Indo-Uralic and Altaic revisited

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After Dybo & Starostin's comprehensive rebuttal (2008) of Vovin's critique (2005), one may wonder if it is useful to continue a debate which seems to lead nowhere and can only deter younger scholars from entering the field of Altaic studies. Yet I think that progress can be made by ending the controversy and developing a positive attitude to new perspectives. On the one hand, one cannot expect radical breakthroughs in a field where very few scholars are working on a number of extremely heterogeneous cultural traditions. On the other hand, the dramatic progress of Indo-Uralic studies in recent decades shows that there is room for unexpected results. Dybo & Starostin's civil tone and admirable restraint contrast starkly with Vovin's vicious rhetoric and personal insults. In my view, the Altaic controversy can be ended by abandoning emphasis on separate etymologies and shifting the attention to morphological correspondences and questions of chronology. The Vovin controversy can perhaps be ended by temporarily excluding this author from the debate and giving him a chance to reconsider the volatility of his position and the damage he has inflicted on the field by his offensive style of writing. In the meantime it is important to stimulate younger scholars to take part in a discussion which is traditionally dominated by an elderly generation.

Dybo & Starostin claim (2008: 135) that "if genetic relationship between two or more languages can be demonstrated on morphological evidence, it will inevitably show up in the basic lexicon as well" whereas "if genetic relationship can be demonstrated on lexical evidence, it will not necessarily be detected within the compared languages' morphology as well". The problem is that critics of the Altaic hypothesis find most etymologies unattractive or suspicious and feel that the corpus of Altaic comparisons comprises not only possible cognates but also obvious loanwords, accidental lookalikes and even totally irrelevant non-lookalikes (as one colleague put it in an e-mail message to me). This assessment of the Altaic etymological dictionary is partly based on a misunderstanding. Like Pokorny's etymological dictionary of the Indo-European languages (1959), Starostin's dictionary is an essentially achronic collection of materials which can be used for analysis and reconstruction. Nobody today would subscribe to Pokorny's reconstructed forms, and the same may be the fate of Starostin's in the future. The quality of an etymology becomes more difficult to assess as we move deeper into the past because more unforeseen things may have happened. This is why there is reason to attach less value to separate etymologies at a larger time depth, unless there is independent evidence for the chronological layer to which they may belong, such as geographical distribution or relative chronology of specific changes. Note that Starostin et al. date the earliest split of Proto-Altaic to the sixth millennium BC (2003: 236), which means that Proto-Indo-Uralic and Proto-Altaic may have been spoken around the same time.

When we look at language interference in bilingual communities, it appears that there is a marked difference in the ease of linguistic borrowing between grammar and lexicon, between bound and free morphemes, and between verbs and nouns. As a result, the older strata of a language are better preserved in the grammatical system

than in the lexical stock, better in morphology than in phonology or syntax, better in verb stems and pronouns than in nouns and numerals. The wide attestation of the Indo-European numerals must be attributed to the development of trade which accompanied the increased mobility of the Indo-Europeans at the time of their expansions. Numerals do not belong to the basic vocabulary of a neolithic culture, as is clear from their absence in Proto-Uralic and from the spread of Chinese numerals throughout East Asia. The inequality between different parts of a language in linguistic borrowing is of particular importance when we are dealing with distant affinity.

