

Riho Grünthal

Department of Finnish, Finno-Ugrian and Scandinavian Studies
University of Helsinki

Baltic loanwords in Mordvin

Linguists have been aware of the existence of Baltic loanwords in the Mordvinic languages Erzya (E) and Moksha (M) since the 19th century. However, the analysis and interpretation of individual etymologies and the contacts between these two language groups have been ambiguous, as the assumptions on the place and age of the contacts have changed. The assertions on the prehistoric development and early language contacts between the Finno-Ugric (Uralic) and Indo-European languages have changed as well. The main evidence concerning early Baltic loanwords in the Finno-Ugric languages is drawn from the Finnic languages, which are located geographically further west relative to Mordvinic. The high number of early Baltic loanwords in the Finnic languages suggests that the most intensive contacts took place between the early varieties of the Finnic and Baltic languages and did not influence other Finno-Ugric languages to the same extent. In principle, the continuity of these contacts extends until the modern era and very recent contacts between Estonian, Livonian, and Latvian that are geographical neighbors and documented languages with a concrete geographical distribution, historical and cultural context.

The Baltic influence on the Saamic and Mordvinic languages was much less intensive, as evidenced by the considerably lesser number of loanwords. Moreover, the majority of Baltic loanwords in Saamic are attested in the Finnic languages as well, whereas the early Baltic influence on the Mordvinic languages diverges from that on the Finnic languages. We assume that there were parallel contacts between prehistoric Baltic and Finnic and Baltic and Mordvinic languages and, in the light of what follows, these contacts took place independently of one another.

The current article scrutinizes the etymological data labeled as Baltic loanwords in Mordvinic and suggests that, although several proposed lexical comparisons between the Baltic and Mordvinic languages are incorrect, the number of plausible and possible etymologies, nevertheless, is more than thirty. The etymological data include nine new etymologies (E M *karks* ‘belt’ etc., E *kerš*, *kerč*, M *kerdži*, *kerži*, etc. ‘left’, E *penge*, M *pengä* ‘log, firewood’, E *raške*, M *raškä* ‘relative, friend’ etc., E *réđams*, *ráđams*, M *ráđams* ‘notice, perceive’ etc., E M *rudas*, *urdas* etc. ‘dirt, mud’, E M *talaj* ‘recently, lately’ etc., E *terd’ems*, *tärd’ems*

etc., M *terdəms* ‘call; invite’, E *vir*, M *vir*, *virā* ‘forest’). The data are used to reconcile the order and possible age of certain historical sound changes in Mordvinic and its earliest reconstructed variety Pre-Mordvinic, the ancestral form that bridges Proto-Mordvinic with Proto-Finno-Ugric (PFU) and Proto-Uralic, the shared proto-languages of present-day Finno-Ugric languages. In this article, the term Finno-Ugric will be used instead of Uralic, as the terminological distinction between these two concepts is not important for the given topic.

1. Introduction: The identification and characterization of Baltic loanwords in Mordvin

The main instigator of modern research into early Baltic and Germanic loanwords in the Finnic languages was Vilhelm Thomsen, the famous Danish linguist and one of the most quoted specialists of this research area ever since. The existence of Baltic loanwords in the Finnic languages had been noticed already before Thomsen, but the conclusions mainly remained at the level of more or less random comparisons between individual words followed with other misinterpretations. There were contemporary linguists who worked parallel with Thomsen; however, he created a more systematic path for loanword research (Juntila 2009).

More recently, Wälchli (1997) and van Pareren (2008) have carefully investigated linguistic, onomastic, and archaeological references to contacts between Baltic and Mordvinic languages (cf. also the surveys of Stipa (1973b) and Vaba (1983a, 1983b)). Wälchli suggests several new etymologies and assumes that in addition to normal lexical borrowing, words with grammatical functions in Mordvin were actually borrowed, too. Van Pareren’s article includes and quotes numerous etymologies that were proposed as Baltic borrowings in Mordvinic. The current paper seeks to shed more light on a sound historical analysis of individual etymologies.

Thomsen and his contemporaries, most notably Wilhelm Tomascheck, were the first ones who could systematically demonstrate the existence of Baltic loanwords in Mordvinic (BLM). Thomsen played a seminal role in the rise of historical linguistics and etymology based on the neogrammarian method. He adapted loanword stratigraphy into prehistoric processes and assumed that BLM were adopted into Mordvinic independently of the Baltic influence on the Finnic languages. Furthermore, he concluded that the Mordvins or an adjacent tribe such as the Muromians had earlier lived further westward from the historical core area of the Mordvins (Thomsen 1890: 153–155). The contribution of Thomsen was seminal, because he actually presented all possible logical conclusions and laid the foundation for subsequent studies in this area. Since Thomsen, two other competing views have got more attention in references considering BLM. Firstly, it has been assumed that the contacts took place in parallel, and secondly, it has been maintained that the Baltic loanwords were adopted at a common proto-language stage of the Finnic and Mordvinic languages.

Thomsen's hypothesis that the Finnic languages transferred the Baltic loanwords to Mordvinic was repeated later as well (Kalima 1936: 191–192; Nuutinen 1987: 524; Sammallahти 1977: 123–124; Vaba 1985: 139). Furthermore, it was assumed that the contacts between Baltic and Finnic used to be intensive, whereas contacts between Baltic and Mordvinic were more occasional. It was concluded that the contacts between present-day Baltic and Volgaic languages were hardly possible and the loanwords were adopted from a transferring language. For example, it was suggested that a lost Finno-Ugric language, such as the language of the Merya people, transferred Baltic loanwords to Mordvinic (Kalima 1936: 192; Keresztes 1987: 41–42).

The assumption that Baltic loanwords in Finnic and Mordvinic originate from shared contacts is considered unlikely by many scholars for two main reasons, namely, phonological ambiguity and uneven lexical distribution. It is difficult to combine phonologically those few Baltic loanwords that occur both in the Finnic and Mordvinic languages, because the sound correspondences diverge from that of inherited Finno-Ugric vocabulary. The shared words have different reconstructions in Finnic and Mordvinic. Consequently, there presumably were direct contacts between Mordvinic and Baltic (Kalima 1936: 192; Keresztes 1987: 41–42; Suhonen 1988: 613–614; Vaba 1983b: 141–142; 1988: 181). In fact, Kalima (*op. cit.*) in *expressis verbis* assumed that there used to be contacts between the Galinds (Russian *goljad'*), a Baltic tribe mentioned in early historical texts on Russia during the Middle Ages, and the Mordvins. This conclusion was recently revisited by van Pareren (2008) and allows a further hypothesis that there probably were many contact areas between Uralic and Baltic languages in Russia, as assumed by Vasmer (1932: 635–636) and Vaba (1983b: 139).

There have been diverse views concerning the actual number of Baltic loanwords in Mordvinic. In general, most loanwords occur in both Mordvinic languages, but some of them are attested only in Erzya. During the second half of the 20th century, the estimation that there are roughly ten Baltic loanwords, as suggested by Kalima, was probably the most frequently quoted number by other linguists (Bartens 1999: 15; Kalima 1936: 191; Korhonen 1981: 30; Suhonen 1988: 614; Zaicz 1998: 213). Vaba (1985) assumes in a conference abstract that there are roughly twenty plausible Baltic loans in Mordvinic. Furthermore, he estimates that 10–15% of all early Baltic loanwords in the Finnic languages have a cognate in the Volgaic languages.

