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Working and eating together Commensality in the life of Bronze Age peoples in contacts in the post-Seima-Turbino transcultural complex

by Yoko Yamazaki

Abstract: A Proto-Baltic word *talkā or Proto-Balto-Slavic *tolkā ‘a community of workers that was treated with a feast after work’ is assumed to have been borrowed into Finnic, as seen in Finnish *talkoo* ‘id.’, Livonian *talk* ‘holding a feast for workers,’ etc. They may provide valuable information about the speakers’ lives in the language/cultural contacts. First, there are more loanwords (or Wanderwörter) between the two language families in the labor- and food-related semantic fields. Second, there are both archaeological and archaeogenomic findings that point to their contacts and admixture through the Seima-Turbino transcultural complex (ca. 2200 BCE). In this paper, the etymology and chronology of Proto-Baltic *talkā/Proto-Balto-Slavic *tolkā will be examined in food- and labor-related contexts. It will be argued that the word was borrowed at the late West Uralic stage, and it reflects the role that commensality played in their lives in the language/cultural contacts.

Keywords: Indo-European, Baltic, Uralic, Finnic, Saamic, language contact, historical morphology, historical phonology, commensality.

1 Introduction

There is a long history of research on Indo-European loanwords in the Uralic languages and, to a lesser extent, Uralic loanwords in the Indo-European languages (e.g., Thomsen 1890; Suhonen 1988; Kallio 2008; Holopainen 2019). Loanwords generally indicate historical language contacts, meaning interactions of the speakers of the relevant languages. This interaction can take various forms from the exchange of information and technologies, to political interactions and intermarriage between the speech communities. The semantic fields of loanwords may provide evidence for the forms of interactions in particular cases, especially when combined with historical

knowledge and data from various archaeological subfields, to which aDNA analysis (archaeogenomics) can be added. This study attempts to reconstruct some cultural aspects of the life in contacts by putting together the linguistic analysis on a Baltic word *talkā (< PBSlav *tolkā) ‘a community of workers that was treated with a feast after work’ borrowed into Finnic and Saamic, recent findings in population genetics of ancient peoples in the relevant area and time, and anthropological aspects.

It will be argued that PBalt *talkā developed from the verbal root *telk- ‘to crush’ in the context of agricultural labor, and was borrowed into the late West Uralic¹ dialect continuum through the language and cultural contact. The borrowing probably took place at the end of Bronze Age as a result of the long-lasting Uralic–Indo-European contact. The contact was originally brought by the Seima-Turbino phenomenon, which had its origin in metallurgy trading and metal workers’ network. Through the analysis on the background of this loanword, it will be investigated what the borrowing of this word would imply about the activities and social integration of the peoples in contact in terms of labor and commensality.

2 The Balt(o-Slav)ic loanword PBSlav *tolkā/PBalt *talkā

The tradition of holding a gathering after work/labor (PBSlav *tolkā) is apparently a long-standing tradition which is still practiced, being referred to with reflexes of PBSlav *tolkā in some present-day Baltic and Slavic speaking areas.² In these regions, colleagues and peers exchange novel techniques

¹ The terminology “West Uralic” is used in different ways by different authors. For instance, Häkkinen (2009) argues for a West Uralic dialect from which Finnic, Saamic and Mordvinic later developed, while Parpola (2017: 150ff.) considers it to be a protolanguage synonymous with “Proto-Saami-Finnic”. Kuokkala & Holopainen (2024) examine the data supporting this idea and concludes that West Uralic should be “a network of diversifying early Uralic languages/dialects, where innovations could spread across dialect borders.” In this paper, West Uralic is regarded as a dialect continuum as concluded in Kuokkala & Holopainen (2024), however, without excluding the possibility that it could have developed out of a common ancestor “Proto-West-Uralic”.

² Dr. Kateryna Bondar kindly drew my attention to the Ukrainian custom of holding *toloka*, which is still practiced today – during *toloka*, workers share new knowledge/techniques used in their work, often over food and refreshments. In the

(or tips on some craft-work) and socialize, often accompanied by food and drink. Baltic *talkā is also known to have been borrowed into the Finnic and Saamic languages. In this section, the chronology of the borrowing and the etymology of Baltic *talkā are discussed in depth from a linguistic point of view.

2.1 Chronology of the borrowing

It has been known since Thomsen (1890: 226) that Baltic *talkā ‘a community of workers that was treated with a feast after work’ was borrowed into Finnic, as attested by Finnish *talko*, pl. *talkoot* ‘id.’, Est *talgud*, Livvi Karelian *talloh* (pl. *talkohot*), Tver Karelian *talkohuš* ‘holding a feast for workers’, Votic *talko* ‘id.’, etc. Kuokkala (2018: 31) assumes that the Baltic word was borrowed into Proto-Saamic as *tuolkō ‘bribe’ (> Ume Saa *duol’goo*, NSaa *duolgu*, Lule Saa *Duolgo*). The alleged semantic development from ‘hold a feast for workers’ to ‘bribe’ can be supported by the following two facts. First, the word is listed with the meanings ‘munus sive donum aliquem corrumpendis gratia oblatum [(Lat) a service or gift offered with the purpose of corrupting someone]’ and ‘mutor [(Swe) bribes]’³ in the dictionary edited by Lindahl & Öhring (1780: 505) with two idiomatic phrases, *tuolgoit waddet* ‘to give bribes’ and *tuolgoit waldet* ‘to take bribes’. These glosses indicate that in Saami, a bribe did not have to be money but could also be goods (at least in 1780 when the dictionary was published). Second, an analogous semantic shift from goods, especially food items, to ‘bribe’ is also observed in Latv *kukulis* ‘a loaf of bread’ → ‘gift, bribe’ (cf. ME II, 302). It can therefore easily be speculated that a feast/meal could function as a certain type of bribe, for instance, as a means to convince workers to perform certain labor. Especially in cases where a feast was held for guest workers with social prestige, it would be prone to this sort of semantic shift. The question is whether this word was borrowed into Proto-Saamic through Proto-Finnic or to the common unity of Proto-Finno-Saamic.

