



## Early Metal Age in the Middle Volga and the diversification of Uralic languages

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Riho Grünthal & Sampsa Holopainen

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### Abstract

The Middle Volga area is considered to be the spread area of both early Indo-European and Uralic speaking communities as well as the contact zone of cultural and linguistic influence from Indo-European varieties to diverging Proto-Uralic. Instead of constituting the oldest identifiable geographical core area of Proto-Uralic, recent studies maintain that the spread of Uralic languages from east to west began in western Siberia, took place during the Early Metal Age and covered parts of the Middle Volga. The spread of early Indo-European began somewhat earlier during the Late Neolithic and was evoked by the Fatyanovo, Abashevo and Pozdnyakovo cultures, predominantly from (south)west towards (north)east. This intercultural transitional zone got its present-day multiethnic shape after the medieval Turkic spread followed by the widening of Slavic. This paper discusses the contact zone between early Uralic and Indo-European varieties in terms of language contacts and cultural spread. Our main hypothesis is that the long-term presence and recurrent prehistorical influx of Indo-European varieties and networks contributed to the geographical and linguistic diversification of Uralic languages in the Middle Volga and southern Siberia.

Keywords: Early Metal Age, Uralic, Indo-European, Indo-Iranian, language contact, Middle Volga, Abashevo

## 19.1 Uralic languages of the Middle Volga area

The three surviving Uralic branches in the Middle Volga consist of five to seven contemporary Uralic languages that descend from the early diversification of local language communities. These are, from east to west, Permian (contemporary Komi Permyak, Komi Zyryan, Udmurt), Mari (Meadow Mari, Hill Mari) and Mordvinic (Erzya, Moksha). In the local research tradition (Kozlova 1978: 17–23; Kozlov 1981: 12; Kraynov 1987; Khirstolyubova & Shklaev 1993: 20–21; Ilyushin 2008: 47; cf. Kallio 2015: 85), the ethnogenesis of these three branches used to be connected to the Volosovo culture (3650–1900 BC), which extended over a geographically vast area that correlates with the documented spread area of the Permian, Mari and Mordvinic, and even further on the southern side of the Volga. Archaeologically, the Volosovo culture was a dynamic Late Neolithic culture that preceded the shift to the Early Metal Age. It had connections with both preceding, contemporary and subsequent cultures.

More recently, it has been suggested that the spread of the Uralic languages in northern Eurasia did not begin in the Middle Volga, but happened only during the Early Metal Age, involving a massive transfer, change and adoption of new cultural features (Kallio 2006: 16–17; 2015; Häkkinen 2009; Lang 2020; Grünthal et al. 2022; Saarikivi 2022). Thus, despite the geographical correlation between the Volosovo culture and the distribution of Permian, Mari and Mordvinic, the evidence to suggest a correlation between the Volosovo culture and Uralic languages is insufficient.

The appearance of new cultural features, migrants and languages in the Middle Volga is evidenced by the south–north and west–east spread of early Indo-European varieties as well as the east–west spread of Uralic. Most likely, other languages were involved in these processes as well, but due to the lack of surviving descendants, it is not possible to identify these languages in more detail. Considering the chronology of the same area, the Turkic languages, Russian and medieval Hungarian in western Bashkortostan are more recent migrant languages. Linguistically, the presence of early Indo-European vari-

eties is concretely evidenced in early Indo-Iranian and Iranian loanwords in local and more distant Uralic varieties (Koivulehto 1990; 2016; Holopainen 2019; Kümmel 2020: 247–255; Metsäranta 2020: 160–199, 278–282; Holopainen & Junttila 2022).

In the western section of the Middle Volga, demarcated by the Sura and Oka tributaries of the Volga, Mordvinic manifests long-term continuity on the right side of the river. Contemporary Mari is, for the most part, geographically located on the left side of the Middle Volga, and so are contemporary Permic languages. The southern territories of contemporary Chuvashia, Tatarstan and Bashkortostan, show a more recent language shift, as Turkic varieties spread over their contemporary core area only during the Late Iron Age and the Middle Ages. The Chuvash language is generally considered as the descendant of the language of the Volga Bolgars who arrived at the Middle Volga during the 7th and 8th centuries AD (Bagautdinov et al. 1998; Huzin 2006; Agyagási 2019: 1–33), and the Tatars some centuries later in the 13th century.