In a study of the earliest contacts between the Indo-European and Uralic language families (1986), Rédei lists 64 words which were supposedly borrowed from Indo-European into Uralic at an early date. The material is divided into three groups: 7 Indo-European words which are attested in both Finno-Ugric and Samoyedic, 18 Indo-European or Indo-Iranian words which are attested in Finno-Ugric but not in Samoyedic, and 39 Indo-Iranian words which are found neither in Ugric nor in Samoyedic. Now it turns out that the number of verbs in the oldest material is too large to support the hypothesis that they were borrowed: verbs constitute 43% of the first group, 28% of the second group, and 5% of the third group. This is strong evidence for the thesis that the oldest layer was in fact inherited from an Indo-Uralic proto-language. Though the material is very small, the case for an original genetic relationship is particularly strong because we are dealing with basic verbs meaning 'to give', 'to wash', 'to bring', 'to drive', 'to do', 'to lead', 'to take' (cf. Kortlandt 1989). Moreover, it is difficult to see how Proto-Indo-European words could have been borrowed into Proto-Uralic if the Indo-Europeans lived in the South Russian steppe when the ancestors of the Finno-Ugrians and the Samoyeds lived on the eastern side of the Ural mountains. The earliest contacts between Indo-European and Uralic languages must probably be identified with the eastward expansion of the Indo-Iranians and the simultaneous spread of the Finno-Ugrians to the southwest. Thus, it appears that we do not need a large number of obvious cognates, which cannot be expected in the case of distant linguistic affinity, in order to establish a genetic relationship between languages.

Dybo & Starostin argue (2008: 128) that "it is unreasonable to expect to be able to reconstruct paradigmatic morphology when dealing with macrofamilies" because a morphological system can undergo an overwhelming collapse over a relatively short period of time, as happened in the case of Classical Latin. However, this does not generally hold for the separate elements which make up the morphological system. The advantage of morphology over the lexicon is that it offers two types of chronological clue: in addition to sound changes which affect both lexical and morphological elements, the development of morphosyntactic categories poses obvious restrictions on the genesis and development of paradigmatic systems. In my reconstruction of the Indo-Uralic verb (2002) I have argued that the Indo-European verbal system can be derived from combinations of Indo-Uralic morphemes by a series of well-motivated phonetic and analogic developments. It is precisely the explanation of the Indo-European system of paradigms in terms of its Indo-Uralic origins that corroborates the reconstruction of the original morphemes.

There is additional evidence for Indo-Uralic in the relation between Proto-Indo-European root structure and accentuation discoverd by Lubotsky (1988: 169-170). It appears that in the case of derivatives of roots with a stop which is

contiguous to the syllabic nucleus but without an initial laryngeal, *o*-stems are barytone if the root contains a voiceless obstruent and oxytone if the root contains a voiced obstruent whereas *i*- and *u*-stems are oxytone if the root contains a voiceless obstruent and barytone if the root contains a voiced obstruent, regardless of the ablaut grade of the root. This highly peculiar distribution can be explained by the assumption that Indo-European underwent the "rhythmic" and "syllabic" consonant gradations reconstructed for Proto-Uralic (cf. Helimski 1995: 24-26 = 2000: 172-174) followed by a vowel gradation which shifted the stress toward the end of a word form and gave rise to the ablaut system (cf. Kortlandt 2004b: 165). Here again, Indo-Uralic offers an explanation for a state of affairs attested in Indo-European which remains unexplained if the Uralic data are not taken into account. Since the two Uralic consonant gradations were phonetic developments, one could suggest that their operation in Indo-European might be the result of substratum influence, or conversely. This suggestion meets with two difficulties. Firstly, the common chronology of the consonant gradations rather points to a shared innovation at a time of structural similarity. Secondly, the hypothesis of substratum influence before the Indo-Europeans arrived in Europe and acquired their highly characteristic linguistic features is arbitrary. It is definitely more probable that we are dealing with a single language family which split up when the Indo-Europeans moved westwards while their relatives stayed behind. My reconstruction of the Indo-Uralic phonological system is essentially the same as Sammallahti's for Proto-Uralic (1988), except for the fact that I reconstruct palatalized resonants *r′* and *l′* for his dental spirants *ð* and *ð′*. In particular, I think that the large number of Indo-European plosives is the result of a secondary development. The simplest assumption is that the Indo-Uralic proto-language was identical with Proto-Uralic. Indeed, it seems possible to derive Nivkh (Gilyak) from the same proto-language, as I have indicated elsewhere (2004a).