2. The eastern distribution of the Baltic languages

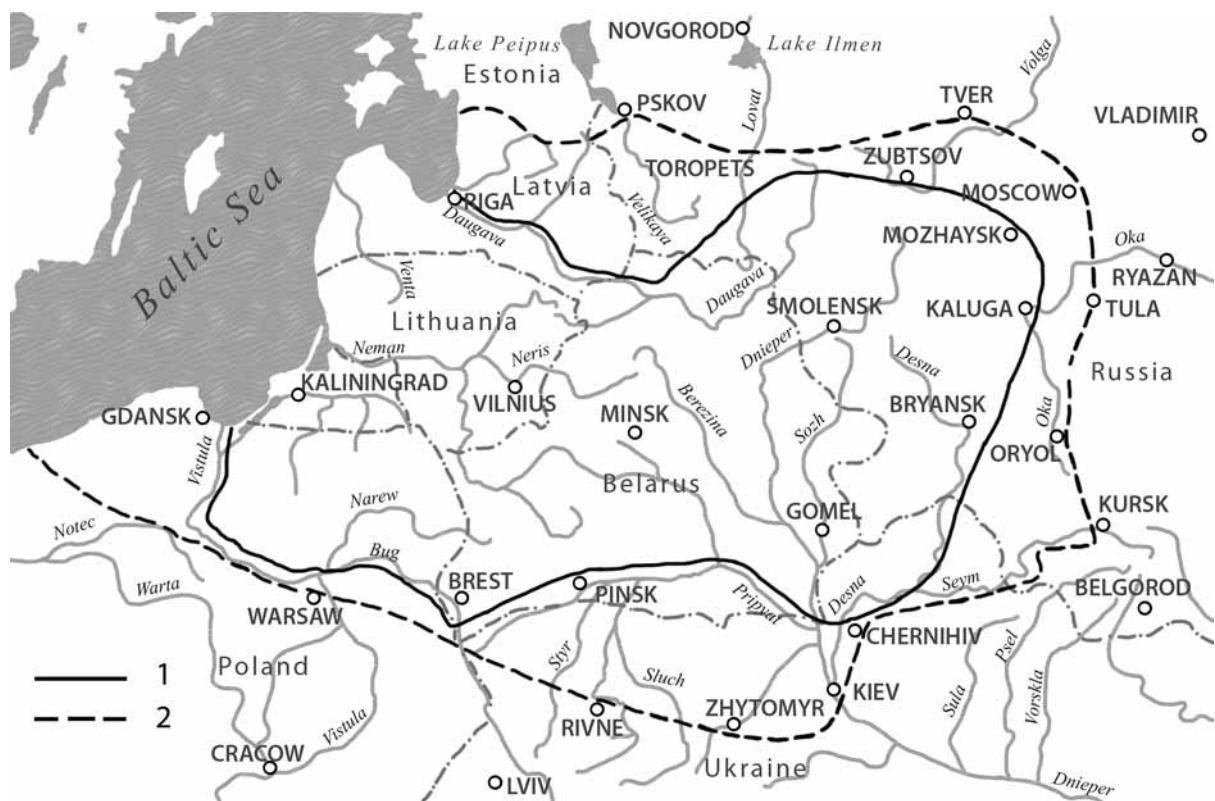
The historical distribution of the Baltic languages in Central Russia is evidenced by historical sources referring to tribes and place names considered to be Baltic. The first Russian chronicles include lists of various peoples living in Russia paying taxes to the rulers. The texts are usually taken as a written document concerning the existence of the isolated Baltic tribes, the Galinds and Vyatiches, on the upper flow of the Oka after the beginning of the Slavic invasion in the

early Iron Age and as late as the 11th and 12th century. The geographical distribution of the hydronyms of the assumed Baltic area on the upper flow of the River Dnepr and its tributaries is much larger. This hypothesis of a high number of place names with Baltic origin was first proposed at the beginning of the 20th century (Būga 1924: 103; Knabe 1962; Vaba 1983a: 80) and later considerably elaborated by Toporov and Trubačov (Toporov & Trubačov 1962; Toporov 1972; Toporov 1981). The conclusions of Toporov and Trubačov were rapidly accepted by their contemporaries and adopted by later researchers (Gimbutas 1983: 24–25; Mallory 1989: 81–84; Otkupščikov 2005; van Pareren 2008; Sedov 1971; Stang 1966: 1–2; Tret'jakov 1966: 184–189, 231; Vlasto 1986: 302, Zinkevičius 1996: 9–14). There have even been attempts to reconstruct the phonological system of the Baltic languages of the same area from the evidence found in place names. In fact, several word stems have cognates in documented Baltic and Slavic languages, which makes it possible to outline certain details of the language of the Galinds and Baltic area on the upper flow of the Dnepr and the Dvina (Lekomceva 1980, 1981).

Basically, the data presented in (Toporov & Trubačov 1962) should be revised in terms of up-to-date theories on the historical relationship between the Baltic and Slavic languages and their common background, as Stang (1966: 2–15) already pointed out. In more recent studies Kallio (2006) and Koivulehto (2006) have assumed a long-term continuity in contacts between the Finnic and Slavic languages similar to the well-argued continuity in the contacts between the Finnic and Germanic languages, as well as the Finnic and Baltic languages. This assumption suggests that the split between the Baltic and Slavic languages is not as old as the difference between other northern branches of the Indo-European languages.

The assumption of Baltic hydronyms in the area extending to the east from the area of the present-day Baltic languages is based on the dissimilarity of the Baltic and Slavic languages at the time the names were adopted. The area includes the upper flow of three important water routes, namely, the rivers Daugava (Zapadnaya Dvina) leading to the Baltic Sea and western Baltic area, Dnepr and its tributaries connecting Central Russia with multinational southern Russia and the Black Sea, and Oka leading first to the Volga and through a more eastern route to Turkic-speaking areas and the Caspian Sea.

The River Oka, a tributary of the Volga, bridges the assumed Baltic areas with the Mordvinic ones, although there is no documented evidence of a very tightly adjacent location geographically for the Baltic and Mordvinic peoples. Nevertheless, the areas are close enough and the Oka water route is important for the Mordvins. In the 19th and 20th centuries, for instance, the geographical distribution of the Mordvinic languages has been limited to the river in the west, a tributary of the Oka. On the one hand, it is assumed that, historically, some Mordvins used to live west from the areas where the language is documented. There are a few historical references to the northernmost Mordvinic tribe, the Teryukhans, who used to live on the shore of the Volga and Oka. Given the local oral tradition that preserved the awareness of their origin, the Teryukhans were assimilated by the Russians only relatively recently (Feoktistov 1975: 253–254;



Map 1. The geographical distribution of Baltic hydronyms in Central Russia (based on Gimbutas 1983: 24–25 and Toporov & Trubačov 1962; revised by Zinkevičius 1996: 12). 1 – the area where there are many such names; 2 – the area where they are few and of ambiguous origin.

Martyanov & Nadkin 1979). Tretyakov (1966: 293–294) speaks more generally about graves of Finno-Ugric tribes on the left side of the Oka labeling them as Muroms. On the other hand, the Oka is considered to be one of the most important Slavic migration routes that brought new inhabitants into the area of the Oka and Volga (Mongajt 1961: 139; Stipa 1973a: 381–383). Thus, the area has been very important for multiple ethnic contacts, due to which Ravila (1973: 305), for instance, is critical of the mutual compatibility between prehistoric cultures and later ethnic groups with documented languages.

Most of the presented viewpoints assume a relatively late contact between the Baltic and Mordvinic languages, partly motivated by a certain transparency of the alleged Baltic hydronyms of the given area. However, it has also been maintained that, in fact, the Volga-Oka interfluvia is a much older contact area between early Indo-European and Finno-Ugric languages and their varieties. In their concise essay on the emergence of early Indo-European and Finno-Ugric languages in the evidence of prehistoric cultures, Carpelan and Parpolo maintain that the late Neolithic Fat'yanovo (starting as early as 2800 calBC) and Volosovo cultures (c. 3650–1900 calBC) represent an early contact zone

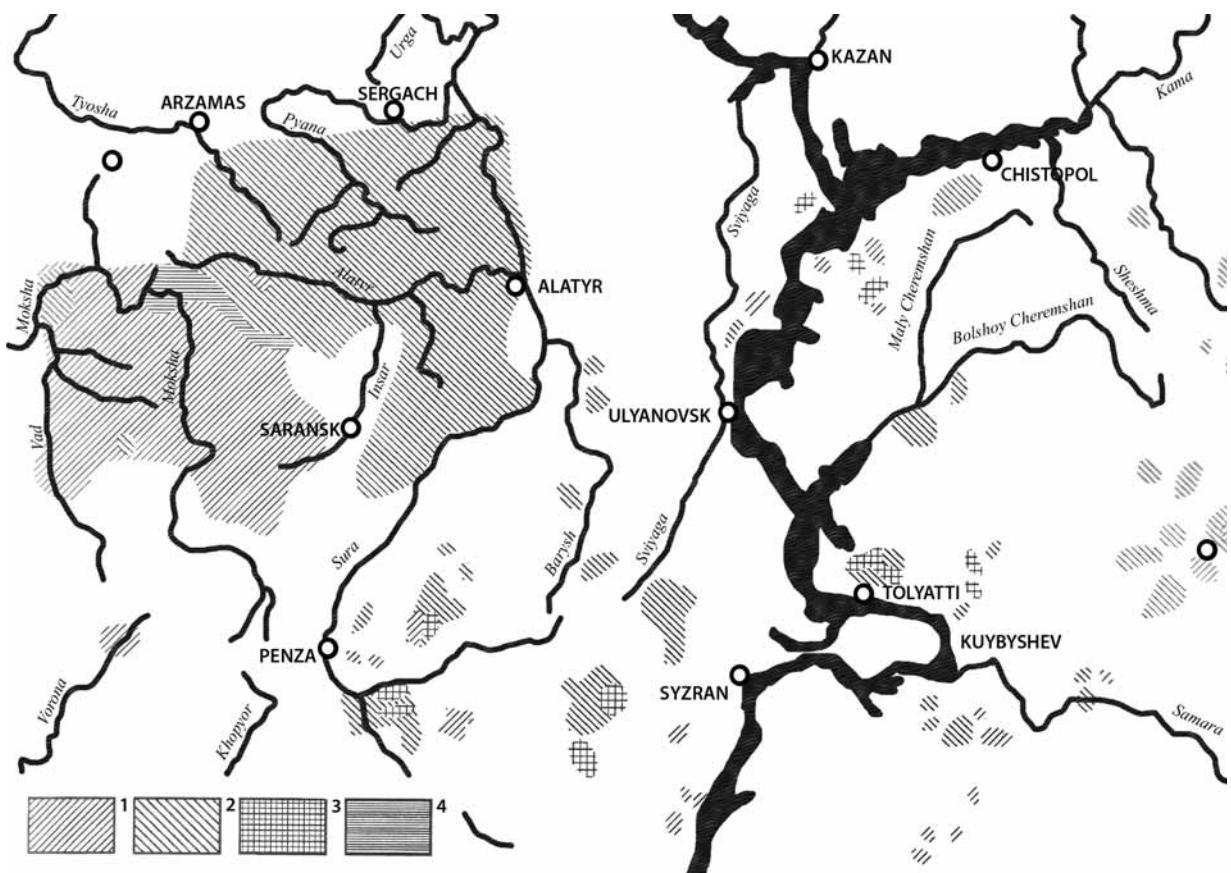
between Indo-European and Finno-Ugric tribes. They conclude that the language of the Fat'yanovo elites most likely was Pre-Proto-Baltic (cf. also Knabe 1962; Tret'yakov 1966: 111–112), which was preserved in the Balanovo culture (starting 2200 BC) (Carpelan & Parpola 2001: 85–89). The latter is labeled as Indo-European by Tret'yakov (1966: 94).

