: since the age of reconstructed proto-languages does not exceed 6 (Indo-European) or 9 (Afro-Asiatic) thousands of years and the human language could presumably appear at least 40 or 100 thousands years ago, why should one think that the idea of numeral and so the numerals themselves should appear only during the last 6-9 millenia? On the other hand, the possibility of borrowing of the numerals should be also taken into account: the number of known examples of such borrowings is hardly less, than of evident internal etymologies for numerals of first decade.

Dr. Blažek's position on this subject is partly revealed in the chapter devoted to IE 'seven': "Studying the systems of numerals in various language families, I am convinced that it is almost always possible to determine an original motivation of all higher numerals beginning with "5". For the case of a missing etymology the following rule can be formulated: If a numeral *x* in a language *A* has no hopeful etymology and there is a similar numeral *x'* in a neighboring language *B* where *x'* is

analyzable, the question of the borrowing *x < x'* is quite legitimate" [Blažek 1999: 251]. Actually, there is nothing new in this maxima: when two words of two different languages are phonetically and semantically similar and there is a historical background to suppose a borrowing, the direction of borrowing is determated by more ancient roots of the word in one of these two languages. The question is: why look first for an internal etymology and pay attention to external parallels only in case the search of internal etymology is fruitless? Taking into account the elaborateness of, e.g., today instrumentary of Indo-European comparative linguistics and amount of compared language materials, may one seriously expect any word to become finally no internal etymology?

It is general Nostratists' mistake to think, that all the language contacts producing the loan-words had begun after the disintegration of daughter languages of the «Proto-Nostratic» and all the parallels between, e.g., Indo-European and Turkic must be considered as relics of «Proto-Nostratic» but not as traces of ancient borrowings, so Tu *(h)aδak* < «Altaic» *padak* 'leg, foot' is to be compared with IE *ped-* 'id.' but not to be considered as ancient (Proto-)Aryan loan in Turkic, despite of the Turkic word revealing evidently Aryan vocalism (*a < *e*) and Aryan (< IE) suffix *-ka*. This methodological peculiarity is relevant to some of Blažek's Uralic etymologies, but seems to have influenced more seriously the Altaic than the Uralic part of the book.

Coming to the discussion on Uralic numerals, I'd make a preliminary formal remark: the reconstructions of the Uralic numerals of first decade on the p. 89 should be either commented or given in two forms: the one prefered (constructed?) by the authour and the other taken from a standard vocabulary, which stays anyway to be the UEW. Otherwise it is very hard to understand what is ment under, e.g., *wi(i)t(t)i* 'five' and why the form is given in this way. Further in the text the authour makes references to [UEW] and [Sammalahti 1988] while using exclusively the forms from [Sammalahti 1988]. Though the work of Sammalahti is interesting, his very way of transcription differ very much from the one generally accepted in Uralistics, and his reconstructions do very often rather differ from those in UEW. This difference is not only formal and is important in a work devoted to the most ancient levels of reconstruction: either both possibilities of reconstruction should be considered, or the author's preference should be explained.

Most of the external comparisons of Uralic numerals considered in the book do not belong to the authour, this part of his study is mainly compilative. However, such a compilation is really useful and deserves detailed comments.

In looking for an internal etymology for the FU *ükte* 'one' the authour refers to different words in different Uralic languages having different meanings as 'together', 'alone', 'final', 'back', 'end', 'frontal', 'head' etc. [Blažek 1999: 90] The idea of genetic connection between the words meaning, e.g., 'only, alone' and 'one' as itself looks just natural (the question appears, however, which of the meanings had been original if it is at all possible to determine this), the problem is the accuracy of comparison: to justify an etymology of this kind there should be reconstructed one proto-form as a starting point of the etymological development, not a series of forms with a series of meanings. In the Blažek's book this series is further fullfilled by "Altaic cognates" with meanings 'upper', 'superior', 'top' and, finally, 'to lift up'. Taking into use the full set of the above mentioned meanings (why not to be in the same way voluntarily developed further, e.g.: 'to lift up' – 'to climb' – 'mountain' – 'earth' – 'sky' etc.) one shall obligatorily find some phonetically comparable word in some of the countless number of the languages and language groups attested as Nostratic. The way is fruitful: there are found Altaic cognates also for both reconstructed Samoyed proto-forms for 'one', *oj- / *əj-* and *op* [Blažek 1999: 90]. No problem: the shorter the word the more possibilities for Nostratic reconstruction.