Uhlenbeck has argued (1935a) that Proto-Indo-European consisted of two unrelated components, which he calls *A* and *B*. The first component comprises pronouns, verbal roots, and derivational suffixes, whereas the second contains isolated words which are not related to verbal roots, such as numerals, some kinship terms, and many names of body parts, animals and trees. Uhlenbeck compares *A* with Uralic and Altaic and attributes irregular features such as heteroclitic inflection and grammatical gender to *B*. The Indo-European verbal system appears to combine Uralic flexional morphemes with Caucasian syntactic patterns. The rise of the ergative construction (which gave rise to the paradigm of the nominal *o*-stems, cf. Beekes 1985), grammatical gender and adjectival agreement can be attributed to North Caucasian influence and may have proceeded as indicated by Pedersen (1907). These views can be unified with Gimbutas' theory (e.g. 1985) that the Indo-Europeans moved from a primary homeland north of the Caspian Sea to a secondary homeland north of the Black Sea. What we have to take into account is the typological similarity of Proto-Indo-European to the North-West Caucasian languages. If this similarity can be attributed to areal factors (cf. Kortlandt 1995: 94), we may think of Indo-European as a branch of Indo-Uralic which was transformed under the influence of a North Caucasian substratum. We may then locate the Indo-Uralic homeland south of the Ural Mountains in the seventh millennium BC (cf. Mallory 1989: 192f.).

Having established the probability of an Indo-Uralic proto-language, we can now turn to the question if the reconstructed morphemes can be identified in other languages as well. This is indeed plausible for Eskimo (cf. Uhlenbeck 1935b, Fortescue

1998, Seefloth 2000) and Nivkh. It may therefore be appropriate to look for the same elements in the Altaic languages. Here I shall first list those items adduced by Greenberg (2000) as grammatical evidence for Eurasiatic which I reconstruct for Proto-Indo-Uralic:

first person *m,
second person *t,
demonstrative *i/e,
demonstrative *t,
demonstrative *s,
dual *ki,
plural *t,
plural *i,
accusative *m,
genitive *n,
dative *ka,
locative *ru,
locative *n,
locative *i,
ablative *t,
diminutive *k,
nominalizer *i,
nominalizer *m,
participle *n,
participle *t,
participle *nt,
participle *l,
verbal noun *s,
conative *sk,
reflexive *u/w,
negative *n,
interrogative *k.

I have identified 12 of these 27 elements in Nivkh (2004a), viz. first person *m, second person *t, demonstrative *i/e, demonstrative *t, demonstrative *s, dual *ki, plural *t, genitive *n, participle *nt, participle *l, verbal noun *s, reflexive *u/w. Moreover, I have suggested that we can add adessive *pi here on the basis of Indo-European *bʰi 'near', Nivkh *fid' 'be in a place', pʰiŋ 'inhabitant'.

For the 1st and 2nd person pronouns I reconstruct the following Indo-Uralic paradigms:

	'I/me'	'myself'	'we/us'	'thou/thee'	'yourself'	'ye/you'
nom.	*mi	*mu	*me	*ti	*tu	*te
gen.	*min	*mun	*men	*tin	*tun	*ten

In Indo-European, the assibilation of *ti to *si and the rise of ablaut which reduced all non-final vowels to *e under the stress and zero grade elsewhere resulted in the following outcome:

	'I/me'	'myself'	'we/us'
independent	*mi, *me-, *m-	*mu, *me-, *m-	*me, *me-, *m-
dependent	*men, *mn-	*men, *mn-	*men, *mn-

	'thou/thee'	'yourself'	'ye/you'
independent	*si, *se-, *s-	*tu, *te-, *t-	*te, *te-, *t-
dependent	*sen, *sn-	*ten, *tn-	*ten, *tn-