The historical phonology of the Saamic words offers a few clues. PBalt *talkā would not directly give rise to Proto-Saamic *tuolkō because the

Baltic states, the habit of *talka* is also still practiced. It is thus observed that the tradition has survived and persisted with this terminology in some Baltic, Slavic, and Finnic speaking areas.

³ Translations are by the current author.

rounding of the final vowel is not expected to occur in this environment; instead, †tuolkē would be expected.⁴ The root vowel *-a/o- underwent the Great Saami Vowel Shift,⁵ giving rise to *-uo-. Note, however, that *-o- gave rise to *-oa- in old *a-stems (it gave rise to *-uo- in old *i-stems; cf. Zhivlov 2023: 128). This rules out PBSlav *tolkā (→ PSaa †toalkā) as the source of the loanword, and therefore PBalt *talkā is the most probable source of PSaa *tuolkō. Next, the rounding of the final vowel *-ā (> or → PSaa *-ō) can be accounted for by assuming the existence of one of the suffixes *-j and *-w, which had the effect of labializing their preceding vowels (cf. Holopainen 2019: 252).⁶ Thus, *talkā after adoption at the pre-Proto-Saamic stage would have gone through the following historical changes: Pre-PSaa/late WU *talkā + *-j/*-w > PSaa *tuolkōj/*tuolkōw.⁷ The Saamic forms therefore indicate that PBalt *talkā must have been borrowed and

⁴ In order to resolve this problem, SKES (1211) and SSA (III: 238) propose that the Baltic source is a plural form, i.e., nom.pl. *talkōs. However, the plural nominative ending of feminine *ā*-stem in Proto-Baltic is thought to have been *-ās, developed from PIE *-eh₂-(e)s. Therefore, the labialization of the final vowel *-ā(-) in PSaa *tuolkō still needs to be addressed.

⁵ See Toivonen & Nelson (2007: 27) for the overview of the Great Saami Vowel Shift.

⁶ As addressed in Holopainen (id.), the primary function of the suffixes is unclear. They appear in some kinship terms, e.g., PU *kāliw ‘spouse’s sister’ (Salminen 2012: 344), PU *nataw ‘husband’s sister’ (Salminen 2012: 341), or other sort of words, e.g., PU *čēlkaw/*čēlkaj ‘pole, rod’ (← (?) Core-PIE *g^holgh^o/*g^holgh^o-eh₂, cf. UEW 460ff.; Holopainen 2019: 250; Aikio 2020: 122). At least a relevant suffix *-oi is treated as a diminutive suffix in Nieminen (1934: 20). Also, note that the suffixation for this word is presumed only for Saamic (i.e., the suffixed form is not preserved in Finnic).

⁷ There might seem to be another way to account for the rounding of the final vowel, i.e., to assume a Finnic mediation. In Balto-Finnic, the *a*- and *o*-stems are indistinguishable in plural oblique cases, and the word is usually used in the plural (Finnish *talkoot*, Votic *talgod*) in Finnic. Such frequent plural use motivated PF *heimo ‘tribe, relative’ (borrowed from PBalt *šeimā) to analogically shift from the *a*- to *o*-stem, as proposed by Nieminen (1934: 19). This approach is employed to account for the *o*-stem *ativo* ‘visiting relative’ beside the *a*-stem *atima* by Jakob (2024: 81). A similar approach might seem valid for the analogical shift from the *a*- to *o*-stem for the *o*-stem PSaa *tuolkō. However, there might be a chronological difficulty. The coincidence of the two stems in the plural oblique was a Balto-Finnic development, and it would be too late for (PF *talkōt →) Pre-PSaa *talkō to undergo Great Saami Vowel Shift, giving rise to PSaa *tuolkō.

suffixed with *-j/*-w prior to the Great Saami Vowel Shift, which took place in the Proto-Saamic period. The fact that the same word was also borrowed into Proto-Finnic either supports a parallel borrowing into these two proto-languages or a borrowing into the Finno-Saamic dialect continuum (or late West Uralic). The suffixation process and the presence of the Great Saami Vowel Shift in the Saamic forms appear to better support the latter possibility.

2.2 The PBSlav *tolkā/PBalt *talkā word family, their etymology and derivational prehistory

The reconstruction of PBSlav *tolkā/PBalt *talkā is supported by associated word forms widely attested across the Baltic and Slavic languages (cf. Trautmann 1923: 322; Brückner 1927: 571ff., ME III, 127; LEW 1053; Vasmer 1953–1958: III, 116; ALEW 1235, Snoj 2016). They can be sorted into nominal and verbal forms. The nominal data in Baltic include:

- Lith *talkà* (AP4) ‘collective labor of the whole or a part of the village; a feast for helpers’
- Latv *tālka* ‘evening feast for workers assigned to heavy field work; field work to which volunteering workers are assigned from the neighborhood for a wage and feast’; *tālks* ‘a crowd of workers of both genders together that one efficiently hosts for a given task’
- OPr *tallokinikis* (voc.sg.) ‘a free man (< *those who perform unforced labor, i.e., *talka*)’

OPr *tallokinikis* is assumed to be corrected to *talkinīk’s by Mažiulis (1988–1997: IV, 182). Mažiulis (id.) further analyzes it as a derivative of *talkā with a suffix *-inīk- (i.e., *talk-inīk-as). Although his analysis leaves phonological problems with the geminate *-ll-* and the vowel *-o-* in the second syllable, it seems to be supported by the semantics, as the suffix *-inīk- is well attested with the meaning of a constant doer or an occupation also in Lith *-ininka-* or *-inyka-*, e.g. *daininiņkas* ‘singer’ (to *dainuoti* ‘to sing’; cf. Skardžius 1941: 140). For accentuation, Lithuanian AP4 (non-acute root, oxyton) and the Latvian falling tone on the first syllable of *tālka* and *tālks* agree on the original non-acute root and oxytone (the barytone/oxytone feature is underspecified in the Latvian forms). These forms allow a

reconstruction of Proto-Baltic **talkā* ‘a community of workers that was treated with a feast after work; or the feast itself’ with a non-acute root and oxytone accentuation.