The geographical distribution of the assumed historical core area of Permic, Mari and Mordvinic only partly overlaps with the largest distribution of the Abashevo culture representing the Early Metal Age (Fig. 1). Chronologically, there is a significant gap in the time span of these two phenomena. The development of Permic, for instance, involves an assumption of migration and secondary diffusion from south to north, and the secondary spread of Mari (cf. Agyagási 2021) and Mordvinic took place over the same geographical area after the Middle Ages. Most probably, the spread of local Indo-European and Uralic varieties of the same area used to vary over time, and the contemporary Permic, Mari and Mordvinic communities descend from those that survived in the periphery of recurrent migrations and discrepancies between local populations.

Given the large geographical distribution of the Uralic languages, the question is whether early Indo-European, most notably Indo-Iranian, loanwords were borrowed in a limited area or only after the dispersal of Proto-Uralic along a larger geographical belt to closely related varieties. The crucial point is whether or not there are Indo-European borrowings in the Samoyedic

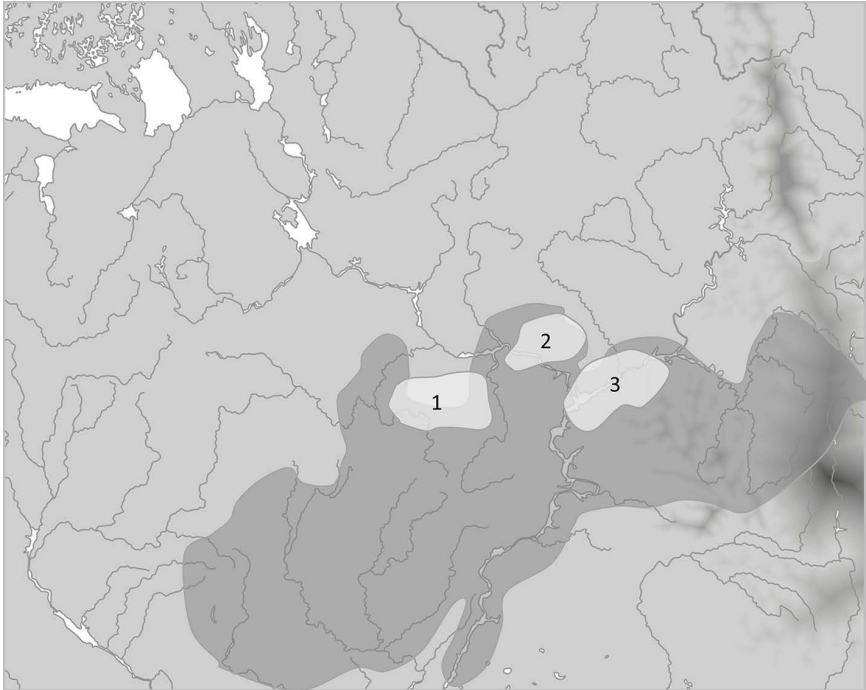


Figure 1. The maximal spread area of the Abashevo culture (2200–1850 BC; based on Parpola 2012: 139) and the assumed historical core areas of 1 – Mordvinic; 2 – Mari; and 3 – Permic (Saarikivi 2022: 55).

languages, the easternmost Uralic branch. Certain early Indo-European loanwords shared by Samoyed and Finno-Ugric have been suggested but, so far, the evidence remains controversial (Simon 2020; Holopainen & Junttila 2022). On the one hand, the lack of unambiguous evidence of early Indo-European borrowings in Samoyedic suggests that there may not have been borrowings that belong to the oldest Proto-Uralic layer. On the other hand, there has not been much discussion on the spread and diversification of the contact zone between Indo-Iranian and Uralic varieties in western Siberia and the Middle Volga. The distribution of Indo-Iranian borrowings in contemporary Uralic is

far from uniform (Koivulehto 2001; Holopainen 2019), which suggests that instead of a limited area, the Indo-Iranian borrowings were adopted in a chain of contacts over a larger geographical area. According to Nichols and Rhodes (2018), the Uralic languages served as catalysts for the eastwards spread of early Indo-Iranian.