It is clear that this system could not be maintained. Moreover, the stem form *s- < *ti for the second person interfered with the Indo-Uralic demonstrative *s-, which is preserved in the Indo-European anaphoric pronoun *so. The large-scale homophony was eliminated by the use of deictic *ʔe 'this' for the first person singular and *ue 'self' for a person who is contrasted with another (third) person and by the suffixation of *-ʔ < *-ki for the dual and *-i, later *-s < *-ti for the plural. This resulted in such forms as *ʔme 'this-me', *tue 'thee-self', *sue 'him-self' (cf. Kortlandt 2002: 225 and 2005: 9), also *ueʔ, *uei '(our)selves' in contrast with outsiders (inclusive meaning) versus *(m)neʔ, *(m)nes 'we' in contrast with your people (exclusive meaning), *ueʔ, *ues 'you' in contrast with other people, then *uʔe 'you two' in contrast with them and *nʔue 'we two' in contrast with both you and them. These forms must have existed at an early stage already because the o-vocalism of *noʔ, *nos, *uoʔ, *uos originated in their use as clitics and we find the corresponding zero grade in acc.pl. *nsme, *usme, where *-me can hardly be anything else than the full grade Indo-Uralic case particle *me. On the other hand, the forms *teue and *seue show the continued existence of *te, *se, *ue as separate words at the stage when full grade *e in unstressed syllables became possible. It appears that gen. *men 'me' was remodeled to *mene on the basis of *teue and *seue. I think that dat. *migʰi represents original *mibʰi with dissimilation of the labial articulation because I cannot otherwise explain the differentiation from *tubʰi and *subʰi. These forms seem to preserve Indo-Uralic *mi 'I', *tu 'thou-self', and *pi 'at'. In Nivkh we find 1sg. *mi, 1du. *men-ki ('the two of us'), 1pl. *me-t, 2sg. *ti, 3sg. *i/e, *i-w, reflexive *pi-, reciprocal *u- (cf. Kortlandt 2004a).

We now turn to the Altaic languages. Starostin et al. reconstruct personal pronouns 1sg. *bi, 1pl. *ba ~ *bu, obl. *min-, *man- ~ *mun-, 2sg. *si, 2pl. *su, obl. *sin-, *sun-, adding Mongolian 2sg. či < *tʰi, 2pl. ta < *tʰa, which are "no doubt archaic" (2003: 225). These forms are strongly reminiscent of Indo-Uralic 1st person *mi, *me, *mu, gen. *min, *men, *mun, 2nd person *ti, *tu, gen. *tin, *tun, and 2sg. *ti, 2pl. *te, respectively. The alternation between *s- and *tʰ- in Altaic suggests that we must start from 2sg. *si < *tʰi and 2pl. *tʰa, with restoration of the plosive in Mongolian and generalization of the fricative in Tungusic; the form is limited to the singular in Turkic (where the plural is *sirʹ) and Japanese and unattested in Korean. The assibilation of *ti to *si is also found in the Indo-European branch of Indo-Uralic (cf. Kortlandt 2002: 221). In the 1st person form, Indo-Uralic *m- may have spread from the genitive if it was not the phonetic reflex of an original labial plosive, e.g. prenasalized *ᵐb or preglottalized *ˀb. Besides, Starostin et al. reconstruct 1st person *ŋa and 2nd person *na, which "may have originally been restricted to some oblique cases" (2003: 225), largely on the basis of the Korean and Japanese evidence. These forms may reflect *mn- and *tn- with syncope before a following suffix, as in the Indo-European forms reconstructed above.

If these considerations are correct, we arrive at the following reconstruction of the original personal pronouns in Indo-Uralic, Turkic, Mongolic, Tungusic, Koreanic and Japonic (cf. also Janhunen 2003: 18, Gorelova 2002: 216, Benzing 1955: 107, Robbeets 2005 s.v.):

PIU	PTk	PMo	PTg	PK	PJ
*mi	*bi-	*bi	*bi		
*min		*min-, *n-	*min	*n-	*a
*mu			*bu	*u-	
*mun			*mun		
*me		*ba	*ba		*ba
*men		*man-	*man		
*ti	*si-	*či	*si		*si
*tin		*čin-	*sin	*n-	*na
*tu			*su		
*tun			*sun		
*te		*ta			
*ten		*tan-			

From this table it appears that the Altaic personal pronouns can largely be derived from the ones reconstructed for Indo-Uralic except for the initial *b- in the first person forms.