Altaic cognates of the same kind are suggested also for U *kekta* 'two': Tung *gagda* 'one of a pair' (~ Mo *gagča / ganča* 'one, single, only'), Old Jap. *kata* 'one, single'. So, from the Nostratic point of view not only the words 'upper' and 'alone' but also 'one' and 'two' are considered as comparable. Of more interest are old parallels from North-Eastern Siberia: Yu. (Omok) *tkit* (? <*kit*) 'two' and Itelmen (Tigil River) *katxan* etc. 'two' (being apparently not a reflex

of Proto-Chukchi-Kamchadal *ŋĭče- 'two' > Itelmen nt'i-lŋin 'second' [Mudrak 2000: 104]). Opposing to them from the historical perspective ("alternative attempt" after Blažek) looks to be IE *kʷet- 'pair' (> Slav *četa, Osset. cædœ; reflected may be also in IE *kʷet-o-r 'four') which could be borrowed into U and after receiving the old dual suffix *-k appear as *ket-kä > *kekta (metathesis after *ükti 'one') [Blažek 1999: 91]. The suggested IE origin of the U 'two' can't, however, explain the main problem of this U reconstruction – the broken vowel harmony (F. kaksi ~ Hung. kettő), which is not discussed by Blažek. Could the two different external parallels: the IE (and Yukaghir ?) with palatal vocalism and the Itelmen with the velar help solving the problem?

The FU word for 'three' Blažek prefers to reconstruct – in opposing to traditional *kolme – as *kurmi basing on Hungarian (három) and Vogul (N χūrəm) data (without, however, any explanation of *-u-, which seems to appear only in his version) [Blažek 1999: 91]. Then this *kurmi is analysed as *kur-mi with "suffix of abstract nouns" *-mi, and what is left (*kur-) is compared with second segment of Sam *nä-kur 'three' (after Blažek; *näkə̂r / *näkə̂jr in [Janhunen 1977: 99]), where *nä- is presumed to be "demonstrative marker". Unfortunately, this analysing is not acceptable: first, Sam *nä- is in no way "demonstrative marker", but stem of local postpositions [Janhunen 1977: 99] and appearing of such a stem as a first part of a compositum is syntactically impossible. Second, the stem of Sam *näkə̂r is *näk- as it can be seen from Selk. (Chulym) nag-thisarm, (N by Castrén) nak sarm, (N) nāssar 'thirty' [Janhunen 1977: 99; Erdődi 1970: 149]. Therefore FU *kolme has hardly anything in common with Sam *näkə̂r and the plausible for a Nostratic perspective comparison with Mo gurban 'three' and further [Blažek 1999: 91] must be considered as fiction. A spontan development *l > *r in Ugric dialects might be possible due to Iranian influence and has at least one probable parallel: Hung. világ 'light' > (?) virág 'flower' [ETU: 532].

Looking for external parallels of FU *neljä 'four', Blažek first cites Chuvan (Matjushkin) njagon, (Boensing) nägane 'four', where -g- might originate from *-lg- [Blažek 1999: 91-92]. Regretfully enough, this Chuvan stem has no cognates in other Yukaghir languages and therefore the alternative possibility: borrowing from Koryak ŋ(ə)jaq(-ən) [Blažek 1999: 92] looks far more probable. To find Altaic cognates, Middle Kor. nəyh 'four' is mentioned, but, since except of *n- there is nothing in common with the FU numeral here, such a «correspondence» seems to be unsufficient also for Nostratics (more interesting could be separate areal comparison of this Middle Korean numeral with Gilyak stem *nV- 'four', also mentioned here by Blažek – but in Nostratic contex). Therefore a complicate analysis of Manchu-Tungus and Mongol numerals is suggested to reveal unrevealable relics of the same root, e.g., in Tung *ńöŋün 'six' < **ńöl-ʒu(n) = 'ten (Tung *ʒuwan) minus four (thus, *ńöl-)' [Blažek 1999: 92]. Why should a compound of two pure stems with meaning 'four-ten' mean 'ten minus four' in a language with normal Ural-Altaic syntax stays to be a mistical enigma – to say nothing about the procedure of the analysis of this kind: its non-scientific character needs in principle no comment for those working outside Nostratics. On the other hand, Blažek is certainly right when writing: "besides hypothetical Yukaghir and Altaic cognates, there is a perfect correspondent in the Dravidian numeral *nāl '4' " [Blažek 1999: 92]. It is not clear, whether he means again a Nostratic perspective or more realistic explanation within the frames of hypothesis of ancient FU-(quasi-)Dravidian contacts.

In the section devoted to Sam *tettə̂ 'four', Blažek writes: "the attempts to find an internal Sm etymology are <...> unconvincing <... some ideas had been suggested> but the semantical motivation is not clear" [Blažek 1999: 92-93]. This passage contrasts with normal approach of the authour: usually such boring peculiarities as semantical motivation do not play any role when Nostratic perspective is concerned (see examples above). Proceeding with "on the other hand, Sm '4' could be a borrowing" Blažek suggests a hypothesis of Bolgar-Turkic origin of the Samoyed numeral – cf. Chuvash tăvattă < *tüät < Tu *dōrt 'four' [Blažek 1999: 93]. Since at least one more Samoyed numeral (*jür 'hundred') is undoubtedly of R-Turkic origin (cited also by Blažek), this

etymology seems to be very promising and should be introduced into the Uralistic etymological compendium. So, in more historically reliable field (language contacts), the results of work of such a prominent linguist as Blažek are evidently more relevant and productive (see also the examples of his Aryan-FU etymologies above), than in nebular omnicomparativistic constructions.