## 19.2 The time span of language contacts

The time span between the beginning of the Bronze Age and the Turkic migrations is more than 2500 years. The assumed continuity of Mordvinic, Mari and Permic speaking settlements at the vicinity of their historical core areas implies that language continuity was possible at the periphery of Turkic spread area in the Middle Volga. In more peripheral areas or those with relatively higher population density (cf. Kristinsson 2012: 379) they could survive the devastating Mongolic plundering raids during the 13th century.

The taxonomical adjacency of Saamic, Finnic and Mordvinic suggests that the westernmost zone in the Uralic-speaking Volga area formed a unit that began to diversify early from more eastern varieties. The latitudinal core area of prehistoric Western Uralic is comparable to that of contemporary Mordvinic, extending both south and north from the area between the Sura and Oka, where the Republic of Mordoviya was founded in the 1930s. However, prehistoric cultural diffusion and archaeological zones, most notably the Late Neolithic Fatyanovo(-Balanovo) and the Early Metal Age Abashevo culture, repeatedly crossed the River Sura and extend over the territory of present-day Chuvashia, Tatarstan and the Volga bend.

The contemporary geographical distribution of the three surviving Uralic branches suggests that Mordvinic was more distant from the recurrent migrations along the Volga and southern Middle Volga, whereas Permic and Mari show long-term continuity along the northern tributaries of the Volga, the main watershed between diverse medieval southern and northern popu-

lations. However, the historical core area of Mordvinic is closer to another route from the Upper-Dnepr and Oka, and the west–east cultural transfer. Both in terms of prehistoric cultural zones and changes in the Early Metal Age and medieval language situation, the development of areas that later became inhabited by Turkic populations plays a significant role. The key questions arising from this constellation are:

1. What languages were spoken in the area between the southern Middle Volga and the Ural Mountains before the arrival of the Turkic varieties?
2. How does language continuity since the Early Metal Age lead to the emergence of local Uralic varieties?
3. What other languages did not survive in the same area?
4. Were these languages local Indo-European varieties or completely unknown with no surviving descendants?
5. When and how did the language shift take place?

The change of cultural, economic and political dominance as well as the prestige language has taken place in several waves. The stratigraphy of language shift is more complicated than can be demonstrated on the basis of surviving communities, data drawn from documented languages and historical sources. Moreover, language shift was undoubtedly recurrent and affected all local communities in a way or another.

In the territory of Chuvashia there is an assumed Mari substrate in the toponymy of the northern part of the republic (Egorova 2019), whereas Mordvinic place names are attested in the northwestern part where Erzya villages have survived until to this day. In both cases the onomastic substrate has its origin in a more recent development, which does not reveal the character of local languages during the Early Metal Age. In general, medieval spreads and subsequent language shifts in the Middle Volga area have blurred considerably the ethnolinguistic development of the Early Metal Age, especially in contemporary Turkic settlements and Slavicized districts.

While the chronology and stratigraphy of Chuvash and Tatar spread in the Middle Volga accretion zone is relatively clear, the emergence of Bashkir is not as concretely documented and has a multilingual background. For example, Hungarian scholars (Bartha 1988: 98–120; Fodor 1998; Róna-Tas & Berta 2011: 29–31; Klima 2021; Türk 2021) unanimously consider western Bashkiria, an area labelled as *Magna Hungaria* in medieval written sources, as one of the intermediate homelands that preceded Hungarian migration to the Carpathian Basin. Accordingly, the original homeland of Hungarian and Ugric languages was western Siberia, a likely core area preceding the spread of the Early Metal Age Uralic languages (Parpola 2017: 252–261; Grünthal et al. 2022).

In the long run, the medieval Turkic expansions, the Hungarian migration and the assimilation of the Uralic populations in the northern parts of the southern Middle Volga and the southern Urals are a tip of an iceberg. It is likely that the recurrent influx of more southern and southwestern cultural features involved also the presence of more southern languages, most notably Indo-Iranian and later Iranian, two Indo-European varieties that can be best identified on the basis of loanwords in contemporary Uralic languages.