Starostin et al. reconstruct demonstrative pronouns *s-, *ko, *la, *o 'this' and *čʰa, *e, *i, *tʰa (*tʰe) 'that'. It appears that Altaic *e, *i, *tʰa (*tʰe), *s-, *o may be identical with the Indo-Uralic demonstratives *i/e, *t-, *s-, and reflexive *u:

PIU	PTk	PMo	PTg	PK	PJ
*i		*i	*i	*i	*i
	*ın-	*in-	*in-		
*e		*e-	*e-	*a-	*a-
	*an-	*en-			
*t-	*ti-	*te-	*ta-	*tj-	*to-
		*ten-			
*s-	*-sı				*so-
*u/w	*o(l)	*on-	*u-		*o-

The Altaic interrogative pronoun *kʰa- 'who', PTk *ka-, *ke-, PMo *ka-, *ke-, PTg *xa-, PK *ka, PJ *ka, may be identical with the Indo-Uralic interrogative *k-.

The Altaic plural suffix *-tʰ- can be identified with the Indo-Uralic plural suffix *-t. The Altaic accusative suffix *-be may be identical with the Indo-Uralic accusative *-m if the latter is the phonetic reflex of an original labial plosive, as in the first person pronoun. The Altaic genitive has a velar, dental or palatal nasal, which points to *-n followed by other suffixes. This is supported by the fact that *-n- is also found as a dative, locative and instrumental case suffix. As in Indo-European (cf. Kortlandt 2002: 222), it appears that the genitive *-n developed into a general oblique singular ending in Altaic. Alternatively, it may have merged with the locative *-n which may be compared with the Altaic dative, locative and instrumental suffix *-n-. The locative *-ru can be identified with the Altaic directive suffix *-r-. Other case suffixes may be

compared with the dative *-ka* and the ablative *-t*. Starostin et al. reconstruct partitive *-ga*, dative or directive *-kʰ-*, and allative *-g-*, all of which may be related to the Indo-Uralic dative suffix *-ka*. Since the Indo-European evidence points to a number of different vowels after the velar consonant (cf. Kortlandt 2002: 224), it is quite possible that several cognates of the Altaic suffixes merged in Indo-European. Similarly, the Altaic dative or locative *-du*, *-da*, comitative or equative *-čʰa*, and instrumental or ablative *-ǰ-* (which function as an ablative in Turkic, Mongolian and Japanese, respectively) may all be related to the Indo-Uralic ablative suffix *-t*, which could be followed by other suffixes (cf. Kortlandt 2002: 222). Indeed, the distinction between Japanese genitive *no* and dative or locative *ni* and between Turkic dative *-ka* and Tungusic directive *-ki* suggests that the locative *-i* may have been added to other suffixes so as to provide a (stronger) locative meaning, in the same way as Indo-European replaced the original ablative ending by *-ti* in its local use in order to differentiate it from its instrumental use (cf. Kortlandt 2002: 222). This results in the following comparisons (cf. Starostin et al. 2003: 221, Erdal 2004: 168-179, Janhunen 2003: 14, Benzing 1955: 78-89, Robbeets 2005 s.v.):

PIU	PTk	PMo	PTg	PK	PJ
pl. *-t*	*-t*	*-d*	*-ta*, *-te*	*-tɪr*	*-tati*
acc. *-m*			*-ba*, *-be*		*-bo*
gen. *-n*	*-ŋ*	*-n*	*-ngī*	*-ń*	*-n*
dat. *-ka*	*-g*		*-ga*		*-nka*
	-ka		*-kī*		
	-ga	*-ga*	*-gī*		
loc. *-ru*	*-ru*	*-ru*		*-ro*	
loc. *-n*	*-n*				
loc. *-i*					*-ni*
abl. *-t*	*-da*	*-dur*	*-du*		*-tu*
	-ča	*-ča*			*-to*
			-ǰi		*-du*