Furthermore, Carpelan and Parpola claim that two ethnically important concepts that label the Mordvins are adopted during a very early language contact situation. **Mord* (> Russian *Mordva*) < Proto-Aryan *mártā*; cf. Proto-Aryan **máryā-* < Proto-Indo-European **meryo-* ‘man’ is first attested as *Mordens* in literary documents c. 550 AD in the history of the Goths by Jordanes. The corresponding appellative is represented in present-day Mordvinic languages as E *mirde*, M *mirdä* ‘man’ originating from < PFU **mertä* < Proto-Aryan/Old Indo-Aryan *mṛtā-* ‘mortal, man’. (Carpelan & Parpola 2001: 111–112.)

Generally speaking, the role of language contacts and the change of lexicon due to foreign influence is not as important in the historical development of Mordvinic as it is in the history of the Finnic languages in the west and Mari and Udmurt, east of Mordvinic. In Proto- and Pre-Mordvinic there is no intensive lexical and grammatical influence comparable to the Germanic and Baltic influence in Proto-Finnic and the Turkic influence in Mari and Udmurt in the Middle Ages. Therefore, the identification and more detailed analysis of the assumed Baltic influence on Mordvinic and other language contacts have more general importance in the identifying of intercultural connections and routes in Central Russia.

Given the general picture of ethnic prehistory in Central Russia and the geographical connection between areas in which the Baltic and Mordvinic languages were historically spoken, it is obvious that there were direct linguistic contacts between Baltic and Mordvinic. (For more detailed discussion on mainly archaeological research on this topic, see Pareren 2009.) We maintain that there were parallel contacts and many contact areas between different Finno-Ugric and Baltic languages and groups, as some linguists have assumed earlier. This conclusion involves several questions that will be only partly addressed in this article.

- (i) Do all Baltic loanwords in Mordvinic represent the same chronological layer or is there evidence of long-term contact between these two language groups?
- (ii) If Baltic loanwords were borrowed into the Finnic and Mordvinic languages separately, were they borrowed from similar prehistoric Baltic varieties or do they originate from different languages?
- (iii) What other contacts were there between the Mordvinic and Indo-European languages and were they chronologically parallel or successive?
- (iv) How old are individual Baltic loanwords and what is their relative chronology in comparison to other lexical strata?
- (v) At what historical stage of the Mordvinic languages were the Baltic loanwords borrowed?



Map 2. The geographical distribution of the Mordvinic languages in the 20th century. The core area between the rivers Moksha (an eastern tributary of the Oka) and Sura consists of the (1) Moksha and (2) Erzya speaking areas in the republic of Mordovia. (Based on Feoktistov 1990: LIX.)

The lexical corpus analysed below is too small to make detailed conclusions concerning the relationship between the Baltic varieties that have influenced the Finnic and Mordvinic languages. The evidence of place names is also too limited for exact conclusions (Lekomceva 1980, 1981). Furthermore, the phonological constraints and syllable structure of prehistoric Finno-Ugric varieties have caused a strong simplification of the original phoneme clusters in the Indo-European languages, which often prevents the reconstruction of subtle alternation between parallel forms in adjacent languages. It is much easier to trace back changes that originate from clearly different sources. Consequently, the second question (ii) will remain unanswered.

Our basic hypothesis, on the one hand, is that given the undetermined character of the Baltic language, the identification of Baltic loanwords in Mordvinic should take place by means of Proto-Baltic. On the other hand, Proto-Mordvinic is not the best possible solution to point out the corresponding form of a Baltic word in Mordvinic, because it only represents the most recent layer based on the comparison of Erzya and Moksha. Thus, the evidence of Baltic loanwords in Mordvinic will be used to shed light on issues such as questions (iv) and (v). As the concept of Pre-Mordvinic has been used in other studies on the early development of the Mordvinic languages, it will be applied below as well.

We shall next proceed with an overview of the historical development of the Mordvinic languages that will be followed by an overview of some language historical facts concerning other Indo-European loanwords in Mordvinic.

3. The historical development of the Mordvinic languages

The historical development and position of Mordvinic in the Finno-Ugric (Uralic) language family has been interpreted ambiguously. Traditionally, it is maintained that the Mordvinic languages share more vocabulary and grammatical features with the Finnic languages than with more eastern Uralic languages, such as Mari, the Permic languages, Hungarian, Ob-Ugric, and the Samoyedic languages (Bartens 1999: 13; Bereczki 1988: 314; Hajdú 1962: 94–97, 1981: 54; Häkkinen 1997: 162–210; Terho Itkonen 1997: 247–260; Keresztes 1987: 32–43). The frequently quoted and widely accepted phonological reconstruction model of Sammallahti (1988) assumes the existence of intermediate proto-language stages. Methodologically, it actually implies a common proto-language between Finnic and Mordvinic, although there is only very little, if any, lexical evidence of a closer relationship between the Finnic and Mordvinic languages (Grünthal 1996; Häkkinen 1984). Accordingly, the vowel history in Finnic and Mordvinic can plausibly be explained on the basis of mutual comparison (Erkki Itkonen 1946; Bartens 1999: 53–67), as the main evidence of assumed quantitative vowel length correlation in Proto-Finno-Ugric is drawn from Saamic, Finnic, and Mordvinic (Sammallahti 1988).

The difficulty in identifying shared phonological innovations between individual branches has urged some linguists to assume that, in fact, there were no intermediate proto-language stages between the earliest Finno-Ugric (Uralic) proto-language (Proto-Uralic, Proto-Finno-Ugric) and proto-languages of individual branches (Proto-Finnic, Proto-Mordvinic). This hypothesis, however, is methodologically biased and should be scrutinised by analyses that are based on a greater number of mechanisms of language change. (For a more detailed discussion, cf. Grünthal 2007.)

In the case of Mordvinic, it is necessary to assume that regardless of the plausibility of an assumed Finno-Volgaic proto-language there was a long period that can be reconstructed only on the basis of the Mordvinic languages.

Proto-Mordvinic is a relatively recent layer that was preceded by several phonological, lexical, and grammatical changes that are not shared with other Uralic languages. Consequently, Erkki Itkonen (1971–72) and Keresztes (1987), for instance, apply the concept of Pre-Mordvinic, while Bartens (1999) compares Proto-Mordvinic with the assumed Proto-Finno-Volgaic.

The assumption of Pre-Mordvinic is empirically motivated, because those phonological changes that are seen in Proto-Mordvinic and unknown in the earlier Proto-Finno-Ugric layer occurred at this stage. These changes include major shifts in the phonological system, such as the replacement of geminate plosives **kk*, **pp*, **tt* with single ones *k*, *p*, *t*, the combinatorial change of voiceless plosives to voiced ones between voiced phonemes *k > g* (in certain cases *> j*), *p > b* (*> v*), *t > d*. The changes in the vowel system are important, too, and include the loss of quantitative correlation between long and short vowels, changes in the stress system, and the quality of the first syllable vowel. The mechanism of the latter change is compatible with the qualitative change of first syllable vowels in Saamic, because in both cases the change is affected by the quality of the second syllable vowel (Bartens 1999: 54–67; Erkki Itkonen 1946, 1971–72; Korhonen 1981: 79–98). However, it must be noted that these changes are clearly different in Mordvinic and Saamic and took place independently of one another.

There is plenty of lexical and grammatical data that can be presented as additional empirical evidence that supports the assumption of Pre-Mordvinic. The Pre-Mordvinic stage must be understood as a dynamic period, during which the prehistoric language underwent many transitions. As an intermediate stage, Pre-Mordvinic should not be understood as a uniform state, but instead as a relatively long period of independent historical development that very likely can be divided into subperiods. In principle, Pre-Mordvinic could be seen as a "punctuated equilibrium", as Dixon (1997) conceptualizes a period limited by periods of innovations. Following Dixon's model, Proto-Finno-Ugric and Proto-Mordvinic would be the stages of innovation in this case. However, Dixon's assumption has been heavily criticized for too abductive conclusions on the implications of lexical and grammatical parallels with genealogical diffusion and, thus, not being mutually exclusive (Haspelmath 2004, Ross 2001). The current topic, Pre-Mordvinic, apparently reflects diverse sociolinguistic and contact-induced changes as well, although there is still relatively little information about them.