The corpus of early Indo-Iranian borrowings in various Uralic branches was recently critically analysed by Sampsä Holopainen, who concludes that a part of the Indo-Iranian words have a limited geographical distribution in Uralic, while others such as \*asVra ‘lord’ \*śasra ‘1000’ and \*śata/\*śita ‘100’ are phonologically irregular (Holopainen 2019: 336–343; additional examples in Holopainen and Junttila 2022), a possible evidence for parallel borrowing (Häkkinen 2009: 21). Actually only a few words, such as \*kota ‘house etc.’ and \*śata/\*śita ‘100’, are represented in all or most branches other than Samoyedic.

The assumption that Indo-Iranian loanwords were borrowed to a shared Proto-Uralic is unlikely in the light of their distribution in Ugric, Permian, Mari, Mordvinic, Finnic and Saamic. Most etymologies have a deficient distribution, which probably is not caused merely by the loss of words in languages that lack them, but originally limited distribution. The high number of

Indo-Iranian borrowings in Permic manifests chronologically different layers and suggests that the contact between Iranian and Permic continued over a longer period of time, demonstrating variation between the Indo-Iranian varieties that influenced Permic (Holopainen 2019: 344; Metsäranta 2020: 160–207).

Consequently, the primary explanation for the existence of Indo-Iranian and, *mutatis mutandis*, Iranian borrowings in Uralic branches other than Samoyedic is that there used to be recurrent contacts between local Uralic and Indo-European varieties in a large area extending from southern Siberia to the Middle Volga. Indo-Iranian played a prominent role in the development and spread of bronze technology from east to west across the southern Urals, and there is strong archaeological evidence for the presence of Indo-Iranian languages in the vicinity of the southern Urals in the beginning of the Bronze Age (Kuz'mina 2007; Parpola 2017; Grünthal et al. 2022: 9). The chronological correspondence between the Indo-Iranian and Proto-Uralic layers supports the hypothesis that the spread of the Uralic languages from southern Siberia to the Middle Volga took place relatively rapidly.

Thus, as suggested by chronologically diverse Indo-Iranian and Iranian borrowings, there used to be local contacts between southern Siberia and the Middle Volga, which diverged in space and time. The assumed chain of contact zones, a transcultural and multilingual belt, has a parallel in the explanation that Valter Lang (2020) has outlined for the contacts between the Pre- and Proto-Finnic and the early Baltic in the Upper Volga and eastern Baltic Sea areas.

### 19.3 The spread of Indo-European in the Middle Volga

The contact zone in southern Siberia is evidenced by Indo-Iranian borrowings in the Ugric languages and those few etymologies that have a wide distribu-



tion in both Ugric and European Uralic. Given the eastward spread of the Indo-Iranian languages, southern Siberia has been considered as the geographic area where the oldest contacts between Proto-Uralic and Proto-Indo-Iranian took place (Makkay 2001; Anthony 2007: 375–383; Parpola 2017; Kortlandt 2019). It is striking that the gravitation of early Indo-European and Uralic populations in the Middle Volga comes from almost opposite directions reflecting mobility over relatively large territories. Most evidently, this kind of cultural influx involved both the presence of settlements with a more military character, such as the Abashevo culture, and changes in relative population densities (Kristinsson 2012). This explains the presence and continuity of Indo-European speaking networks, whereas the east–west spread of the Uralic speaking population most likely profited from economic dependence on the Indo-Europeans. Accordingly, Parpola (2017: 252) considers the northern zone of the Abashevo culture as a transferring multilingual culture between Early Uralic and Indo-Iranian speakers.

The northward spread of early Indo-European varieties and the emergence of cultures such as Fatyanovo(-Balanovo), Abashevo and Pozdnyakovo in the Middle Volga have been connected to the spread of early Indo-European communities (Carpelan & Parpola 2001: 104–111; Carpelan 2006: 86–87; Anthony 2007: 375–83; Bol’shov 2008; Nordqvist & Heyd 2020; Saag et al. 2021) or even early Pre-Balto-Slavic (Parpola 2022: 13–14). However, there is no unambiguous evidence that supports the hypothesis of an Early Metal-Age (Pre-)Balto-Slavic variety. More likely, as Andersen (2003) and Matasović (2013: 97–98) conclude, subsequent Pre-Baltic and Pre-Slavic merged with other prehistoric Indo-European variants of eastern Europe that had adopted elements from even earlier but rather similar dialect strata.