Slavic nominal data include the following ones: Bulg *tlāka* ‘serfdom; a voluntary labor for mutual benefit’; Slov *tlāka* ‘serfdom; heavy labor’; OPol *tlōka* ‘serfdom; agricultural communal labor’; translated by Latin *palilia* ‘fun, pastoral feasts’ in the 15th c. (cf. Brückner 1927: 572); Ru *toloká*, Ukr *toloká* ‘communal labor for construction work’.

These forms allow the reconstruction of PSlav **tolkā*, acc.sg. **tōlkō* (APc) ‘a communal labor; workers’, a nominal derivative of the root **telk-* ‘to beat, crush (grains)’. The APc accentuation (cf. Dybo 1981: 24) confirms the oxytone feature of PBalt **talkā*. It should be noted that the meaning of the word in Slavic is more focused on the labor itself than the feast after work/labor. Based on the PBalt **talkā* and PSlav **tolkā*, PBSlav **tolkā* can be confidently reconstructed with the meaning ‘community labor; a community of workers that was treated with a feast after work’, or ‘the feast itself’. In addition, there are Ru *tolokno* ‘crushed oatmeal’ and Belarus. *tolokno* ‘a dish prepared from oatmeal in cold water’, which were borrowed into Lithuanian as *talaknà* (4) ‘bad porridge, thin puree’, and derive from PSlav **tolk-ъno-* ‘crushed oatmeal; oatmeal porridge’. It should be noted that there are also Celtic forms that may belong here. Old Welsh *talch* (m.) ‘bran’ and Welsh *talch* (m.) ‘ground grain, oatmeal’ are assumed by Pokorny (IEW 1062) to be related to the verbal root **telk-* ‘to crush’, and the Proto-Celtic **talko-* (< PIE **tḷk-sko-*) is reconstructed for them by Matasović (2009: 367). Since the stem formation in **-sko-* is not shared by PBSlav **tolkā*, PCelt **talko-* cannot be directly equated with the Proto-Balto-Slavic forms. However, it is potentially important that a derivative with grain-associated meaning based on the root **telk-* is also attested outside of Balto-Slavic. The root **telk-* therefore may have been used in grain-associated contexts already during the late PIE period.

Turning to the verbal data, Baltic offers Lith *talkti* and *telkti*, both meaning ‘to invite to a *talkā*’ (cf. LKŽ). It has been suggested that **talkā-* could be an *o*-grade derivative of the verb *telkti* ‘to marshal people to work together’ (e.g., Smoczyński 2016: 1348). However, the semantics seems to suggest that they are likely to be denominative verbs, considering the

original meaning of the verbal root *telk- ‘to beat, crush (grains)’.⁸ Slavic provides Old Church Slavonic *tlbkŕ* (to inf. *tlěšti) ‘to beat, strike’, Ru *tolóč* ‘to crush’, Slov *tólči* ‘to strike, beat’, (< PSlav *telt’i, *tĕlkŕ; cf. Vasmer 1953: III, 116, Snoj 2016), preserving the meaning of the IE verbal root *telk- ‘to beat, crush’ (cf. LIV² 623).

In conclusion, the IE verbal root *telk- ‘to beat, crush’, which was possibly used in the context of crushing grains, seems to be the most plausible basis of all the nominal derivatives. Yet the meaning ‘a community of workers’ and ‘feast (for workers)’ for PBSlav *tolkā (< PIE *tolk-éh₂-) requires multiple semantic shifts from the meaning of *telk-, i.e., ‘to beat, crush’. Our investigation can start with the oxytone accentuation of PBSlav *tolkā (< PIE *tolk-éh₂-), which morphologically and phonologically fits a collective formation of a *tolk-ó-, whose meaning is to be investigated below. It will be followed by a further investigation in the derivational process and semantic developments of PIE *tolk-éh₂- from *tolk-ó-.

The morphology of *tolk-ó- might remind many Indo-Europeanists of the *τομός*-formation, and this line of approach will be pursued in what follows. The semantics of the *τομός*-formation (R(o)-ó-type) with the oxytone accentuation ranges from the passive, agentive to the resultative, while the barytone *τόμος*-formation (R(ó)-o-type) is a formation for action nouns (i.e., *nomina actionis*; Hajnal 1994: 198ff.; 206ff., Nussbaum 2017: 233). Nussbaum’s (2017) investigation suggests that the various meanings of the *τομός*-formation could reflect its origin being the possessive derivation of the barytone R(ó)-o-type *nomina actionis*, because the possessives of *nomina actionis* often develop agentive and/or patientive/resultative meanings (with examples and references in id.: 240). Accordingly, Nussbaum (240ff.) proposes that certain *τομός*-formations likely originated from the possessive derivatives of *τόμος*-action nouns (e.g., PGmc. *halba- (Go. *halbs*, etc.) ‘half (< *divided)’ < *kolpó- : Ved *kálpa*- ‘arrangement’ < *kólpo-; Ved *vāká*- ‘speech’ [< *wok^w-ó- ‘what is spoken’]).

The *τομός*-formation, which developed both agentive and resultative meanings, is compatible with the polysemy of *tolkā. I propose that oxytone PBSlav *tolk-ó- can also belong to these *τομός*/R(o)-ó- possessives of the *τόμος*-formation that developed both an agentive meaning ‘a worker threshing grains’, and a resultative one ‘(what is) crushed’. The latter could further

⁸ For the semantic shifts that took place in relevant nominal formations, see below.

give rise to a substantivized meaning ‘crushed grain’, given that the verbal root *telk- could have been used in agricultural contexts. From the agentive meaning, ‘a worker threshing grains’, a collective ‘a community of workers’ could develop. Likewise, from the substantivized ‘crushed grain’, a collective meaning ‘meal, food’ could easily be derived, which could further develop into the meaning ‘a feast/meal served after labor for workers’ in a proper agricultural/labor context. It is intriguing that Slavic appeared to have preferred the agentive meaning ‘worker’ in addition to ‘community labor’ for *tolk-ó-, while Baltic apparently had a preference for the substantivized resultative meaning ‘food, feast’.