In the illustrated language historical context, contacts with other languages and data that demonstrate diachronic changes in other languages are indispensable for pointing out more detailed facts in language change. Contacts with various Indo-European languages and lexical borrowings from them have a very important role in the research of the history of the Finnic languages. Contacts between the Finnic and Germanic languages, for instance, show long-term continuity and demonstrate the difference between those Finnic varieties that were influenced at different stages of contacts (see, Kallio in this volume). As Koivulehto (1984, 1999b: 341–351 (1995)) first pointed out, the earliest Germanic (or Pre-Germanic) borrowings were adopted at an early stage that preceded those changes that ultimately led to the rise of (late) Proto-Finnic.

A similar kind of approach opens new possibilities in the research of the history of the Mordvinic languages, although this possibility has not been applied so far. Thus, as mentioned above, the identification and analysis of Baltic loanwords in Mordvinic has special importance both for the discussion of ethnic prehistory in Central Russia and the uncovering of the history of the Mordvinic languages. The next section will briefly discuss the evidence of early Indo-European borrowings in Mordvin in comparison to inherited Finno-Ugric (Uralic) vocabulary.

4. The relative chronology of language contacts between early varieties of the Mordvinic and Indo-European languages

The influence of language contacts on the Finno-Ugric languages of Scandinavia and North and Central Russia is far from uniform, in terms of the space, time, and intensity of these contacts. If we ignore the intensive Russian influence in the modern era, the Mordvinic languages yield much less Turkic influence than what is found in Mari and Udmurt, whereas Baltic and Germanic (Scandinavian), the northeastern branches of the Indo-European language family, have strongly influenced the Finnic and Saamic languages. The constant ethnic restructuring of the Middle Volga area during and since the Middle Ages has left identifiable traces in Mari and the Permic languages beginning with early Old Bolgarian influence that gradually transforms to Chuvash and Tatar influence followed by mutual contacts and the currently ubiquitous Russian influence.

The historical development of the Mordvinic languages seems to be more independent of large-scale contact-induced change in prehistoric times than for other Finno-Ugric languages mentioned above, although it is well-known that some early Indo-European borrowings occur only in the Mordvinic languages (Joki 1973; Koivulehto 1999a: 216–231) and new etymologies can be suggested (cf. Grünthal 2001, 2002). There are several reasons for this. For instance, it can be assumed, as Carpelan and Parpola do, that other language groups first met these migrant groups and tribes that ultimately caused large ethnohistoric changes in the inherited Mordvinic areas or their immediate vicinity (Carpelan & Parpola 2001). It is also likely that the prehistoric Mordvinic-speaking community was sociolinguistically relatively strong, more resistant against random linguistic innovations, had a stable population size, and was not as sensitive to sudden changes in the shared language as is the case with sociolinguistically fragmented and small minority communities.

Table 1 illustrates the relative chronology of the historical development of the Mordvinic languages and the influence of language contacts at its different stages.

Modern Erzya and Moksha	Intensive Russian influence Local contacts with Turkic languages
Early divergence between Erzya and Moksha	Local contacts between Mordvinic and Turkic languages Early Slavic influence
Proto-Mordvinic	Late Baltic influence
Pre-Mordvinic	Early contacts with Baltic and Iranian languages Proto-Indo-Iranian influence
Proto-Finno-Ugric (~ Proto-Uralic)	Early Proto-Indo-Iranian and Proto-Indo-European influence

Table 1. The influence of language contacts on the historical development of the Mordvinic languages.

We maintain that Proto-Mordvinic is a relatively late stage, a terminus post quem that preceded the diverging of the two modern Mordvinic languages in individual branches. Pre-Mordvinic, in turn, represents a period that separates Proto-Mordvinic from a shared proto-language with other Finno-Ugric languages, during which lexical and grammatical innovations are no longer shared with other Finno-Ugric languages (Erkki Itkonen 1971–72, 1981: 36–40; Grünthal 2007: 116). Thus, Proto-Mordvinic and Proto-Finno-Ugric are the two edges that distinguish between those two layers that can be established on the basis of comparative evidence.

As regards the current topic, the Baltic loanwords in Mordvinic, the etymological analysis below shows that it is possible that their age varies chronologically. However, in most cases those phonological changes that took place before Proto-Mordvinic have affected the Baltic loanwords just as they have in the case of old inherited vocabulary. Thus, it is often necessary to use the concept of Pre-Mordvinic in the reconstruction of phonological changes and individual etymologies.

In the analysis of possible Baltic loanwords in Mordvinic, the main point is that, as a rule, they share the main phonological innovations, such as the loss of long vowels, the vowel shift that is affected by the quality and stress of second-syllable vowel, and the rise of the opposition between voiced and voiceless plosives instead of geminate and single plosives. So far, the evidence of loanwords has been taken into account in the analysis of Mordvinic language history to some but not a very large extent. Erkki Itkonen (1971–72: 46), for instance, assumes that, on the one hand, E (*k*)šna, M šna ‘strap’, one of the oldest attested Baltic loanwords, demonstrates that the reduction of the first-syllable closed vowel followed by a stressed second-syllable open vowel could take place at a very early proto-language stage. In this case the development is parallel with that of E M *skal* ‘cow’ < **uskala* ‘cow’ (> Mari *uškal* id.). On the other hand, Erkki Itkonen (op. cit. 46) notes that the reduction of a closed vowel in the unstressed syllable occurs in words, such as Moksha M *krda* ‘time, occasion’ and

trva ‘lip’, with a restricted distribution in Mordvinic. (The forms presented in H. Paasonen’s *Mordwinisches Wörterbuch* are E *kirda*, M *kârda* (*krda* is not mentioned) and E *turva*, *torva*, M *târva*, *trva*, *turva* (MdWb 763–764, 2354).) Furthermore, the same change is attested in Russian loanwords, as demonstrated by E *života*, *živata*, M *švata*, *šžvota*, *živata* etc. (MdWb 2700). Consequently, the only thing that can be concluded on the relative age of Baltic loanwords is that they were adopted earlier than the reduction of the first-syllable vowel took place and, ultimately, the reduction of the unstressed vowel and the shift of the stress of the second-syllable vowel is not a very old phenomenon.

The phonological changes are so regular in the Mordvinic languages that phonological criteria can be used against incorrect hypotheses. Mordvinic E *ardoms*, *ardums*, M *ardâms* ‘drive; ride; trot’ (MdWb 59–61), for instance, resembles phonologically the Baltic word Lith. *ardýti* ~ Latv. *ārdīt* ‘separate, part, divide’ ((Fraenkel 1962–65: 15–16; Karulis 1992 I: 75)) but cannot be a Baltic loan for phonological reasons, if it were possible to explain the semantic difference. The expected Pre-Mordvinic correspondence of Proto-Baltic **ardī-* would be PreMd **arti*. This would lead to **ordōms*, as present-day *o* corresponds to PFU **a* in the Mordvinic word *šov* ‘clay’ while followed with *i* in the second syllable (< **savi* > Finnish *savi* id. etc. (SSA 3: 162; UEW 468)). In fact, this comparison is not very plausible semantically either. Moreover, the Mordvinic word has a more plausible alternative etymology, since Pre-Mordvinic **arta-* neatly corresponds to Indo-Iranian **arda-*, cf. Old Indian *árdati* ‘flow; make restless’, *ṛdāti* ‘scatter, split’ Old Indian (reduplicative present tense) *íy-ar-ti* ‘make moving’, Avesta *ar-* ‘make oneself move, arrive’ < PIE **er* (Pokorny 1959: 326–330).

There are several other Mordvinic words that were occasionally labelled as Baltic loanwords. If they have a better alternative etymology, such as E M *sod* ‘soot’ (MdWb 1999; cf. Joki 1973: 145 and Pareren 2008: 121–123) and are mentioned with relevant literature elsewhere, they will not be commented on here. These words are not included in the etymological list below, although some proposed etymologies deserve a note explaining the grounds on which they were refuted. Suffice it to bring a couple of examples, here.

Wälchli (1997: 310–311), for instance, proposes that M *kaldas* ‘(cattle) yard; (cattle) enclosure’ (MdWb 617–618) is a Baltic loanword. However, in MdWb (MdWb 617–618), M *kaldas* has the same entry as E *kardas* (see the list below). Secondly, the Latvian word *galds* ‘a chopped piece of wood, a cleft board; table’ does not semantically correspond to the Moksha Mordvin word at all. In semantic parallels, such as Lith. *núogalda* ‘(box) stall’, Latv. *aizgalds* ‘pen (for animals)’, the similarity is caused by a Latvian prefix and, consequently, is not a semantic property of the lexical stem. Finally, the word is a Russian loanword, cf. *kalda*, *kaldas* ‘(cattle) yard; (cattle) enclosure’ (Vasmer 1986 2: 166).

The comparison of E *lēj*, *l'ij*, M *l'äj*, *l'ej* ‘river, ravine’ (MdWb 1099–1100) with Lithuanian *l̄eti* ‘pour, spill’ etc., a random comparison suggested by Gordeyev (1967: 183), is not plausible on phonological and semantic grounds. No corresponding noun stem has been indicated in Baltic. An internal reconstruction of the Mordvinic word would suggest PreMd **läki* or **läji*. As a rule, the

word structure of the Baltic borrowings is clearly reflected in Mordvinic. As a topographic noun E *l'ej*, *l'ij*, M *läj*, *l'ej* ‘river, ravine’ is very widespread in the Mordvinic language area and it occurs frequently as the head of compound place names (Maticcsák 1995: 41–49).