FU *witte* 'five' is considered as corresponding to Sam *wüt* 'ten' and for U proto-form the authour accepts A.Joki's semantical reconstruction 'great number, many' [Blažek 1999: 93]. From phonetical point of view the comparison FU *witte* 'five' ~ Sam *wüt* 'ten' is indeniable. However, the semantics lead to rejection of Uralic etymology by sceptics (see the last generalization in [Honti 1993: 94]). Therefore it deserves more detailed reconsideration (this should be probably done by Blažek, but there is no mention about the problem in his book). The arguments of Honti were the next:

1) every numeral to begin from 'four' and 'five' can in peculiar situation mean 'great number, many' and therefore Joki's reconstruction is senceless. This is certainly right; I'd only comment the Finnish example drawn by Joki and repeated by Blažek to demonstrate the alleged preservation of the meaning 'great number, a lot of' in F. *viisi* 'five': *viittä vaivainen vailla* 'dem Armen fehlt viel'. Since the example comes undoubtedly from Kalevala-metric poetry, the only numeral of the first decade, which could be used there is *viisi*: only this one begins with *v-* and fits thus in the alliteration pattern (cf.: "*Kantoi kohtoa kovoa, | vatsantäyttä vaikeata | vuotta setsemän satoa, | yheksän yrön ikeä*" etc.);

2) to fullfil its function a numeral must mean only one and the same number. This should be discussed together with the next argument:

3) the supposition on the semantic shift 'five' > 'ten' in Proto-Samoyed is incorrect because this would put the conclusion before the starting point; besides, there is no proof of original meaning 'hand' of this root and two 'fives' do not compose a natural pair as body parts to make 'ten'. – A numeral must really have only one meaning (I pointed out this rule speaking about Blažek's comparisons on Uralic and Altaic 'one' and 'two' above, too). The problem is that numerals function in a system of counting, and their place in this system is not equivalent. So, e.g., in our decimal system the numerals 'ten', 'hundred' and 'thousand' have special meanings representing the *basic* numbers. These basic numerals are used in formation of compound numerals ("two hundreds"), in approximative counting ("hundreds of people"), marking jubilees etc. Living in the world, where decimal system reigns and – as it can be seen from the Blažek's book – had reigned from the times of reconstructable proto-languages, one can hardly suppose what happens, when one numeral system replaces or grows up from another. However, comparatively late development of the decimal system in the Finno-Ugrian languages may be illustrated by foreign (Aryan) origin of the numerals 'hundred' (FU *śata*) and 'thousand' (FU *śasra*), also – 'ten' in Permian (*das* < Aryan) and – what is especially important here – by FU *luka* 'count, counted' with derivatives meaning 'ten' in Lappish, Cheremis and Vogul [Honti 1993: 120]. The last example shows actually the original meaning 'main number' of FU 'ten' in most of the languages, where the word had not been borrowed. The same observations may be made on the Samoyed languages: the word for 'hundred' (Sam *jür*) at least is a R-Turkic loan-word, on other probable borrowings see above and below. In the same way as in most of Proto-Finno-Ugrian dialects the original meaning of the Samoyed word for 'ten' might be '(main) number'. Since derivatives of the same Uralic root mean 'five' in Finno-Ugrian, there should be supposed the former existence of a quinary system of counting, i.e., of the system, where number 'five' had been the 'main number', in Proto-Uralic. Thus the semantical problem can be solved: U *witte* 'five; main number, basic number of the (quinary) counting system' > 'main number of the decimal system, ten' in Sam.

In this case the marginal Altaic parallels: Old Jap. *itu* 'five' and Old Kor. (Koguryo) *utu / *uč* 'five' cited by Blažek may be of real interest for looking most ancient roots of the Uralic numeral – hardly in classical Nostratic (genetical), but in areal context.

Sam *sǝ̂mpǝläŋkǝ̂ 'five' is certainly a derivative, and Blažek agrees with Joki, who saw the meaning of original stem *sǝ̂mpǝ̂- '(?) hand' reflected in Nenets sampā 'to swing in hands' [Blažek 1999: 93]. There may be suggested alternative etymology: from Sam *sumpǝ̂ 'butt (of an axe, a knife), back (of a fish)' [Janhunen 1977: 144] – when meaning 'wrist, backside of fist' is to be supposed here.

FU *kutte and Sam *mǝktut 'six' are considered [Blažek 1999: 93] as "evidently unrelated" but "formed on the basis of the same semantic pattern", namely – 'beyond five' (or better 'back of five'): FU *kutte < U kuttɜ 'back' [UEW: 225], Sam *mǝktut < Sam *mǝkå < U *muka 'back' [Janhunen 1977: 85; Sammalahti 1988: 538]; *-ut in Sam *mǝktut may be in this case interpreted either as relic of Sam *wüt in its archaic meaning 'five', or as Sam *utå 'hand' [Janhunen 1977: 30] (this last part of the etymology is not so much probable because of syntactical difficulties). These brilliant comparisons are the best part of the Uralic chapter of Dr. Blažek's book and without doubt represent his new impact into the list of classical Uralic etymologies. Besides, there are not so many of etymologies, where the internal word formation in Proto-Finno-Ugrian etc. can be traced, and Blažek suggests at lest two new of this kind and – ever more astonishing – in such a well-studied sphere as numerals.