The entire derivational history and semantic shifts of the word family can be traced down from PIE to Slavic and Baltic as described in the table below.

late PIE verbal root *telk- ‘to crush, beat’ (LIV ² 623)	
⇓	
Nominal formation	
agentive: *tolk-ó- ‘a worker crushing grains’	
(passive) resultative: *tolk-ó- ‘something crushed’ → ‘crushed grain’ → ‘food from grain’ ⁹	
[cf. R(o)-ó-type formation, cf. Nussbaum 2017]	
⇓	
Collective *tolk-éh ₂ - > PBSlav *tolkā (oxytone)	
collective of agentive *tolk-ó-: ‘a community of workers’	
collective of (passive) resultative *tolk-ó-: ‘meal; feast (for workers)’	
⇓	⇓
PSlav *tolká (AP c)	PBalt *talkā (oxytone, non-acute root)
‘a community of workers/labor’	‘a community of workers/feast for workers’

Admittedly, the intermediate form (*tolk-ó-) is not attested. However, the derivational history envisaged above reasonably explains the morphological

⁹ The ‘food from grain’ could be something like barley mixed with drinks (e.g., ‘soma’, butter or sweet wine) or cakes made of grain attested in the contexts of sacrifice, rations for travelers or laborers, and as food for animals in *Rig Veda* and Homer as discussed by Sturm (2025). It would therefore be conceivable that such food was common in various commensal situations, including a feast meant by PBSlav *tolkā.

background of the oxytone accentuation of the word and how both of the meanings ‘a community of workers’ and ‘feast (for workers)’ developed from ‘to crush, beat’.

2.3 Agriculture connection

The etymological approach presented above suggests that the base form of PBSlav **tolkā*/PBalt **talkā*, i.e., **tolk-ó-*, involved a semantic specialization from ‘something crushed’ to ‘crushed grain’. This semantic specialization strongly suggests that the word **tolk-ó-* (or possibly even the verbal root **telk-*) was used in an agricultural context. This is compatible with the common assumption that Core-Indo-Europeans were at least familiar with agriculture and likely practiced it alongside pastoralism, as indicated by the agricultural terminology reconstructible across the Core-Indo-European branches, including Proto-Balto-Slavic. Kroonen et al. (2022) investigated the Indo-European cognates of cereal terminology and suggested that the cattle-breeding Indo-Europeans interacted with contemporaneous farmers in the Northwest Pontic Region, acquiring agriculture-associated concepts, which motivated the semantic shifts of some inherited vocabularies. It would be reasonable to assume that **tolk-ó-* ‘something crushed → crushed grain’ represents a marginal case of such a semantic shift that took place in Proto-Balto-Slavic somewhat later than the Core-Indo-European stage. This agricultural context is compatible with the meaning of PBSlav **tolkā*/PBalt **talkā*, i.e., ‘feast for workers’, because agriculture usually involves community labor, such as threshing grain (with flails or sledges). According to anthropological studies (e.g., Ofstehage 2020[2023]), this form of labor is generally dependent on social relationships.

We will envisage the context as to how this agriculture-associated word was borrowed into West Uralic languages, whose speakers had probably not been familiar with agriculture. In section 3, an overview of the contacts between the Uralic and Indo-European speakers will be presented.

3 Overview on the linguistic and cultural contacts between Indo-European and Uralic populations

3.1 Linguistic evidence for Baltic–Finno-Ugric contact

The earliest contact episode between Uralic and Indo-Europeans is provided by the presence of Indo-Iranian loanwords in Proto-Uralic.

(1) Uralic – Indo-Iranian contact (cf. Holopainen 2019)

- a. ‘price, value’: PIIr *arg^há- → PU *arwV ~ *jrwV ? > Finn *arvo* ‘value, price’, Hu *ár* ‘price’
- b. ‘wealth’: PIIr *ma(n)dza- (cf. OInd *maṃh*, Av *maz*) → WU *maksa- > Finn *maksa*- ‘to pay’
- c. ‘grain, barley, wheat’: Pre-PIIr *yewo- → Pre-Fi/PU *jewä > Finn *jyvä* ‘grain’
- d. ‘mead, honey wine’: Pre-PIIr/PIE *méd^hu- → PU *meti ‘honey, nectar’ > Finn *mesi* ‘nectar’, Mord. *med*’, Hu *méz* ‘honey’
- e. ‘100’: PIIr *cátá-m → PU *šjta > Finn *sata*, NSaa *čuhti*, etc. ‘100’

This contact episode is estimated to have taken place ca. 2000–1900 BCE, as investigated in Kallio (2006a: 12, 15–17) and supported by Holopainen (2019: 47, 89). This aligns with Anthony’s (2007: 374ff.) argument that the archaeological evidence combined with linguistic analysis indicates a connection between the Proto-Indo-Iranian speaking population and the Sintashta Culture in the Caspian Steppe, which is dated to 2100–1800 BCE.¹⁰ Slightly later traces of contact between the Indo-European and Uralic speakers can be found in the form of approximately 200 Baltic loanwords in the Finnic languages (2000–1000 BCE, cf. Kallio 2008), as well as Baltic loanwords in Saamic (9 cases, cf. Jakob 2024: 123ff.), and Baltic loanwords in Mordvinic (15 cases [of which 11 also occur in Finnish; Thomsen 1890: 154] or 7 to 10 cases, cf. Jakob 2024: 139). The fact that some Baltic loanwords in the Finnic languages are also attested in Saamic may suggest a West Uralic–Proto-Balto-Slavic contact episode, although opinions vary due