5. Space and time of contacts between Mordvinic and Baltic

The prehistoric distribution of the Baltic languages in the upper flow of the rivers Dnepr, Dvina, Oka, and Moskva is well demonstrated in the light of place names. A more detailed analysis of the onomastic data, most notably the seminal work of Toporov and Trubačev (1962), gave a push to Russian dialectology and areal research. Less attention has been paid to areal contacts and the relationship between different languages.

The Finno-Ugric languages were presumably spoken on the eastern and northern side of the Baltic-speaking area. The evidence has been drawn mainly from place names and includes at least the Slavicized present-day oblasts of Jaroslavl', Kostroma, Ivanovo, and Vladimir that are repeatedly labeled as the prehistoric Merya area (Ahlgqvist 2006; Leont'ev 1996; Matveev 1996, 1998, 2001). In a larger perspective, the main water routes in Middle Russia consisted of a multiethnic network during the Late Iron Age. The Volga Bolgar republic was established during the 8th and 9th century A.D., which was followed by the Tatar Golden Ord and Slavic expansion. From a narrower viewpoint the contacts between Mordvinic and Baltic are probably just one example of early Metal Age and Iron Age areal contacts between local Finno-Ugric and Baltic populations.

The corpus investigated below consists of 37 etymologies. It includes both reconciled etymologies that were suggested earlier, and new etymologies. It includes loanwords that have a different value with respect to the evaluation of the chronology of the contacts between Mordvinic and Baltic languages, on the one hand, and western Finno-Ugric and Baltic, on the other hand. More generally speaking, the evidence of Baltic influence on the Finno-Ugric languages is most clearly demonstrated in Finnic, while the Saamic and Mordvinic languages do not have as many Baltic loanwords as found in the Finnic languages.

From an areal perspective, the contacts between Baltic and Finno-Ugric languages have been most intensive in the northeastern Baltic Sea area. The contacts between Southern Finnic (most notably Estonian and Livonian) and Baltic languages (mainly Latvian; Suhonen 1973, 1988; Vaba 1997, 2010) are the most recent stage in a long sequence of contacts beginning in the early Metal Age (Kallio 1998). In the Saamic and Mordvinic speaking areas, direct contacts with Baltic are more limited, as they ended before the beginning of documented history.

These language contacts also reflect the importance of foreign influence on prehistoric Finno-Ugric communities. The Baltic and especially the Germanic influence on the Finnic languages is considered much stronger than the

importance of contacts of Baltic and other prehistoric Indo-European varieties with Mordvinic (Posti 1953; Koivulehto 1999b; see also Kallio in this volume). To some extent this is also true of the influence of Germanic and Scandinavian varieties on Saamic (Aikio 2006; Qvigstad 1893). In comparison to these other groups, the early Finnic language community has been much more sensitive to foreign influence. There are probably several reasons for this. The population size, for instance, was likely quite small, especially with respect to the number of speakers of the Indo-European languages. The location in the vicinity of main traffic routes may also have intensified the degree of these contacts.

The assumption of shared Baltic borrowings between Saamic and Mordvinic is incorrect in the light of the investigated data. A small number of Baltic borrowings in Mordvinic were proposed to have cognates in Mari. However, most likely these words were not adopted from a shared proto-language, but instead later gained their present-day geographical distribution (See below, the discussion of the relationship between E *tóžań*, *tužań*, M *tožän*, *tožän*, *tožəm* ‘1000’ (MdWb 2411–2412) and Mari H *tažem*, M *tüžem*). In principle, the hypothesis on Baltic lexical influence in Mari is incorrectly motivated, as Mägiste (1959) emphasized already five decades ago. Every suggested Baltic loanword in Mari, altogether less than ten, has a better explanation and phonological rules that clearly show a different origin.

Historically, the etymologies below can be divided into two main groups according to their geographical distribution. A half (19 out of 36) are represented in Mordvinic only and do not have cognates in more western Finno-Ugric languages ((5) E *kardas* ‘yard’; (6) E M *karks* ‘belt’ etc.; (7) E *kerč*, *kerš*, *kärc*, M *kerdži*, *kerži*, *kärži*, *kerš*, *keřeš* ‘left’; (10) E *kšna*, *šna*, *kišna*, M *šna*, *š̄na* ‘strap’; (11) E *lango*, M *langa* ‘surface, cover; low’; (17) E *mukoro*, *mukura*, *mukor*, *nukur*, M *mâkâr*, *mukâr* ‘back’ etc.; (18) E *panst*, *panct*, M *pandâs*, *pandaz*, *panc* ‘bridle’; (19) E *pejel*, *pejil*, *päjel*, *pijel*, M *pejäl*, *pejel*, *pel* etc. ‘knife’; (20) E *penge*, M *pengä* ‘log, firewood’; (22) E *potmo*, *potno*, M *potma*, *potmâ* ‘inside; inner stomach’ etc.; (23) E *pusmo*, M *pusma*, *busma* ‘bunch, bundle’; (24) E *raške*, M *raškä* ‘relative, friend’ etc.; (26) E *rédams*, *rädams*, M *rädams* ‘notice’ etc.; (28) E M *rudas* etc. ‘dirt, mud’; (29) E *simeń*, M *śiməń* ‘tribe, family’; (32) E M *talaj* ‘recently’ etc.; (33) E *turtov*, *turto*, *tortov* ‘to; for’; (34) E *terédems*, *tärdéms*, *terédims*, *terégems*, M *terédäms* ‘call; invite’; (36) E *viŕ*, M *viŕ*, *viŕä* ‘Wald’). In principle, another half (17 out of 36) have etymological cognates in Finnic or in Finnic and Saamic, but about a half of them (8 out of 18) are phonologically ambiguous and cannot descend from a shared proto-language reconstruction with the corresponding word in Finnic ((4) E *inže*, M *inži* ‘guest’; (9) E *kodor*, M *kodâr*, *kodârkis* ‘(plant’s) stake’; (12) M *luv* ‘space between two fingers’; (14) E *lēpe*, M *lēpe* ‘alder’; (15) E *líja*, *ilá*, M *líjä*, *ilé*, *ilä* ‘another, else’; (21) E *puŕgińe*, *puŕgińi*, *pirǵeńe*, *piŕgińe*, *pirǵimä*, M *puŕgəńä*, *pə́rgəńä* ‘thunder’; (27) E *riśme*, M *riśmä* ‘chain; rope; string’; (31) E *šerže*, *šerže*, *šaržə-*, M *šarža*, *šarža* ‘grey hair’ etc.). The discrepancy in sound history suggests that these words are convergent, parallel borrowings. Finally, nine etymologies of the investigated 36 cases (9 out of 36) are historically identical with their Finnic

cognates and should be labeled as shared borrowings in terms of sound historical development. However, given that there are other parallel borrowings, the possibility of a convergence cannot be absolutely excluded ((1) E *al*, M *al* ‘egg’; (2) E *čonda*, *čando* ‘price; value’; (3) E *erke*, M *äř'kä*, *jäř'kä* etc. ‘lake, pond’; (8) E *kirda*, M *kârda* ‘turn; habit, manner’ etc.; (13) E *luvodems*, *lungidums*, M *lungâdâms*, *luvâdâms* ‘loosen’ etc.; (16) E M **mala* ‘next, surrounding’ etc.; (25) E *raško*, M *raška* ‘inner side of a corner’ etc.; (30) E *šenže*, *šeňš*, *šenš* ‘duck’; (35) E *tožań*, *túžań*, M *tožän*, *tožän*, *tožäm* ‘1000’).