F.-Perm. *śeććem 'seven' – in opposing to groundless statements of some Uralists (see, e.g., [Honti 1993: 100]) – is not considered by Blažek as a parallel to phonetically incomparable Sam *sejtwǝ̂ (s. below). To the evident phonetical difficulties there should be added the fact, that this comparison does not also pass to the reconstructed Proto-Uralic numeral system: there is no proof of existence of any numeral except 'two', 'five' (s. above) and may be 'ten' and 'twenty' (s. below). This set does not allow to reconstruct a decimal system, where special words for numerals between 5 and 10 would be expected. Moreover, there are serious reasons to suppose that the formation of decimal system took place later, in the period of separate development of Finno-Ugrian and Samoyed branches and in course of their contacts with Indo-European and Turkic (s. above). Therefore more probable seems to be the idea of a borrowing, and namely – from some Indo-European source close to the Baltic or Slavic [Blažek 1999: 93-94]. Since Blažek cites and critisizes also my hypothesis of the origin of F.-Perm. *śeććem, I should make some corrections to earlier published version. It was written in the printed version of my article about "early Proto-Slavic" form of type *setĭmĭ (phonetically *śetʲĭmĭ) to be the source of Finno-Permian 'seven' [Napolskikh 1995: 125], and one can say, that this formulation "entails serious difficulties in phonology and chronology" [Blažek 1999: 94]: though I do not see, what the phonological difficulties are, a borrowing from (even early) Proto-Slavic into Finno-Permian really looks as an anachronism. What I actually meant then and what I mean now is an early Indo-European dialect (one of the languages spoken by the bearers of Battle Axe cultures), which most probably has no surviving offsprings but belonged to the same linguistic area, where from the Baltic (i.e. Balto-Slavic) languages also developed. Therefore some features and trends of development of this dialect could be similar to those later revealed in the languages of Slavic branch of Baltic linguistic continuum. In this peculiar case I suppose early or proto- or quasi- or para- (the last seems the best for me, but the terms are conventional) Baltic *setem-, phonetically *śetʲem- (close to Slav *setĭmĭ or better *setę < *se(p)tim- < IE *septm̥-) to be the source of F.-Perm. *śeććem 'seven'. This solution entails no phonetical or chronological difficulties. The only problem is readiness of a scholar to accept the idea, that most of the languages, which took part in ancient contacts, had not left living descendants, and therefore among the loan-words in, e.g., Uralic languages there may be found those reflecting the forms of disappeared (e.g.) Indo-European languages, and these loan-words together with our knowledge of the development tendencies of the related languages are the only source making it possible to reconstruct some fragments of these otherwise utterly unknown ancient languages.

Speaking about Proto-Ugric 'seven' Blažek prefers to consider the origin of Hungarian and Ostyak words on one hand (Ug *θäpt(ɜ) after him) and of Vogul word (*sāt) – on the other hand – separately: *θäpt(ɜ) to be of Aryan or Proto-Tocharian origin and *sāt reflecting early Tocharian B

*ṣwət [Blažek 1999: 94]. This early Tocharian B *ṣwət originates from hypothesis of W.Winter aimed to explane Toch. B ṣukt 'seven' developed from IE *septṃ- through the next reconstructed stages: *septṃ- > *səpətə- > *ṣwət > *ṣut and > ṣukt (/ ṣuk) by analogy with folowing okt 'eight'. Being in no way a specialist in Tocharian historical phonology, I can only express my astonishment seeing such a strange form as Proto-Toch. *səpətə-, which has no ground in IE proto-form. On the other hand, there is no reason to consider the Vogul word separately from the Hungarian and the Ostyak – at least, these two have hardly more in common with each other, than every of them with the Vogul word. I think (see also [Napolskikh 1995]), that Ug *Säpt (my version generalizing the variations of initial consonant in three Ugric languages) should be considered either as a borrowing from Proto-Toch. *ṣəpt or as a loan from an Aryan language («Andronovo-Aryan» after E.Helimski [Xelimskij 2000: 507, 509-510]) – cf. AInd. sapta-.

Since – according to new position of Janhunen – the archetype of Sam *sejtwə̂ 'seven' may be restored as *sejptə̂, my old idea of borrowing of early Proto-Toch. B *ṣəwktə̂ > Sam *sejk(/t)wə̂ [Napolskikh 1995] cited also in [Blažek 1999: 94] may be successfully put aside, and Proto-Toch. *ṣəpt(ə̂) should be considered as most probable source of Sam *sejptə̂ – after Janhunen and Blažek.