Here the large variety of case endings in the Altaic languages cannot simply be derived from the ones reconstructed for Indo-Uralic, which may perhaps reflect a reduction of the Altaic system. Though some of the comparisons may have to be abandoned (cf. especially Robbeets 2005: 170-173 on PJ *-tati*, *-to*, *-tu*, *-du*), the considerable agreement between form and meaning of the suffixes suggests a common origin of plural *-t-*, accusative *-m/b-*, genitive *-n*, dative *-ka*, *-ga*, and local cases *-ru*, *-n-*, *-i*, *-t-*, *-du*.

If the equations adduced above are correct, they render a genetic relationship between Indo-Uralic and the separate Altaic languages probable. Since Proto-Indo-Uralic seems to be both phonologically and morphologically simpler than what we find in the Altaic languages, Indo-Uralic may have been either a sister or a daughter of an Altaic proto-language. In order to establish a possible chronology we now turn to the verb in the Altaic languages. As was indicated above, I reconstruct Proto-Indo-Uralic nominalizers *i* and *m*, participles *n*, *t*, *nt*, *l*, verbal noun *s*, and conative *sk*. The following deverbal nominals appear to have correspondences in the Altaic languages (cf. Starostin et al. 2003: 177, 187, 227):

PIU	PTk	PMo	PTg	PK	PJ
*-i	*-ja	*-ja		*-ja	*-i
*-m	*-m	*-m		*-m	
*-t	*-t-			*-t-	*-t-
*-l	*-l	*-l	*-l		

Besides, I have suggested (2008a in fine) that the Indo-European present stem formatives *-(e)i-, *-(e)m-, *-(e)s-, *-n-, *-t/dʰ-, *-sk- represent original roots of simple verbs meaning 'to go', 'to take', 'to be', 'to lead', 'to put', 'to try', cf. Latin i-, em-, es-, Sanskrit nī-, dhā-, Tocharian A ske-, B skai-, and may be compared with Uralic inchoative *-j-, fientive *-m-, *-n-, causative and momentaneous *-t- (cf. Collinder 1960: 272-281). The suffix *-(e)s- is strongly reminiscent of the Altaic desiderative/inchoative *-s- (cf. Starostin et al. 2003: 206f. and Kortlandt 2008b) while the Indo-European root *es- may be identical with Altaic *a- (Robbeets 2005: 380, 468) and *er- 'to be' (Starostin et al. 2003: 515), PTk *er-, PMo *a-, *ere-, PTg *eri-, PK *a-, PJ *a-, *ar- (cf. Kortlandt 1997). I am inclined to identify the Altaic negative verb *e-, PTg *e-, PMo ese 'not' (Starostin et al. 2003: 488) with the Uralic negative verb *e- (cf. Collinder 1960: 247) and the Indo-European root *es-, with loss of the original negative particle *ne in the Altaic languages (as in modern French, e.g. c'est pas vrai).

Robbeets has recently (2007) argued that the relative order of verbal stem formatives in Japanese overlaps with the distributional characteristics of related suffixes in other Altaic languages. Her conclusions are summarized in the following table:

	PTk	PMo	PTg	PK	PJ
effort	*-la-	*-la-	*-lā-		*-ra-
transform	*-d-	*-d-	*-dā-		*-da-
process	*-n-	*-n-	*-na-	*-no-	*-na-
iconic	*-ki-	*-ki-	*-ki-	*-ki-	*-ka-
intention		*-ma-	*-m-	*-m-	*-ma-
inchoative	*-k-	*-gi-	*-ga-	*-k-	*-ka-

The shape of attested chains of suffixes generally follows the order which can be reconstructed as *-la-da-na-ki-ma-ga-. If this is correct, it provides strong evidence for an Altaic proto-language which differed from Indo-Uralic. While the suffix *-la- can be compared with Uralic iterative *-l- (cf. Collinder 1960: 275f.), the other suffixes appear to be limited to the Altaic languages.