Phonologically, the vocalism of the loanwords is important and shows that, actually, there are clearly two different layers in the Baltic loanwords of Mordvinic. Although the development of vocalism cannot be used as the decisive constraint in all etymologies, there are several cases that demonstrate the existence of two different layers. In the older layer ((1) E *al*, M *al* ‘egg’; (2) E *čonda*, *čando* ‘price; value’; (3) E *erke*, M *äř'kä*, *jäř'kä* etc. ‘lake, pond’; (8) E *kirda*, M *kârda* ‘turn; habit, manner; party, feast’; (9) E *kodor*, M *kodâr*, *kodârks* ‘stake, plant’s stake’; (10) E *kšna*, *šna*, (Šokša) *kišna*, M *šna*, *šâna* ‘strap’; E *lango*, M *langa* ‘surface, cover; low’; (20) E *penge*, M *pengä* ‘log, firewood’; (21) E *puřgińe*, *puřgińi*, *piřgeńe*, *piřgińe*, *piřgimä* etc., M *puřgäńä*, *pärgäńä* ‘thunder’; (22) E *potmo*, *potno*, M *potma*, *potmâ* ‘inside; inner stomach; bosom; bottom’; (34) E *terđems*, *tärđems*, *teřđims*, *terđems* etc., M *teřđâms* ‘call; invite’; (35) E *tožań*, *túžań*, M *tožän*, *tožän*, *tožäm* ‘1000’; (36) E *viř*, M *vir*, *virä* ‘forest’), the development of the vocalism is identical with that of inherited Finno-Ugric words but the geographical distribution of the Baltic loanwords is much more limited. Historically, these words were borrowed into Pre-Mordvinic, a prehistoric predecessor of the modern Mordvinic languages that borrowed words from other local Indo-European languages as well, most notably Indo-Iranian and Iranian. The words that represent the more recent layer ((4) E *inže*, M *inži* ‘guest’; (13) E *luvodems*, *lungidums* etc., M *lungâdâms*, *luvâdâms* ‘loosen, become uneven, come out (skin)’ etc.; (14) E *lepe*, M *lepe* ‘alder’; (15) E *lijä*, *iļa*, M *lijä*, *iļe*, *ilä* ‘another, else’; (17) E *mukoro*, *mukura*, *mukor*, *nukur* ~ M *mâkâr*, *mukâr* ‘back, bottom, rump; ass’; (23) E *pusmo*, M *pusma*, *busma* ‘bunch, bundle’; (26) E *ředâms*, *räđâms*, M *ráđâms* ‘notice, perceive, become aware; look for; choose’; (27) E *říšme*, M *řísmä* ‘chain; rope; string, ribbon’; (28) E *rudas*, *urdas*, *rudaz*, M *rudas*, *ärdaś*, *ardas*, *urdas*, *urdaz* ‘dirt, mud’; (29) E *simeń*, M *śiməń* ‘tribe, family’; (33) E *turtov*, *tortov*, *turtuv*, *turto(n)* [Postp.] ‘to; for’) were borrowed into Proto-Mordvinic in which all important vowel changes characteristic of both Erzya and Moksha had already taken place (Bartens 1999: 53–67; Erkki Itkonen 1971–72).

The existence of two different phonological layers proves that, despite a relatively small corpus of identified Baltic loanwords in the Mordvinic languages, the language contacts between the Baltic and Mordvinic languages were continuous over an extended period of time. Most likely, these were contacts between geographically adjacent or even neighboring languages. The more recent layer representing Proto-Mordvinic was not adopted much before the time of the first historical documents identifying the Baltic and Finno-Ugric tribes in the Middle

Volga region. The assumption of contacts during the late Iron Age could therefore be compared with archaeological cultures of that era.

It is much more difficult to define the age of the older layer, borrowed into Pre-Mordvinic. As mentioned above, Carpelan and Parpolo (2001) assume a long-time continuity in contacts between Finno-Ugric and Indo-European languages in the Middle Volga area. The chronological ambiguity of the Baltic loanwords in Mordvinic supports this assumption, although the analysed empirical data do not allow any further conclusions on their earliest possible age and the geographical area(s). However, these contacts clearly precede the emergence of the contacts with the Slavic and Turkic communities in the area.

Conclusively, the small number of attested etymologies indicates that, after all, the contacts between Baltic and Mordvinic were not intensive. There is no indication, for instance, that the Baltic influence would have affected the grammatical system or typology of Mordvinic. It is only the ubiquitous Russian influence that starts strongly interfering in the Mordvinic languages much later. From the sociohistorical viewpoint the language contacts between early Baltic and Mordvinic varieties show that at the time of Proto-Mordvinic and Pre-Mordvinic the language community was relatively strong and the influence of language contacts were not as intensive as later.

6. Baltic loanwords in Mordvinic

E	= Erzya	ORus.	= Old Russian
Fi.	= Finnish	PFU	= Proto-Finno-Ugric
M	= Moksha	PIE	= Proto-Indo-European
Mari H	= Hill Mari	Pl.	= Plural
Mari M	= Meadow Mari	PM	= Proto-Mordvinic
Md.	= Mordvinic	PreMd	= Pre-Mordvinic
Latv.	= Latvian	Russ.	= Russian
Lith.	= Lithuanian	SaaLu	= Lule Saami
OPr.	= Old Prussian	Ukr.	= Ukrainian

- (1) E **al**, M **al** ‘egg’ (MdWb 20–22) (~ Fi. *ola* ‘flint’ (not attested in southern Finnic; SSA 2: 262–263))
 < PreMd *(*v*)*ōli*

An identical form with the Baltic origin *(*v*)*ōla* was not possible in Pre-Mordvinic because a first-syllable long vowel could only be combined with a second-syllable non-open vowel. Cf. Md E M *nal* ‘arrow’ (< **nōli*) and E M *san* ‘vein, vessel; tendon’ (< **sōni*).

< (Proto-)Baltic *(*v*)*ōlā*, Lith. *uolà* ‘rock; limestone; whetstone’, *uolis* ‘flint’, Latv. *ōla* ‘a small round stone; flint, rock; egg’. The origin of the Baltic stem is not clear. (Bartens 1999: 55; Fraenkel 2: 1166; Grünthal 2000; Joki 1973: 294; Koivulehto 2000: 118–119, 2001: 47). The loss of **v*- in front of a first syllable *o* is a shared innovation in Finnic and Erzya, but not in Moksha in all

cases (Bartens 1999: 45–46). However, this change occurs very easily as the rise of secondary *v-* in front of a rounded vowel. Both phenomena are frequent in the Finno-Ugric languages. Furthermore, data from the Mordvinic and Baltic languages do not suggest the reconstruction of a word-initial *v-* as Koivulehto suggests on the basis of an assumed earlier history of the word.

- (2) E *čonda*, *čando* ‘price; value’ (MdWb 207) (~ Fi. *hintta* id. (attested in all Finnic languages; SSA 1: 165))
 < PreMd **šinta* ‘price’
 < (Proto-)Baltic **šimta*-; cf. Lith. *šimtas* ‘100; much, a lot of’, Latv. *simts* ‘100’ (Uotila 1990: 1 137–139). The Mordvinic word is attested in two Erzya dialects only. The correct reconstruction for E *čando* is **šanta* that cannot be connected with the given Baltic stem. Thus, the variant *čonda* must be considered as the more conservative one. It is phonologically plausible as phonological parallels show E M *oža* ‘sleeve’ (< **šiša*; cf. Fi. *hiha* id.). The historical first-syllable *i* has changed to Md. *o* if the second-syllable vowel was **a*. In Erzya a word-initial *š-* was preserved, as a rule, but it must be assumed that in this word it was treated differently. The cluster *-md-* is possible only in later derivations such as E *čamdoms*, M *šamdāms* ‘make empty’ (< E *čamoms*, M *šamāms* ‘become empty’ (MdWb 206)).
- (3) E *erke*, M *är'kä, jär'kä* etc. ‘lake, pond’ (MdWb 379) (~ Fi. *järvi* (attested in all Finnic languages) ~ SaaN *jávri* ~ Ma. W *jär*, E *jer* id. (UEW 633; SSA 1 259))
 < Proto-Mordvinic **järkä*
 < PreMd**jär(v)i*
 ? < Baltic. **jaurā* / **jūrā*; cf. Lith. *jáura* (Pl. *jáuros*) ‘marsh, peatsoil’, *jaurùs* ‘swampy, marshy’; cf. Lith. *júra* ~ Latv. *jūra* ‘sea, lake’ (Nuutinen 1989). The comparison was made already in the 1920s (Liukkonen 1999: 9). Basically, the Pre-Mordvinic front vowel **ä* cannot originate from a back vowel. Thus, the etymology is possible only if Baltic **ja-* was substituted with Pre-Mordvinic **jä-* as Nuutinen assumes for Finnic. The question is why was the first syllable not substituted with **jav-* that should have resulted in Md. **jov-/i*. The loss of **v-* happened in E *šuro*, *šura*, M *šura* ‘horn’ (cf. Fi. *sarvi* id.) as well. Viitso (2008: 242) notes that the Livonian (in Courland) variant *jōra* ‘lake’ (: *jarrō* in the nominative and illative singular) does not implicate the earlier existence of a front vowel stem but it could be derived from *jar-* with a stem vowel *-a-* as well deriving from **jarva*. However, the Salaca Livonian form *järu* (Winkler & Pajusalu 2009: 73) seems to be more conservative. In Courland Livonian the loss of the consonant cluster *-rv-* has lead to the change of the stem vowel to *-a-* and a metaphonic change in the first-syllable vowel. Likewise, the difference is seen in Courland Livonian *tōra* ‘tar’, Salaca Livonian *türv* id. (< **terva*) (Winkler & Pajusalu 2009: 206), in which the latter one has preserved the quality of the historical first-syllable front vowel **e* whereas in Courland Livonian there is no

trace left of the earlier front vowel. However, in this case the western dialects of Courland Livonian have preserved a front vowel as well, as demonstrated in *tīra*, *tūra* id. (LWb 416).

In North Russian toponymy there are several affixes resembling the presented appellative, such as *jar-*, *jagr-*, *jahr* and *javr(o)-* resembling either the Finnic or the Saamic and Baltic words mentioned (Matveev 2004: 314, 329). Saarikivi (2004: 215–216) notes that the relationship between this name pattern and the words attested in various Finno-Ugric languages is not fully clear.