For Finno-Volgaic and Permian 'eight' and 'nine' Blažek [Blažek 1999: 94-95] prefers my (staying still unpublished) hypothesis to the old artificial constructions reflected in main works [UEW: 643; Honti 1993: 106-111]. F.-Volg. *kakteksa(n) 'eight' and *ükteksä(n) 'nine' are traditionally analyzed as *kakta-eksän and *ükte-eksä where *kakta 'two' and *ükte 'one' are put together with *-eksä(n) and the last is considered as negation verb stem *e- + «modal-reflexif conjugational suffix» *-k- + Px3 Sing suffix *-sä- + «dual suffix» *-n with output meaning 'two / one does not exist'. Without saying that such a monstrous form as *e-k-sä(-n) is not documented (and can hardly be imagined) in any Finno-Permian language, one should take into account the fact that the negation-verb *e- is not independent but appears only an auxiliary verb, and therefore „does not exist, is not" is, e.g., in Finnish not *eksä, but ei ole.

The Permian forms are usually divided as (Zyr. example) kękja-mįs 'eight', ok-mįs 'nine'. The part -mįs is distinguished after comparing these words with Zyr. (only) dialectal (some) forms for tens as komįz 'thirty', ńeľamįs 'forty', kwajtemįs 'sixty'. Therefore the Perm forms for 'eight' and 'nine' are traditionally reconstructed as *kįkja-mįn(ȝ)ś and *ȯk-mįn(ȝ)ś, where *kįk is 'two' and *ȯk 'one' [Honti 1993:156-159] to connect them with the «normal» formant *-mįn in the Permian words for tens (present actually only in Komi-Zyrian, in Votyak recognizable with problems only in ku̯amįn 'thirty') augmented by elativ suffix *-ś. Phonetically the development *-mįn(ȝ)ś > -mįs is, however, hardly possible: normally one should expect *-mįź / *-mįʒ́ or at least *mįś. Therefore as more reliable would look a solution with reconstructing hypothetical Perm *mįs (?) 'ten' (has no parallels in any other language) in addition to another hypothetical Perm *mįn 'ten' (with Ugrian parallels as Vog. (N) naliman 'forty' etc. and Hung. negyven 'id.' etc., though these forms can reflect ancient *wen or *ŋen as well as *men). Certainly, one may reconstruct as many words for 'ten' as one wants, but it can't help in real understanding of the history of numerals in Permian languages.

What I suggested in personal discussion with Blažek and what he accepted and cited in his book is the idea of formation of Finno-Volgaic and Permian 'eight' and 'nine' after one and the same pattern with old nominal derivation suffix *-ȝs added to numerals 'two' and 'one' with abessive affix (in Finno-Volgaic languages) *-tVk (abessive of the nouns, > F. -ttA , Voty. -tek etc.) and (in Permian) *-tVm (abessive of the adjectives and adverbials, > F. -tOn , Voty. -tem etc.). The F.-Perm. abessive suffixes *-tVk and *-tVm when compared, e.g., with coaffix -kVtV-ľ of abessive adverbials in Selkup can be traced down to U *-ktV- and should be thus presented as archetypes *-ktV-k and *-ktV-m. So, for 'eight' and 'nine' in Finno-Permian dialects there should be reconstructed parallel forms *kakta-kta-k-ȝs(-ȝn) and *ükte-ktä-k-ȝs – for early Proto-Finno-Volgaic and *kakta-kta-m-ȝs and *ükte-ktä-m-ȝs – for early Proto-Permian, meaning respectively '(existing / something) without

two / one'. Following processes of inevitable phonetical simplification of internal consonant clusters in *kakta-kta-m / k-зs and *ükte-ktä-m / k-зs could later lead to historically attested forms. The only difference between early Finno-Volgaic and early Proto-Permian is the use of substantive derivation model (coaffix *-k in *-ktVk) in the first and of the adjective model (coaffix *-m in *-ktVm) in the last. The formation of numerals 'eight' and 'nine' after model 'ten without...' on the common Finno-Permian level concords with the evidencies of relatively early appearance of decimal counting system by the Finno-Ugrians (Aryan loan-words 'hundred' and 'thousand' are of common FU origin).

Discussing Ug *ńalз- 'eight' Blažek [Blažek 1999: 95] cites versions existing in the literature and seems to be inclined to support the idea of connection between this numeral and FU *neljä (> Ug *ńiljĭ) 'four' commenting the main problem – different vocalism – as next: "but the same opposition appears in the numeral 'two' between Finno-Permic and Ugric numerals". Since it is hard to understand, how can the enigmatic difference between front vocalism in the reflexes of Uralic 'two' in Samoyed and Ugrian and back vocalism in Finno(-Permian) help in solving the problem of difference in vocalism between Ugrian 'four' and Ugrian (FU) 'eight', this Blažek's remark can't be accepted as a new argument. Other old etymologies: connecting the root with Hu. nyaláb 'bundle' ~ Ost. (Vakh) ńula 'together' or with Ob-Ugrian *ńăl 'nose' are really "semantically rather vague". However, Blažek's geographically very remote typological parallel from Tzotzil ni`(il) 'nose; in front of' to support the etymology Ug 'eight' = '[two] before ten', where 'before' is represented by grammaticalized word for 'nose' may be supplemented by more relevant Osset. fyccag 'first' < fynз 'nose' and Voty. niṛiś 'first' < niṛ 'nose'.