The stratigraphy of Indo-Iranian borrowings in the Uralic languages proves that they originated from chronologically diverse Indo-Iranian varieties, while most loanwords were probably borrowed from the Iranian branch (Holopainen 2019: 81–207; Kümmel 2020: 253–254; Parpola 2022: 17–18). A high percentage of the borrowed vocabulary in European Uralic is semantically related with early animal husbandry and food production. The benefits of

maintaining exchange connections with societies that had a command of more effective food production methods are obvious. In turn, the population of the forest(-steppe) zone could offer furs and products of early metallurgy, which were more than mere luxury products. Furthermore, mutual economic dependence made the expanding communities stronger and more resistant in comparison with and at the expense of earlier local communities that had to adopt the newcomers' habits and language (cf. Kristinsson 2010: 297–322; 2012).

## 19.4 The shopping lists of traders and mobile communities

Compared to the abundant number of early Baltic and Germanic loanwords in the Finnic languages and the more recent Turkic vocabulary in especially Udmurt and Mari, and a lesser extent in Hungarian and Mordvinic, the overall number of attested Indo-Iranian loanwords in European Uralic is much smaller. However, individual etymologies are not insignificant and they transmit valuable information about the socio-historical context. Actually, a more focused search for potential Indo-Iranian borrowings in the Middle Volga Uralic languages may contribute with relevant new findings in the future.

The main semantic categories that are reflected in the borrowed Indo-Iranian vocabulary<sup>1</sup> (quoted from Holopainen 2019) include **animal husbandry** ('stallion ~ horse', '(horse's) mane ~ neck (of a horse)', 'graze ~ feed', 'spindle', 'wool', 'whip', 'wing', 'reindeer ~ livestock', 'pig(let)', 'reindeer calf ~ livestock', 'horn', 'goat', 'beeswax', 'cow', 'ox', 'udder', 'foal', 'elk calf ~ calf', 'boar'), **food production** ('root ~ grass', 'voracious ~ eater', 'barren, sterile ~ destitute of fields', 'side, ribs', 'grain', 'flour ~ grain', 'plough ~ sow', 'stump ~ branch', 'worm ~ mosquito', 'bee', 'honey', 'barley', 'part ~ share', 'bake ~ boil', 'milk', 'spleen', 'vessel', 'flour', 'ear of corn', 'fox', 'rope ~ string', 'get, obtain', 'be extinguished', 'rain ~ fall', 'beer', 'hare', 'burn-beaten ~ burned',

<sup>1</sup> The indicated meanings are based on attested Uralic languages that semantically correlate (~) with a documented Indo-Iranian source. The list includes most, but not all, plausible or possible etymologies and semantical parallels, which are analysed in more detail by Holopainen (2019) and Holopainen and Junttila (2022).

‘eagle’, ‘meat ~ gift’, ‘spring ~ germ, germed seed’, ‘(crooked) rod ~ crooked’, ‘wolf’, ‘fish weir ~ water weir’, ‘sprout’, ‘forest ~ tree’, ‘kidney’, ‘coal’, ‘fire’), **mobility** (‘shaft ~ plough’, ‘bind ~ band’, ‘row ~ path’, ‘way’, ‘bridge’, ‘wagon’, ‘sleigh ~ cart’, ‘boat ~ wood’), **social relations** (‘lord’, ‘tribe ~ cohort’, ‘steal ~ thief’, ‘village ~ house’, ‘wonderful, dear ~ force’, ‘God ~ grandeur’, ‘pay ~ give wealth’, ‘dead’, ‘man ~ human’, ‘devil ~ spirit’ (?), ‘dumb’, ‘help’, ‘slave’, ‘cousin’, ‘brother-in-law’, ‘old ~ distant, earlier’, ‘flee’, ‘sister’, ‘be born’, ‘care ~ shadow’, ‘sky ~ God’, ‘healthy’, ‘hope ~ heavenly’, ‘fight ~ catch’, ‘husband ~ man’, ‘hate ~ venom’) and **early metallurgy** (‘hammer’, ‘iron’, ‘awl’, ‘knife ~ hatchet’, ‘gold’, ‘nail’, ‘sword’, ‘armour’, ‘knife ~ sharp’).