- (4) E *inže*, M *inži* ‘guest’ (MdWb 460–461) (? ~ Fi. *ihminen* ‘man’ etc. (attested in all Finnic languages; SSA 1 221, UEW 627))
 < PreMd **inši(mi)*
 < (Proto-)Baltic **inžinmī*; cf. Lith. *izymī* ‘(well-)known’ (Liukkonen (1999: 61–62). Koivulehto (1991: 79) suggests an earlier Proto-Indo-European etymology for Finnic and Mordvinic (< Proto-Indo-European *ǵ̥n̥h₂-). Koponen points out that in fact, the Finnic word has numerous variants and that it is difficult to connect all the variants with one single proto-language stem. According to him (Koponen 2000: 103), the various Finnic words derive from two historically distinct word types, namely (1) **imeh-(n)inen/no* or (2) *inVhm-(V)inen/-oi*.

As regards the Mordvinic word, *e-* would be the expected descendant of Pre-Mordvinic or Proto-Finno-Ugric first-syllable *i-* with a front vowel in the second syllable, as in *kev* ‘stone’ (< **kivi*). Thus, assuming that, in principle, the loanword etymology is correct, the Mordvinic and Finnic words must be of different origin although they look like etymological cognates. This supports the assumption of a Baltic origin and suggests that actually the Baltic borrowings in Mordvinic must represent two different layers and the given word represents the later one. Alternatively, Pre-Mordvinic **inši* would be a possible reconstruction of the Mordvinic words, but there is no evidence on the Baltic side why this should be assumed. (Cf. also E *kšna*, *šna*, M *šna*, *šāna* below.)

- (5) E *kardas* ‘yard’ (MdWb 617–618)
 < ProtoMd **kardas*
 < PreMd **kartas*
 < (Proto-)Baltic **gardas*; cf. Lith. *gařdas* ‘pen, paddock, fold (for cattle)’; cf. Old Church Slavonic *gradъ* ‘castle, town, yard’, Russ. *gorod* ‘town’ etc. (Thomsen 1890: 170–171; Joki 1973: 269–270; SSA 318). The reconstruction **kartas* with a voiceless stop *-t- is more likely in Pre-Mordvinic than **kardas* because presumably the early Pre-Mordvinic variants did not have voiced plosives. Nevertheless, the rise of the opposition between voiceless and voiced plosives (*p* : *b*, *t* : *d*, *k* : *g*) and the loss of the quantitative opposition between geminate and single plosives (*pp* : *p*, *tt* : *t*, *kk* : *k*) is one of the most characteristic changes in the phonological system of Pre-Mordvinic. Thus, the chronology of language contacts and adoption of loanwords are of special importance for the reconstruction of phonological changes in Mordvinic.

A parallel Baltic etymology has been suggested for E *kardo*, *karda*, M *karda* ‘cowshed, horse stable’ (MdWb 619–620) (? < PreMd **karta*) based on the (Proto-)Baltic reconstruction **gardā*; cf. Latv. dial. *gārds*, *gārda* ‘enclosure for beef cattle (especially for pigs)’ (Wälchli 1997: 307). The assumption originates from Thomsen (1890: 170–171), who erroneously connected this word with the same Baltic origin as Erzya *kardas*. The lexical variation attested in Latvian dialects is caused by a different origin: *gārds* (< **gardas*), *gārda* (**gardā*) ‘enclosure for beef cattle (especially for pigs)’ (Petri Kallio, personal communication).

There is an alternative etymology suggesting that the Mordvinic word is borrowed from Chuvash *karDa* ‘(cattle) enclosure (on the field)’ (MdWb 619; Räsänen 1946: 196) that has cognates in other Turkic languages and has been borrowed into several other Finno-Ugric languages (Ègorov 1964: 91). In Chuvash the plosive *t* is voiced as a lenis in an intervocalic and post sonoric position, which explains the voiced plosive *-d-* in Mordvinic. Those dialects in which the Erzya *kardo* (also *alašań kardu* ‘horse stable’; E:Mar Atr Večk Hl; for abbreviations, see MdWb LXXXVII–XCIX and LVIII) is attested are spoken in the vicinity of the Chuvash language area. Given the later age of contacts with Chuvash and the more exact semantic correspondence, the assumed Chuvash loan etymology is more likely. However, it must be noted that the Mordvinic word is attested in more western dialects as well, with a greater distance to the geographical area of Chuvash.

- (6) E M ***karks*** ‘belt; the straw with which the sheaf is bound; the hip thread of women’ (MdWb 622–625)
 < PreMd **kar-ksi*
 < (Proto-)Baltic **kar-*; cf. Lith. *kariù*, *kárti* ‘hang with a strong string’, Latv. *karu*, *kārt* ‘hang’; Lith. *pakara* ‘coat rack’, Latv. *pakars* ‘(suspension) hook’, OPr. *paccaris* ‘strap’ < PIE **kōr-* ‘hang’ (**ker-*) (Karulis 1992 I: 386; Pokorny 1959: 573). The earlier comparison of E M *karks* with Finnish *kaari* ‘bow’ etc. is not correct (SSA 1: 265; UEW 1988: 216).

The Mordvinic word is a derivative, as are the vast majority of Mordvinic words ending in *-ks*. In the Reverse Dictionary of Mordvinic there are more than 2.500 words that end in *-ks* (Luutonen & al. 2004: 298–321).] However, very few of them, considerably less than ten percent, are not transparent denominal or deverbal derivatives. Three of them belong to the old inherited Finno-Ugric stock namely E *pešks*, M *päšks* ‘hazel(nut)’ ~ Finnish *pähkinä* id. etc. (SSA 2 455; UEW 726), E M *soks* ‘ski’ ~ Finnish *suksi* id. etc. (SSA 3 210; UEW 450) and E M *vaks* ‘span etc.’. In the two last ones, *-ks* is a descendant of the word-internal consonant cluster *-ks-* whereas in E *pešks*, M *päšks*, *-ks* is a derivative suffix. In the word E M *śokś* ‘autumn’ (~ Finnish *syksy* id. etc.) the sibilant is palatal and, thus, the word-final *-kś* is not identical with the derivative suffix *-ks*. Etymologically, several words ending in *-ks* are actually derivations, although in present-day language they may lack the underived stem. Thus, there are several lexicalised derivations, such as E M *ponks(t)*, *pojs* (MdWb 1747–1748), which

is etymologically a derivation of E M *ponams* ‘twist, twine’, but one which cannot be considered as productive any more. In addition to E M *karks* ‘belt etc.’, E *pešks*, M *päšks* ‘hazel(nut)’, and E M *soks* ‘ski’ the following Mordvinic one-syllable nouns end in *-ks* and are not transparent and etymologically unambiguous derivations: E *onks*, *onkst* ~ M *unks*, *uns* ‘measure; length; weight; pood’, E M *piks* ‘rope’, E *seks*, *sekše* ~ M *sexks*, *seksa* ~ *seksâ* ‘dirt’, E M *suks* ‘worm, maggot’, E *šenks*, (Atr) *šeňs* ~ M *šänks*, *šänks* ‘stork’, E M *vaňks* ‘clean’. Furthermore, there is at least one two-syllable word ending in *-ks*, namely E *alkuks* ~ M *afkâlks* ‘really, indeed; true’ that is not a derivation of any other Mordvin word.

This suggested etymology assumes that the borrowing was not preserved as a verb but a noun derivative. There is no word stem without the noun derivative suffix *-ks*, although most derived nouns with the suffix *-ks* are productive forms cf. *jovks* ‘fairy tale’ ← *jovtams* ‘tell’. However, there are other loanwords, such as E *salmuks*, *salmoks*, M *salmâks* ‘needle’ that do not have an underived cognate of the borrowed stem either (< Slavic **solmā*). Finally, it must be noted that PreMd **kari-* would correspond to E *kor'*. So, it must be assumed that this borrowing belongs to the later layer of Baltic loanwords in Mordvinic.

- (7) E *kerč*, *kerš*, *käürč*, M *kerdži*, *kerži*, *kärži*, *kerš*, *keřeš* etc. ‘left’ (MdWb 714–715)

< PreMd **kerši*

< (Proto-)Baltic **kreišas*; cf. Latv. *kreiss* ‘left’, Lith. *kaĩras*, *kaĩrùs*, *kaĩrias*, *kairýs* ‘left’ ~ Latv. *ķeĩris*, *krei̯lis*. Toporov and Trubachev (1962: 247–248) suggested incorrectly that the Mordvinic word was borrowed from a parallel Baltic stem **kurša-* (> Lith. *kuršas* ‘Latvian, inhabitant of Curonia’) that is not possible for phonological and semantic reasons. In the given etymology the word-initial consonant cluster was not possible in Pre-Mordvinic.