Numerals 'nine' in different Ugrian and 'eight' and 'nine' in different Samoyed languages having evident etymologies of kind 'twice four', '(ten) without two / one' etc. are analized in just traditional way [Blažek 1999: 95-96].

So-called "Finno-Volgaic" *küme(ne) 'ten' is more correctly (also from the historical point of view) attested in [Blažek 1999: 96] as "Finno-Mordvinian" and old comparison with Yu. *kümne 'ten' is supported. Itelmen parallel (South Itelmen kumthuk 'ten' ~ koomnak 'five') after Ankeria is also added here, though it looks worse than other interesting Itelmen parallels cited by Blažek. Old hypotheses by T.Sköld (later repeated by B.Čop and only after him cited by Blažek) – on the connection of F.-Mord. *küme(ne) with IE *-k̂m̥ alledgedly 'five' in *dek̂m̥ 'ten' artificially analyzed as 'two-five', and by K.Bouda – on the Yu. *kümne being a borrowing from Eskimo (Alaska Eskimo qoln 'ten' etc.), are rightfully declined by Blažek. A question appears, whether K.Bouda's phantasies should always be mentioned in a serious work: certainly, he seems to have compared may be every two freely taken language groups of the world. But his «method» is similar to many newest trends in Nostratics and can only demonstrate the well-known fact, that "a scholar who welcomes such <i.e. used in these Nostratic and in Bouda's works – V.N.> assumptions and equipped with comprehensive lexical sources would be able to posit and «prove» any set of phonetic correspondences between any two languages, related or unrelated" [Xelimskij 2000: 479].

Further on, Blažek supports the internal Uralic etymology for *küme(ne) suggested by K.Majtinskaja: from U *ku 'question <and relative – V.N.> particle' + *mзnз 'quantity, many' (also used in formation of 'tens' in Permian and Ugrian languages – see above by Permian 'eight' and 'nine'). This etymology was rejected in [Honti 1993: 119 pass.] with almost the same arguments as were discussed above by FU *witte 'five' and beside others: "der Beteutungswandel 'viel' → 'zehn' ist kaum akzeptabel, da in Zahlwortsystem die strenge Sukzessivität, der unveränderlich bestimmte Platz der einzelnen Glieder entscheidend ist". This statement brilliantly demonstrates two basic points implicitly underlaid Honti's approach to the study: first, that there is no need to substantiate general typological statements about any semantic development being possible or not with any examples (it is known) and, second, that the numeral system and – better to say – the very language itself must be "unveränderlich" (certainly, otherwise its investigation would be too complicate). In difference to Honti, Blažek tries to find real facts of different languages to illustrate his statements; in this case he writes "the semantical development 'quantity / many' → ('number') → 'ten' is plausible, cf. Semitic

*ʕáŝar 'ten' vs. Egyptian ʕš3 'many, numerous, multitude' " referring also to probably same origin of Even *mian 'ten' (from the same Eurasiatic or «Nostratic» stem presented in Altaic (after Starostin) *mania- / manai- 'many' and the well-known origin of word for 'ten' from the root 'count' in some Finno-Ugric languages (s. below).

The component *mɜnɜ is supposed by Blažek to be present also in Mord. kom(e)ś 'twenty' considered by him as derivative from U *koje-mɜnɜ-śɜ – a variation of U *koje-śɜ / -ćɜ > FU *kuśɜ 'twenty'. Thus, Blažek accepts F.Kovács's theory of derivation of FU *kuśɜ 'twenty' from U *koje- 'man' (though without reference) [Kovács 1960]. When Mord. kom(e)ś is concerned, he should take into account, that, as it was shown by Rédei [Rédei 1965], the Mordvinian form may be derived directly from U *koje-śɜ / -ćɜ. All these problems are discussed in [Honti 1993]; it seems so, that Blažek had not put deserved attention to this very important compilation in his studies on Uralic numerals.

The FU *luka 'ten' is considered in the book traditionally as a derivation from FU *luke- 'to count' [Blažek 1999: 97]. I'd add that here we actually deal with a later parallel (hardly common, i.e. coming from a common (FU) proto-language) innovation in Lappish, Cheremis and Vogul demonstrating one of possible ways of development of decimal counting system. Old interesting comparisons of FU *luka with Itelmen (again Itelmen !) lüx- 'number, count' on one hand and with IE *leĝ- 'to count, to read' are mentioned by Blažek without any further comments.