In addition to these, numerals, most notably decimals, are a specific group of words that were borrowed from early Indo-European varieties to Uralic in the Middle Volga. Numerals denoting ‘8’ and ‘9’ in Mari and Western Uralic have been compared with an Indo-Iranian source as well but they cannot be straightforwardly derived from a phonologically consistent etymological path (Holopainen 2019: 277–278) and need a more detailed syntagmatic analysis, whereas the word denoting ‘7’ is a possible parallel Indo-Iranian loan in all Ugric languages Mansi, Khanty and Hungarian (Holopainen 2019: 239–240).

The decimals ‘10’, ‘100’ and ‘1000’ indicate the importance of a definite high amount and the importance of quantities in the early networks between Indo-European and Uralic speakers. While words denoting ‘10’ in Western Uralic, Mari and Mansi are inherent, corresponding Hungarian and Permic words are borrowed from Iranian (Holopainen 2019: 291). Words denoting ‘100’ in other Uralic branches than Samoyedic clearly originate from the same source but, as Holopainen (2019: 242–243) concludes, the phonological mismatches most probably result from parallel borrowing from Indo-Iranian. However, Kümmel (2020: 248) notes that the words for ‘hundred’ are not necessarily parallel loans, as the Permic vocalism can be explained regularly. Finally, numerals denoting ‘1000’ in Uralic varieties of the Middle Volga and western Siberia are lexically more diverse, but also originate from various early Indo-European languages.

Likewise, there are other Indo-Iranian borrowings in European and West Siberian Uralic that Holopainen assesses as parallel.<sup>2</sup> Furthermore, there are several words belonging to semantic categories such as 'bind', 'bridge', 'calf', 'God', 'gold', 'hammer', 'lord', 'luck', 'man', 'milk', 'old(er)', 'rope ~ string', 'wool' etc. that were borrowed more than once.

## 19.5 Discussion

The roots of ethnohistorical development and of the documented language groups of the Middle Volga area originate from the Early Metal Age. While the area can be considered as a recurrent accretion zone that has brought new populations and renewed networks in various directions over time (Nichols & Rhodes 2018), the presence of Uralic-speaking communities in the Early Bronze Age is well motivated. Chronologically, they adhere to a slightly later period than the presence of the first Eneolithic Indo-European speaking people who arrived in the same area. The assumption of a uniform Uralic proto-language that spread from east to west over the Middle Volga is based on sound historical methodology and lexical reconstruction. These methods strive towards logical consistency, whereas variation that is characteristic of every speech community is often beyond their scope. However, it is evident that variation was characteristic of the early Uralic speech communities as well, and the same is valid to the Indo-European and non-documented languages of the same region.

Several aspects of the shift from the Eneolithic to the Early Metal Age cultures in the Middle Volga deserve more attention in the future. The following ones emerge from the discussion in this paper, to mention but a few:

1. Contacts with Indo-Iranian are not important only for the periodization of early Uralic varieties but also as a catalyst for the Uralic spread westwards.

<sup>2</sup> Here, only the meaning and reference (H = Holopainen 2019) are given in the lack of space: 'shaft' (H 62–63), 'barren, sterile' (H 65–66), 'value, price' (H 68–71), 'iron' (H 121–124), 'milk' (H 178–180), 'horn' (H 220–222), 'luck' (H 265–267) and 'cow' (H 287–288). Parallel borrowing, convergence and phonological irregularities in early Indo-Iranian loanwords was pointed out already by Koivulehto (1990) and Korenchy (1972).

2. The networking and exchange of products with more south(western) communities reinforced the spread of Uralic communities, adoption of new territories and linguistic continuity.
  3. Local contacts of Uralic and Indo-Iranian arose between various communities of western Siberia and the Middle Volga.
  4. Instead of a single limited contact area, there were many of them, increasing the diversity of local Pre-Permic, Pre-Mari and Pre-Mordvinic communities.
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