¹⁰ Correspondence between the details of funeral sacrifices and chariots found in Sintashta burials and the sacrificial rituals and mentions of charioteers in the *Rig Veda* provides a link between the Proto-Indo-Iranian speech community and the Sintashta Culture of the Caspian Steppe.

to the problematic nature of the data. The problematic nature has been described by Kallio (2009) and Aikio (2017: 73ff.). They show that, apart from the small number of alleged Baltic loanwords in Proto-Finno-Saamic, most could have been borrowed into Pre-Proto-Saamic through Pre-Proto-Finnic, and therefore were not necessarily already part of Proto-Finno-Saamic. Another problem is the reflexes of prevocalic PIE **ĥ*, whose phonological developments and adaptation in the recipient languages allow three different possible loanword chronologies: (i) PIE **ĥ* > PBSlav **ś* > **PBalt **š* → PFi-Saa **ś* > PSaa *s***; (ii) PIE **ĥ* > PBSlav **ś* > **PBalt **š* → Mid. PFi *š* → PSaa *s* > NSaa *s***; or (iii) PIE **ĥ* > **PBSlav **ś* → Mid. PFi *ś* → PSaa *s* > NSaa *s***; as exemplified by the loanword for ‘hay’ (2) below.

(2) Three possible chronologies for the loanword meaning ‘hay’ (cf. Kallio 2009: 34)

- a. ‘hay’: PIE **ĥoi-no-* > PBSlav **śaina-* > PBalt **šaina-* → PFi-Saa **śajna* > PSaa **suojnē* > NSaa *suoidmi*;
- b. PIE **ĥoi-no-* > PBSlav **śaina-* > PBalt **šaina-* → Mid. PFi **šajna* (> Finnish *heinä*, Tver Karelian *heinä*, Est *hein(-a-)*, etc.) → PSaa **suojnē* > NSaa *suoidmi*;
- c. PIE **ĥoi-no-* > PBSlav **śaina-* → Mid. PFi **śajna* (> Finn *hainä*, Tver Karelian *hainä*, Est *hein(-a-)*, etc.) → PSaa **suojnē* > NSaa *suoidmi*.

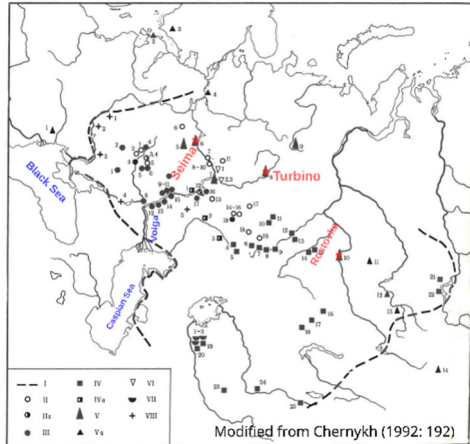
Thus, IE loanwords containing prevocalic PIE **ĥ* adopted as PSaa **s* may have been borrowed either at the Proto-Finno-Saamic stage or loaned from Middle Proto-Finnic (further from Proto-Balto-Slavic or Proto-Baltic), where PFin **š* and **ś* had not yet changed to **h*. Therefore, it is not entirely certain whether their presence establishes West Uralic–Balto-Slavic contact. The idea of the Finnic mediation for Baltic loanwords in Saamic is also supported by the geographic distribution of those proto-languages, whereby pre-Proto-Finnic seems to have been more proximate to Baltic than pre-Proto-Saamic. (cf. Aikio 2017: 74). Nonetheless, if the argument on the chronology of the Baltic loanword **talkā* presented in subsection 2.1 is tenable, **talkā* might support at least a late West Uralic – early Baltic contact.

In addition, 8 early Slavic loanwords in Finnic (Kallio 2006b), 500 Germanic loanwords in Finnic (Kallio 2017: 233), and 63 in Saamic (Aikio 2017: 73) are known. These linguistic contacts are assumed to have occurred

due to the Uralic expansion after approximately 2200 BCE, probably motivated by climate change (known as the 4.2 ka event), cf. Nichols (2019: 355ff.). We will see in the next subsection that these contact episodes can be neatly aligned with the archaeological and archaeogenomic evidence.

3.2 The Seima-Turbino trans-cultural network as the mediator of Uralic expansion

Around 2200 BCE, Northern Eurasia was shaped by the rapid growth of metallurgical/trading networks, along with waves of migrations, possibly triggered by rapid climate change. This dynamic change eventually brought about the Uralic–Indo-European contact. In the forest-steppe zone of the East European Plain, stretching from the southern Urals to the Altai in the east and to present-day Finland in the west, weapons (socketed spears, knives, etc.), bronze products (rings, bracelets, headdresses, etc.), tools (fish hooks, awls, socketed axes) and metallurgy-associated items (molds for casting metals) sharing the same traits have been found (cf. Chernykh 1992: 208). In addition to these metal goods, workshops have been excavated in places such as Mosolovka, where the copper from the eastern Ural region was found. These findings are assumed to indicate “metallurgical and trading networks”, where “the region is linked through comparable artifact types, (...) and by shared metallurgical technologies not easily transmitted without movement of craft workers or even groups of travelers” (Linduff 2016: 1607). It is likely that these craft workers transmitted their language(s) alongside the metallurgical techniques. The networks that emerged in the Eurasian Metallurgical Province are known as the Seima-Turbino transcultural networks, named after the earliest archaeological sites in Seima and Turbino.



The Seima-Turbino phenomenon is commonly estimated to have emerged in the Middle Bronze Age, ca. 2200 BCE, and continued until 1900 BCE (Childebayeva et al. 2024) or 1600 BCE (Chernykh 1992: 203). The alleged movements of new populations in Fennoscandia are supported by Siberian gene flow (Y-Haplogroup N; more specifically Yakutia ancestry, s. Zeng et al. 2025), detected after 3000 BCE and reaching the Baltic region in the Iron Age (500 BCE), as laid out by Mitnik et al. (2018) and Saag et al. (2019). The admixture of the steppe ancestry and Siberian gene flow in two of the Seima-Turbino sites (Rostovka and Bolshoy Oleni Ostrov; cf. Childebayeva et al. 2024) and the extreme diversity of the individuals from the associated necropoli in ancestries from Baltic to Baikal (cf. Zeng et al. 2025) further suggest that the craft workers/travelers were integrated into local communities, which can be associated to an Indo-European speaking population.