After this discussion of the morphological evidence, we may return to the problem of the lexicon. Arguing against a genetic relationship between the Mongolic and Tungusic languages, Doerfer has presented a detailed analysis of their common vocabulary (1985). Elsewhere I have shown that his material allows of a quite different conclusion (1998). Doerfer's classification of the Tungusic languages into dialectal areas from west to east differs sharply from the genetic classification of the Tungusic languages. As a result, his Central Tungusic is much more heterogeneous than the other groups. For Central Tungusic, Doerfer removes the words which are found in both North and South Tungusic from the material and lists those words which are found in either North or South Tungusic only. The high number of ancient words in this part of the material casts grave doubts on Doerfer's thesis that all of them were

borrowed from Eastern Evenki, Solon or Manchu at a recent stage. It seems to me that the semantic distribution of the ancient Central Tungusic words with cognates in either North or South Tungusic points to genetic relationship rather than borrowing. In particular, the relatively large number of verbs is difficult to explain under the assumption of borrowing.

In her *magnum opus* (2005), Robbeets eliminates the large majority of etymologies which have been proposed for Japanese words because they may be suspect for a variety of reasons, reducing a corpus of 2055 lexical entries to 359 core etymologies representing 4 pronouns, 170 verbs, 46 adjectives or quality nouns, 83 basic nouns and 56 non-basic nouns. Here again, the large number of verbs requires an explanation if one does not accept her analysis as proof of a genetic relationship between Japanese and the other Altaic languages. It is quite possible, and even probable, that some of the remaining etymologies will have to be abandoned in the future, especially because their number seems to be at variance with the large time depth assumed for the Altaic proto-language. On the other hand, the huge number of etymologies which were rejected out of hand because they might be suspect for one reason or another may comprise many instances where judgment has been too rash. We can only hope that future research will bridge the gap between the historical data of the attested languages and their reconstructed origins. This can only be achieved by training a new generation of scholars with an interest in the chronological aspects of linguistic diversity.

References

Beekes, Robert S.P. 1985. *The origins of the Indo-European nominal inflection* (Innsbruck: IBS).

Benzing, Johannes. 1955. *Die tungusischen Sprachen: Versuch einer vergleichenden Grammatik* (Wiesbaden: Steiner).

Collinder, Björn. 1960. *Comparative grammar of the Uralic languages* (Stockholm: Almqvist & Wiksell).

Doerfer, Gerhard. 1985. *Mongolo-Tungusica* (Wiesbaden: Harrassowitz).

Dybo, Anna V., & George S. Starostin. 2008. In defense of the comparative method, or the end of the Vovin controversy. *Aspects of comparative linguistics* 3 (Moscow: Russian State University for the Humanities), 119-258.

Erdal, Marcel. 2004. *A grammar of Old Turkic* (Leiden: Brill).

Fortescue, Michael. 1998. *Language relations across Bering Strait: Reappraising the archaeological and linguistic evidence* (London: Cassell).

Gimbutas, Marija. 1985. Primary and secondary homeland of the Indo-Europeans. *Journal of Indo-European Studies* 11, 185-202.

Gorelova, Liliya M. 2002. *Manchu grammar* (Leiden: Brill).

Greenberg, Joseph H. 2000. *Indo-European and its closest relatives: The Eurasiatic language family, vol. 1: Grammar* (Stanford UP).

Helimski, Eugene. 1995. Proto-Uralic gradation: Continuation and traces. *Congressus Octavus Internationalis Fenno-Ugristarum I: Orationes plenariae et conspectus quinquennales* (Jyväskylä: Moderatores), 17-51. Reprinted in: E.A. Xelimskij. 2000. Proto-Uralic gradation: Continuation and traces. *Komparativistika, uralistika: Lekcii i stat'i* (Moskva: Jazyki russkoj kul'tury), 167-190.

Janhunen, Juha. 2003. *The Mongolic languages* (London: Routledge).