Nothing new is said [Blažek 1999: 97] about well-known Aryan origin of Hung. tíz and Perm *das 'ten' and Tungus origin of Mator ǯuen 'ten'. For puzzling Ost. *jȯŋ 'ten' in addition to probable Tungus sources (the best, though differing in vocalism, seems to be Evenki ǯāŋnā 'ten objects' especially mentioned by Blažek) a possibility of unattested Turkic source *ön (instead of normal *on) 'ten' is suggested, but since the form with front vocalism is hardly possible in Turkic and, anyway, *j- and *-ŋ in Ostyak stay unexplained, this suggestion must be undoubtedly rejected.

As a summary to the Uralic chapter Blažek gives a table marking external parallels to the Uralic numerals mentioned in the text. There is omitted Itelmen parallel to FU *luka (s. above) – a misprint? The reconstructions of Proto-Uralic numerals are given in the table in the next forms:

	Uralic reconstruction by Blažek	my comments
1	*ük-	actually – only FU *ükte
	*op-	only Sam
	*oj-	only Sam
2	*ket- / *kat-	actually – U *kekta, probably from more ancient *ket- with good Yukaghir cognate
	*koj-	no real traces in Uralic
3	*gur- <sic!>	artifitial false construction, a hybrid of FU *kolme and Sam *näkɘr; actually there are no possibility of reconstructing Proto-Uralic word for 'three'
4	*ńel- / *ńal-	actually only FU *neljä with good perspective of Proto-Dravidian origin
5	*wi(t)t-	U *witte (> 'ten' in Samoyed)
10	*kümen-	F.-Mord. *küme(ne) with good Yukaghir parallel < Proto-Uralo-Yukaghir *kümen- 'number, quantity; (?) ten'

As it can be seen, most of these Blažek's Proto-Uralic recontructions are too optimistic if not to say simply bad. Therefore his conclusion: "the internal evidence and external parallels allow us to reconstrucy the proto-Uralic numeral system consisting of the numerals 1-5. Although there are no evident Sam cognates to FU *neljä '4', the probable foreign origin of the Sam (< Turkic) and the

external evidence justify projecting this numeral onto the proto-Uralic level <...> Among various denotations of the numeral '10', the Finno-Mordvinian *kümeni* seems to be the most archaic, given proto-Yukaghir *kümne-* '10'. The counting system with firmly established numerals 1-5 and 10 looks perhaps as illogical to Europeans, but it is well-known, e.g., in Bantu languages. It does not mean the numerals 6-9 did not exist in proto-Uralic: they could be formed (and were formed) through the existing numerals 1-5 and 10 and elementary arithmetic operations" [Blažek 1999: 98] can in no way be accepted. Despite of his optimism, it should be said, that there is no possibility to reconstruct more than *kekta* 'two', *witte* 'five' and (only thank to the Yukaghir parallel) *küme(ne)* 'ten' / '(great) number, quantity' for Proto-Uralic. Also a word for 'one' should be typologically presupposed, though we can't guess what phonetic shape had it had.

When external parallels are concerned, one can regretfully mark, that Blažek did not make any estimation of different parallels enlisted in his book, and therefore his conclusion: "this cognate set reflects the East (North) Nostratic level, approximately corresponding to J.H.Greenberg's Eurasiatic. The material correspondences among numerals indicate closer relationship among Uralic, Yukaghir and Altaic (including Korean and Japanese) within East / North Nostratic" [Blažek 1999: 98] is also groundless. Actually, only above mentioned Yukaghir, Dravidian and some Indo-European and Itelmen (taken often separately from other Chukchi-Kamchadal languages) parallels deserve serious attention. All the Altaic parallels except of the really ancient Northern-Eurasiatic (may be called also «Nostratic») stem *mone* 'many' and of the Turkic words suggested as sources for borrowings into Proto-Samoyed are certainly of no real value. Thus, the reference to Greenberg may be regarded as rightful: Blažek's attempt to find a set of numerals reflecting "the East (North) Nostratic level" is as well-grounded as Greenberg's omnicomparativistic phantasies.

As it can be seen, Blažek's analysis of the Uralic numerals seems to be opposite to the Honti's: the first is too optimistic and overambitious and therefore facing a danger not to be accepted seriously by most of the Uralists, the second – too conservative and essentially compilative and therefore forming the illusion of final knowlegde (i.e. end of science). Being sure there are a lot of unsolved problems which are to be and can be solved, but not ready to accept superficial Nostratistic approach, I dare to suggest a step towards a bit more deep and historically and culturally relevant analysis of the Uralic numerals taking into consideration the possibility of reconstruction of evolution of the counting system (following in general the way presented in [Kovács 1960]) and using the etymologies verified by methods of traditional Uralistics and those newly suggested by Blažek, which fit in the established phonetical correspondences, and also typological parallels from very useful and stimulative Blažek's book. My hypothesis is put into the table below, where I tried to show probable counting systems which we can suppose for Proto-Uralo-Yukaghir, Proto-Uralic and Proto-Finno-Ugric and Proto-Samoyed basing on the reconstructed numerals and examples of counting systems existed in different languages.