It is notable that the rapid expansion of the Uralic languages in Northern Eurasia is estimated to have started almost simultaneously with the emergence of the Seima-Turbino networks and Siberian gene flow in Fennoscandia around 2200 BCE (cf. Nichols 2021: 356ff, Grünthal et al. 2022: 495ff.). Linguistic support for this timeline comes from Indo-Iranian loanwords both in Finno-Ugric and, to a much lesser degree, Samoyedic, which appear to have been borrowed independently (cf. Holopainen 2019). Nichols (2021: 357) argues that the limited but independent Indo-Iranian loanwords in Samoyedic would indicate that the Uralic expansion had already started.

This chronological overlap is probably not a coincidence. In the west of the Ural mountains, the Seima-Turbino range also geographically overlaps with the secondary homelands of the Uralic languages and some parts of the Corded Ware horizons associated with Indo-Europeans, including the Fatyanovo, Abashevo, and Sintashta cultures (cf. Nichols 2021). Researchers (e.g., Kallio 2006a: 15ff.; Junttila 2017: 265; Nichols 2021) speculate that the expansions of the Seima-Turbino networks and the Uralic languages (and the Siberian gene flow) were related. Grünthal et al. (2022) argue that the metal workers were likely Uralic speakers who spread metal products and metallurgy technologies across northern Eurasia. This aligns with the aforementioned contact episodes between Uralic and Indo-European branches, which likely took place as the Proto-Uralic speaking population spread westward through the Seima-Turbino trading networks. The entire timeline is depicted in the figure below:

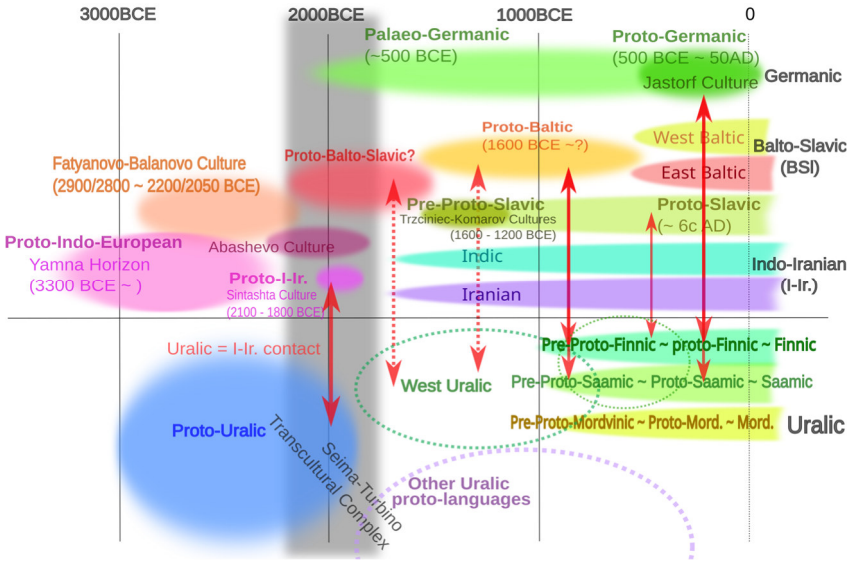


Figure 1: Indo-European and Uralic proto-languages with estimated connection to archaeological cultures¹¹

¹¹ First of all, Dr. Natalija Kashuba's contribution in preparation for this figure is thankfully acknowledged. This figure is compiled based on various sources listed below. For Proto-Uralic: 4000–2000 BCE (Nichols 2021) or 3000–2000 BCE (Kallio 2006b, Saariviki 2022);

split of Proto-Uralic: until 2000 BCE (Nichols 2021: 353);

West Uralic (Netted Ware Culture): 1800–700 BCE (Pärpola 2017: 142);

Proto-Finno-Saamic: 1 Mill. BCE (Aikio 2022: 4);

Proto-Indo-European (Yamna Culture): –3300 BCE;

Indo-Slavic (or Core-IE?; Fatyanovo-Balanovo range): 2900/2800–2200 BCE (Nordqvist & Heyd 2020, Grünthal et al. 2022: 502);

Proto-Indo-Iranian (Sintashta Culture): ca. 2100–1800 BCE (Anthony 2007: 375); pre-Proto-Slavic (Trzciniec-Komarov Culture): 1600–1200 BCE (Mallory & Adams 1997: 606);

Palaeo-Germanic: ? – 500 BCE (cf. Polome 1985, MacColl et al. 2024 [preprint]);

Proto-Germanic: 600/750 – 1 BCE (Mallory & Adams 1997: 223, 321).

For Proto-Balto-Slavic and Proto-Baltic, the absolute chronology is estimated based on the time periods of their predecessors and successors. Thus, assuming that the

The factors that played a key role when those newcomers became a part of the local societies are likely reflected in the list of Indo-European loanwords in the Uralic languages. In this respect, investigating the background of Balto-Slavic **tolkā*/Baltic **talkā* ‘a community of workers that was treated with a feast after work’ and food-related terminologies borrowed into Finnic and Saamic would provide us with a more vivid understanding of the nature of this cultural contact.

4 Implications of the loanword in the contact situation – What the Seima-Turbino transcultural network brought to Fennoscandia and Eastern Europe

In section 2, historical linguistic analyses were provided to address the issues surrounding PBalt **talkā*. This section will shift focus to the sociolinguistic situation in the post-Seima-Turbino Transcultural context by applying an anthropological perspective.