Kortlandt, Frederik. 1989. Eight Indo-Uralic verbs? *Münchener Studien zur Sprachwissenschaft* 50, 79-85.

Kortlandt, Frederik. 1995. General linguistics and Indo-European reconstruction. *Rask* 2, 91-109. Electronic edition: <www.kortlandt.nl/publications/art130e.pdf>.

Kortlandt, Frederik. 1997. Japanese *aru, iru, oru* 'to be'. *Studia Etymologica Cracoviensia* 2, 167-170.

Kortlandt, Frederik. 1998. Are Mongolian and Tungus genetically related? *Acta Orientalia* [Academiae Scientiarum Hungaricae] 51, 235-237.

Kortlandt, Frederik. 2002. The Indo-Uralic verb. *Finno-Ugrians and Indo-Europeans: Linguistic and literary contacts* (Maastricht: Shaker), 217-227. Electronic edition: <www.kortlandt.nl/publications/art203e.pdf>.

Kortlandt, Frederik. 2004a. Nivkh as a Uralo-Siberian language. *Per aspera ad asteriscos* [=Fs. Rasmussen] (Innsbruck: IBS), 285-289.

Kortlandt, Frederik. 2004b. Indo-Uralic consonant gradation. *Etymologie, Entlehnungen und Entwicklungen* [=Fs. Koivulehto] (Helsinki: Société Néophilologique), 163-170.

Kortlandt, Frederik. 2005. Hittite *ammuk* 'me'. *Orpheus* 15, 7-10.

Kortlandt, Frederik. 2008a. Hittite *hi*-verbs and the Indo-European perfect. Electronic edition: <www.kortlandt.nl/publications/art241e.pdf>.

Kortlandt, Frederik. 2008b. The origin of the Indo-Iranian desiderative. *Indologica* [=Gs. Elizarenkova] (Moskva: RGGU), 227-230.

Lubotsky, Alexander M. 1988. *The system of nominal accentuation in Sanskrit and Proto-Indo-European* (Leiden: Brill).

Mallory, James P. 1989. *In search of the Indo-Europeans: Language, archaeology and myth* (London: Thames & Hudson).

Pedersen, Holger. 1907. Neues und nachträgliches. *Zeitschrift für vergleichende Sprachforschung* 40, 129-217.

Pokorny, Julius. 1959. *Indogermanisches etymologisches Wörterbuch* (Bern: Francke).

Rédei, Károly. 1986. *Zu den indogermanisch-uralischen Sprachkontakten* (Wien: Österreichische Akademie der Wissenschaften).

Robbeets, Martine I. 2005. *Is Japanese related to Korean, Tungusic, Mongolic and Turkic?* (Wiesbaden: Harrassowitz).

Robbeets, Martine I. 2007. How the actional suffix chain connects Japanese to Altaic. *Turkic languages* 11, 3-58.

Sammallahti, Pekka. 1988. Historical phonology of the Uralic languages. *The Uralic languages: Description, history and foreign influences* (Leiden: Brill), 478-554.

Seefloth, Uwe. 2000. Die Entstehung polypersonaler Paradigmen im Uralo-Siberischen. *Zentralasiatische Studien* 30, 163-191.

Starostin, Sergei, Anna Dybo & Oleg Mudrak. 2003. *Etymological dictionary of the Altaic languages* (Leiden: Brill).

Uhlenbeck, C.C. 1935a. Oer-Indogermaansch en Oer-Indogermanen. *Mededeelingen der Koninklijke Akademie van Wetenschappen, Afdeeling Letterkunde* 77-79, serie A, 125-148.

Uhlenbeck, C.C. 1935b. Eskimo en Oer-Indogermaansch. *Mededeelingen der Koninklijke Akademie van Wetenschappen, Afdeeling Letterkunde* 77-79, serie A, 179-196.

Vovin, Alexander. 2005. The end of the Altaic controversy. *Central Asiatic Journal* 49/1, 71-132.