	UYu	U	FU	Sam
1	(?)	(?)	*üke	*o- (*oə̂-)
2	*ket	* kekta	*kektä	*kitä
3			*kolme	*näkə̂(j)r
4			? Drav. *nāl ····> *neljä	Tu. (Bulg,.) *tüät (Chuv. tə̂vattə̂ < Tu. *dȫrt) ····> *tettə̂
5		*witte	*witte	? Sam *sə̂mpə̂- 'hand' → *sə̂mpə̂läŋkə̂
6			PU *kuttз 'back' → *kutte	Sam *mə̂kå 'back' → *mə̂ktə̂(j)t
7			Balt. *seťem F-P *śeććem / Toch. *səpt / Ar. *sapta → Ugr *Säpt	Toch. *səpt ····> *sejtwə̂
8			*'without two'	*'without two'
9			*'without one'	*'without one'
10	(*kümen-) 'number; many'		*kümene / *luka 'count, main number'	*wüt 'ten'
20		(*koje-śe) 'man'	*kuśe	*'two-ten'
100			Ar. *śata ····> *śata	Tu. (Bulg.) *jür (Chuv. śər < Tu. *jüR) → *jür
Basic numerals	**(one) two many**	**(one) two five twenty**	**one ten hundred**	**one ten hungred**
Counting	1 2 2+1 2+2...	1 2 2+1 2+2 5 5+1 ... 2×5... 2×5+5... 20...	1 2 3 4 5 6 7 10-2 10-1 10... 100...	1 2 3 4 5 6 7 10-2 10-1 10... 100...

Typological parallels:

to UYu	to U	to FU and Sam		
Aghu (Trans-New Guinean fam.) 1 *fasike* 2 *okuomu* 3 *okuomasike* 4 'little finger' 5 'palm' 6 'palm + 1' 7 'palm + 2' 10 '2 palms'	**Eskimo (Alaska)** [1-4 varia] 5 '*hand' 7 '+ 2' 8 '+ 3' 10 '*upper side' 11 '10+1' 15 '*in front of' 16 '15+1' 19 '20 not' 20 'man'	**Sumerian (counting of days: 1,3)** 1 *be* 2 '1+1' 3 *PEŠ* (? *'next') 4 '3+1' 5 '3+1+1' 6 '3+3' 7 '3+3+1' ...	**Sumerian (5, 20)** 1 *aš* 2 *diš* 3 *min* 4 *eš* 5 *i* 6 '5+1' 7 '5+2' 8 '5+3' 9 '5+4' 10 *u* (*'many') 20 '2×10'	
Jawony (Pama-Nyungan fam.) 1 *ʌṇṭiriň* 2 *ṭatkǔraŋ* 3 '2+1' 4 '2+2' 5 '2+2+1'	**Haida (Na-Dene fam.)** 1 *sgoā'nsiñ* 2 *stiñ* 3 *lgu'nul* 4 '2×2' 5 *lē'il* 6 '3×2'... 10 '5×2'			
San (Khoi-San fam.) 1 */wi* 2 */ám* 3 *ng!ona* 4 '2×2' 5 'hand'	**Yukaghir (Kolyma)** 1 *irkiei* 2 *ataxloi* 3 *yaloi* 4 '3+1' 5 'hand' 6 '2×3' 7 '2 above' 8 '2×(3+1)' 9 '10 without 1' 10 *kunel*			

The Sumerian example shows, that there might co-exist two (or more) counting systems, one being the main and the other used for special purposes. Examples of this kind may be found in many other, also just normal European languages (as counting by dozens, using vigintimal system in official written Danish etc.).

The development of the Uralic counting systems reconstructed here is, to my mind, connected not only with the chronology of the proto-languge stages (more ancient = more archaic system), but also (if not mainly) with the step-by-step inclusion of the Uralic-speaking population into the Eurasiatic cultural area. At least, the appeerence of the decimal system was undoubtedly inspired by the Uralic-Indo-Europen (and Uralic-Turkic) contacts.

Abbreviations

AInd. – Ancient Indian, F. – Finnish, F.-Mord. – Finno-Mordvinian, F.-Perm. – Finno-Permian, F.-Volg. – Finno-Volgaic, fam. – language family, FU – Proto-Finno-Ugrian, Hung. – Hungarian, IE – Proto-Indo-European, Jap. – Japanese, Kor. – Korean, Mo – Proto-Mongolian, Mord. – Mordvinian, N – northern, Osset. – Ossetian, Ost. – Ostyak, Perm – Proto-Permian, Sam – Proto-Samoyed, Selk. – Selkup, Slav – Proto-Slavic, Toch. – Tocharian, Tu – Proto-Turkic, Tung – Proto-Tungus, U – Proto-Uralic, Ug – (Proto- / common) Ugrian, UYu – Proto-Uralo-Yukaghir, Vog. – Vogul, Voty. – Votyak, Yu. – Yukaghir, Zyr. – Zyrian.

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