As concluded in subsection 2.1, PBalt **talkā* was borrowed into Finno-Saamic or late West Uralic. It clearly occurred after the Seima-Turbino phenomenon (ca. 2000 BCE), which is associated with the Uralic expansion (cf. Figure 1 above). Still, Seima-Turbino transcultural network can be seen as the remote and ultimate cause of the borrowing of the word, where it is likely that Uralic metallurgical craft workers not only transmitted metallurgical techniques but also their languages. Evidence for admixture of Steppe and Siberian ancestries addressed in Childebayeva (2024) and Zeng et al. (2025) suggests that the newcomers became integrated into the local society. The modern day genomic components of Estonians surveyed in Mitnik et al.

western parts of the Fatyanovo-Balanovo range may be associated with the predecessor of Proto-Balto-Slavic, its starting period should follow the end of the Fatyanovo-Balanovo Culture (2200/2050 BCE), while its ending period should not be considerably later than the beginning of Pre-Proto-Slavic, which is associated with the Trzciniec-Komarov Culture (1600–1200 BCE). Consequently, the beginning of Proto-Baltic should be around that time ca. 1600 BCE, and its end should be around the time it started to diversify into East and West Baltic, probably sometime during the 1st millennium BCE. However, a major challenge for identifying the Fatyanovo Culture as the homeland of Proto-Balto-Slavic speakers is the lack of factual evidence for agriculture in the area. The absolute chronology and the location of Proto-Balto-Slavic therefore remains unclear, and a possible timeline is presented in the chart.

(2018) show that this trend continued over millennia. The borrowing of *talkā must have occurred during their continuous contacts, in particular, during “working and eating together” in the post-Seima-Turbino epoch. This is also supported by several labor- (esp. animal husbandry) and food-related loanwords. In addition to PBalt *talkā, the following can be added: PBalt *šaina- ‘hay’ (Lith *šiēnas*, Latv *siens*) → WU *šajna (Fi *heinä*, NSaa *suoidmi*); PBalt *sēmen ‘seed’ (Lith *sėmuō*, OPr *seman*) → WU *sēmen (Fi *siemen*, NSaa *siepmān* ‘seed’); PB *širvas ‘roe-deer’ (OPr *sirwis*) → WU *širvas (Finn *hirvas* ‘deer, elk’, NSaa *sarvvis*, SSaa *sarva* ‘elk’); and possibly PBalt *penima- ‘to feed’ (Lith *penėti* ‘to feed, fatten’, *pėnimas* ‘fattened’) → WU *pām̃mi (NSaa *biebmat*), see Aikio (2017: 107, en. 4) for the critical evaluation of the loanword. The Indo-European word represented by Lith *vāškas*, OCS *voskъ* ‘wax’ and Proto-Germanic *wahsa- ‘beeswax’ (e.g., ON *vax*, OHG *wahs*) was borrowed either directly from an unknown third source¹² or through Uralic *wāškā ‘metal’, which is not an inherited word in Uralic either (cf. Aikio 2015: 42–43). The borrowing, however, likely occurred in the metallurgy context, i.e., lost-wax casting and hollow-mold casting, involving a semantic broadening to “metal casting” (cf. Hyllested 2023, Anthony 2007: 443ff.). Slightly later Baltic loanwords in these semantic fields are found in the Proto-Finnic stage: Lith *piemuō* (PBalt *paimen-) → Fi/Tver Karelian/Veps *paimen* ‘shepherd’; Lith *putrà*, Latv *putra* → Fi *puuro* (→ NSaa *buwro*) ‘porridge’; Lith *āvinas*, Latv *avenas* ‘mutton’, OPr *awins* ‘ram’ → Fi *oinas* ‘wether, ram’, Est *oinas* ‘ram’, Liv *oin/oen* ‘mutton’; Lith *žirnis*, OPr *syrne* → Fi *herne* Tver/Livvi Karelian/Veps *herneh* ‘pea’. ‘Salmon’ (Lith *lāšis/lāšiša*, Latv *lasis* → Fi/Tver/Livvi Karelian/Veps/Vot *lohi*) might also be an example if “salmon” was loaned in a food-associated context.

Within the Seima-Turbino metallurgy context, it would be more likely that the Uralic people (or Finno-Saamic people, who reached Fennoscandia) had higher social prestige than local Indo-European people. Lang (2018: 196ff., 308ff.) suggests that the arrival of the Uralic speakers in the Baltic region happened in at least two waves over the centuries. Moilanen, Salmela, and Honkola (2023: 319) argue that the first wave of Uralic newcomers was

¹² See Jakob (2024: 217f.) for the phonological difficulties with deriving the Balto-Slavic and Germanic words from a common Proto-Indo-European form through regular sound changes.

unlikely to be ore seekers and miners, since raw materials for bronze are unavailable in the Baltic region. They further elaborate that the first wave comprised skilled craftsmen and technological experts who were invited by the local elite. In turn, the local elite likely offered benefits in the form of food and desirable conditions as a reward for joining their communities. They find archaeological support for their proposal in the later incomers' smooth integration into the local society as new elite class, which is reflected in new grave forms with rich material culture (cf. Olli 2019: 60f.). This argument aligns with the current assumption that Uralic speaking guest experts had higher social prestige. In addition, the food benefits that Moilanen, Salmela, and Honkola (2023: 319) discuss are very much in line with the concept of PBalt *talkā, which was likely to have been held after the (metal) work. The usage of *talkā could have easily expanded from 'after agriculture work' to 'after metallurgy work' and even to 'after (any) community work'. This explains how *talkā borrowed into West Uralic has lost its particular tie to agricultural context.

It has long been understood that loanwords are borrowed not only due to social/linguistic prestige but also because of a practical need. Along with new items and concepts, new names/words are often borrowed (cf. Campbell 1999: 64). The borrowing of *talkā was likely due to the latter. The Proto-Uralic speaking population is known to have been hunter-gathers and fishers (cf. Grünthal, Heyd, et al. 2022: 492), and were therefore likely unfamiliar with agriculture and related concepts. On the other hand, Indo-Europeans from the Early Bronze Age and later likely became familiar with agriculture and related concepts like community labor and *talkā, through cultural and genetic interactions with European farming population(s). This must have motivated Finno-Saamic speakers to borrow *talkā from Balt(o-Slavic) speakers, which may suggest a process in which the Uralic newcomers became integrated into the local society.

5 Synthesis

By integrating archaeological and archaeogenomic contexts, this paper has examined the etymology of PBSlav *tolkā/PBalt *talkā and the chronology of its borrowing from Proto-Baltic to the Finno-Saamic dialect continuum (or West Uralic). The etymological analysis of the word indicates that the base verbal root *telk- could have become associated with agricultural activities in at least Proto-Balto-Slavic and possibly also independently in Proto-Celtic (cf. Old Welsh *talch* (m.) ‘bran’ and Welsh *talch* (m.) ‘ground grain, oatmeal’ above). It was further argued that the borrowing of this agriculture-associated word from Baltic into Proto-Finno-Saamic would be well in line with the archaeological/archaeogenomic context. The Baltic population would have been familiar with agriculture, while the Finno-Saamic (West Uralic) population is known to have been hunter-gatherers, hence unfamiliar with agriculture and related activities. In this synthesis section, I would like to explore its meaning and function in the life of (at least) the two different populations in contact, from an anthropological point of view, with a focus on “commensality”. This replaces the concluding remarks of this contribution.

The function of “eating together” in the process of building and maintaining a community has been addressed in the field of anthropology with the term “commensality”. Although his focus was on “eating together” on religious occasions during sacrificial rituals, the key role of “eating together” was aptly phrased by Smith (1927 [1889]: 265) as follows: “(...) those who eat and drink together are by this very act tied to one another by a bond of friendship and mutual obligation”. “Mutual obligation” could have been an important component in situations where technological experts from the Uralic population and Indo-European local elites exchanged metallurgical technology and food benefits, as envisaged by Moilanen, Salmela, and Honkola (2019: 319). According to Van Esterik (2015: 31ff.), commensality is a special kind of consumption, since food sharing is the commensal core of human society, which shapes the moral economy of communities (id.: 34). The existence of this nature of commensality is inferred to have been present even in Chalcolithic southern Levant, as investigated by Kerner (2015). Therefore, we can draw on their insights in the analyses of contemporary cultures in various parts of the world in order to understand the function and role that PBalt *talkā played in the contact situation.

Van Esterik (2015: 31ff.) further observes that commensality is a fairly effective way to understand relatedness among community members. The commensal relation created by food sharing involves intimacy, nurturance, and reciprocity. The intimacy of food sharing is well expressed by Jones (2007: 12), who points out that “meals, like sex and reproduction, resist attempts to distance the person and the organism”. These discussions on commensality, or “food sharing”, can help us understand how the feast held for workers after labor could foster the formation of bonds between the local Indo-European people and the West Uralic newcomers and the subsequent formation of their community. As mentioned above, the first wave of Uralic newcomers likely comprised a small number of invited skilled craftsmen and technological experts (cf. Moilanen, Salmela, & Honkola 2023: 319). As the subsequent waves of Uralic migration increased in size and a substantial language shift of Baltic speakers to West Uralic dialects started, it is likely that Baltic words started to be adopted into the Finno-Saamic lexicon as loan-words.

Needless to say, sharing food and working together are not the only aspects of the lives of peoples in contact. However, the cultural importance of commensality should not be overlooked, as suggested by Smith (1927 [1889]) and Kerner, Chou, and Warmind eds. (2015), among others. The linguistic, archaeological, and genetic evidence indicates long-standing Uralic–Indo-European contact. This paper focused on contact between the Baltic (possibly involving the late Balto-Slavic stage) and late West Uralic peoples in Northeast Europe in the Late Bronze Age, and investigated how they may have maintained their community through commensality. It was argued that this was likely a consequence of common labor, as suggested by the semantics of PBalt *talkā. My hope is that the discussion in this paper may provide valuable insight into the life of these different peoples, who came into contact a few thousand years ago.

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6 Abbreviations

Av	Avestan	PBalt	Proto-Baltic
Bulg	Bulgarian	PBSlav	Proto-Balto-Slavic
Est	Estonian	PES	Proto-East-Slavic
Finn	Finnish	PFi	Proto-Finnic
Gk	Greek	PFi-Saa	Proto-Finno-Saamic
Hitt	Hittite	PGmc	Proto-Germanic
Hu	Hungarian	PIIr	Proto-Indo-Iranian
Ir	Iranian	PIE	Proto-Indo-European
ISaa	Inari Saami	PIr	Proto-Iranian
Lat	Latin	PSlav	Proto-Slavic
Latv	Latvian	PSaa	Proto-Saamic
Lith	Lithuanian	PU	Proto-Uralic
Liv	Livonian	Ru	Russian
Mid	middle	Saa	Saamic
NSaa	North Saami	SSaa	South Saami
OCS	Old Church Slavic	Swe	Swedish
OHG	Old High German	Ukr	Ukrainian
ON	Old Norse	Ved	Vedic Sanskrit
OPol	Old Polish	Vot	Votic
OPr	Old Prussian	WU	West Uralic
OInd	Old Indic		

7 Bibliographic abbreviations

IEW = Pokorny, Julius (1959–1969).

LEW = Fraenkel, Ernst (1962–1965).

LIV² = Rix, Helmut & Martin Kümmel (2001).

LKŽ = *Lietuvių Kalbos Žodynas*. (www.lkz.lt).

ME = Milenbachs, Kārlis & Jānis Endzelīns. (1923–32).

SKES= Toivonen, Yrjö H., Erkki Itkonen & Aulis J. Joki (1955–1981).

SSA = Itkonen, Erkki, Ulla-Maija Kulonen et al. (1992–2001).

UEW = Rédei, Károly (1988).

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Addition to the paper:

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