Word-initial consonant clusters of Indo-European loanwords were frequently replaced with single consonants in Finno-Ugric languages. The other substitution type is represented in words in which a metathesis split the consonant cluster. This has happened in quite recent borrowings and Russian loans in Mordvinic, such as M *šerba*, *žerba* ‘lot’ < Rus. *žrebij* id. (MdWb 2227–8). Another example is Finnish *kyrsä* (archaic) ‘bread’, Veps *kürz* ‘pancake’ that is traditionally considered as a cognate of Mordvinic *kši* ‘bread’ (SSA 1: 466; UEW 679). Koivulehto (1999a: 212) suggests that the word **kiürsä* is an Indo-European loanword that originates from IE/Balto-Slavic **krusá* and labels it as a possible Pre-Slavic loanword, because the word is preserved in the Slavic languages only (**krusá* > **krušá* > > Early Proto-Slavic **krušá* > Late Proto-Slavic **kruchá* > Russian *krohá* ‘(bread)crumb’. However, the derivation of Mordvinic *kši* from **kiürsä* is not without problems, because **s* should be represented as *-s-* instead of *-š-*. Consequently, it seems possible that the Finnic and Mordvinic words are distinct loans from an early (Balto-)Slavic variety.

- (8) E *kirda*, M *kârda* ‘turn; habit, manner; party, feast’ etc. (MdWb 763–764)
 (~ Fi. *kerta* etc. (attested in all Finnic languages; SSA 1 347–348; UEW 659))

< ProtoMd **kirda*

< PreMd **kerta*

< (Proto-)Baltic **kerdā* f.: OPr *kērdan* (SG.ACC), *kerdan* ‘time’, Lith. **kerda* ‘turn, order’ ~ Latv. *kārta* ‘layer; turn’. This etymology shows that, as in the Finnic languages, *e-a* stems were adopted into Mordvinic in connection with Baltic loanwords and first-syllable *e* was not sensitive to palatal harmony rules. The original second-syllable **a* was preserved in Proto-Mordvinic, and hence was treated differently than second-syllable **ä* of inherited Finno-Ugric words. In words such as E *kize* ‘summer’ (~ Fi. *kesä*) and E *pize* ‘nest’ (~ Fi. *pesä*) the change **ä* > *e* took place in the second syllable. Thus, PreMd **kertä* following the palatal harmony between front vowels should have led to Erzya **kirde*. Nevertheless, this is not the case and, consequently, a PreMd *e-a* combination can be assumed.

Recently, Parpolo (2010: 311) has suggested that the Finno-Ugric word could be a much older loan originating from Proto-Aryan **krt* ‘time, turn’. This, however, would mean that the *e-a* stems in the Finnic languages, and Mordvinic, are much older than is usually assumed. It is assumed that this stem type *e-a* was adopted in the Finnic languages parallel with the early Baltic loanwords. The assumption that the bimorphic adverbs Hill Mari *pülägerdä* ‘long ago’ and Meadow Mari *šukerte* etc. ‘long ago’ (TschWb 573, 729) would include the same Baltic word is incorrect. As demonstrated by Mägiste (1959: 172–174) the Mari word has a more plausible explanation based on the grammaticalisation and suffixation of a verbal phrase consisting of an adverb and the verb Hill Mari *ertäš*, Meadow Mari *ertaš*.

- (9) E *kodor*, M *kodâr*, *kodârks* ‘stake, plant’s stake’ (? ~ Fi. *ketara* ‘stake of sledge (sleigh)’ etc. (attested in most Finnic languages including southern varieties; SSA 1 351))

? < PreMd **kitara*

? < (Proto-)Baltic, cf. Lith. *keterà*, *kētaras*, *sketerà* ‘withers of a horse; ridge’, *sketers* ‘roof ridge; a stick at thatched roof’. The etymology is phonologically and semantically defective but, nevertheless, not completely impossible. Phonologically, a labial vowel and a reconstruction such as **kotira*, **kutara* or **kutira* is historically more likely but none of these can be derived from the Baltic stem. Furthermore, PreMd **e* would more likely correspond to Baltic **e* as E *kirda*, M *kârda* above. In *i-a* stems PreMd **i* > changed to Proto-Mordvinic **o* as in **sita-* > E *sodo-*, M *sodâ* ‘bind’ (Bartens 1999: 56; Erkki Itkonen 1946: 301), which would explain the development from the suggested Pre-Mordvinic to Mordvinic. However, this hypothesis still does not explain why the Baltic first-syllable **e* should have been replaced with **i* in Pre-Mordvinic.

- (10) E *kšna*, *šna*, (Šokša) *kišna*, M *šna*, *šđna* ‘strap’ (MdWb 909) (~ Fi. *hihna* id. (attested in all Finnic languages) ~ ?? Ma. H *šəštə*, M *šüštö* ‘strap; tanner leather’ (SSA 1: 161; UEW 786))

< PreMd **šikšna*

< (Proto-)Baltic **šikšnā*; cf. Lith. *šikšnà* ‘leather; strap’, Latv. *siksna* ‘strap’ (Thomsen 1890: 223). As in the case of E *inže*, M *inži* ‘guest’ (cf. above) the way (Proto-)Baltic **i* is manifested in Mordvinic is different from the old inherited Finno-Ugric words and one would expect that in *i-a* stems the first-syllable **i* changed to *o* (Bartens 1999: 56). Thus, if the borrowing belonged to the same chronological layer with the inherited vocabulary, the expected present-day form in Mordvinic would be **šokšna*. Consequently, the phonological evidence suggests that the given word was borrowed separately into Finnic and Mordvinic instead of into a shared proto-language. The adoption of Baltic loanwords in Mordvinic is a chronological terminus ante quem that distinguishes them from those sound changes that influenced earlier vocabulary.

The comparison of the quoted Mari word with the Finnic and Mordvinic words is ambiguous, because the labial vowel *ü* cannot descend from **i* in an illabial context. Furthermore, in Mari the consonant cluster *št* descends from an identical proto-language cluster *št* as in *jüštö* ‘cold’ (~ Finnish *jä(ä)htyä*, Estonian *jähtuma* ‘cool’ (verb)) and *tošto* ‘old’ (~ Md E *tašto*, E M *tašta*, M *taštə* id.). More generally speaking, there are very few Mari words that are supposed to be Baltic borrowings. None of these etymologies is plausible (Mägiste 1959). Thus, the adoption of these words did not happen during a shared proto-language, instead the given words were borrowed from a different source or have a different etymology and later gained their present-day geographical distribution. (See below, the discussion of the relationship between E *tožań*, *tužań*, M *tožän*, *tožän*, *tožəm* ‘1000’ (MdWb 2411–2412) and Mari H *təžem*, M *tiüzem*.)

- (11) E *lango*, M *langa* ‘surface, cover; low’ (MdWb 1009–1021)

< PreMd **lanka*

< (Proto-)Baltic **lankā*, cf. Lith. *lankà* ‘field, lowland; marsh; valley; low, flat surface’ ~ Latv. *lañka* ‘low, flat surface’; big low field’ etc. (Wälchli 1997: 316–317).

Phonologically, the etymology is fully plausible. Functionally, the Mordvinic word is grammatically more specialised because it is mainly used as a postposition that is inflected in local cases (E *lango* : *langs* ‘(up)on [ILL]’ : *langso* ‘(up)on [INE]’ : *langsto* ‘(up)on [ELA]’ : *langov* ‘(up)on [LAT]’ : *langa* ‘(up)on [PROL]’; MdWb 1009–1019). However, it can be assumed that the original meaning of the Pre-Mordvinic word **lanka* was ‘surface’. There are compound nouns that support this hypothesis and show how the word defines the indicated object: E *čalgamo-lango*, M *žalgaa-langa* ‘step’, E *kalmo-lango*, M *kalma-langa* ‘cemetery’, E *kaš-lango* ‘place above the stove’ etc.

- (12) M *luv* ‘space between two fingers’ (MdWb 1085–1087) (~ Fi. *loma* ‘gap; break; holiday etc.’ (attested in Karelian but not in other Finnic languages)
~ SaaN *loapmi*, *loapmu* ‘space (between something), open space, chink; valley’ ~ ? Mari (Hill) *lo* ‘space (between something)’, *loštâ* ‘inside’)
? < PreMd **loma*
? < (Proto-)Baltic **lōmā* (~ **lāmā*), cf. Lith. *lomà*, *lōmas* ‘hole, hollow’ ~ Latv. *lāma* id. etc.; the Baltic words are etymologically cognate with Lith. *lūoma* ‘orbit (of eye)’ ~ Latv. *luōma* ‘layer, turn, time’ ((Fraenkel 1962–65: 385; Sammallahti 1977: 124; SSA 2: 90). Phonologically and semantically the etymology is possible. There are other Mordvinic words such as E M *lov* ‘snow’ (~ Fi. *lumi* id.), E *čovar*, M *šovar* ‘mortar’ (~ Fi. *huhmar*) and E *suv* ‘fog’ (~ Fi. *sumu*) in which the change *-m- > -v- took place after a labial vowel.

However, the plausibility of the etymology is not as clear in the light of the geographical distribution of the Mordvinic word. It is attested in one local Moksha dialect solely in the oblast of Penza. In Heikki Paasonen’s Mordwinisches Wörterbuch the authors refer to the derivational relationship between *luv^l* : *luvodems* ‘loosen, scale (off), peel off’. The word E M *luv^l* ‘number, order’ etc. has many variants. It is widely attested in both Erzya and Moksha dialects and has several meanings, presumably semantic derivations of the original one that etymologically corresponds to Finnish *luku* ‘number, order, chapter’ and *lukea* ‘read’ with cognates in many other Finno-Ugric languages (SSA 2 100–102; UEW 253). Here the point is that according to Mordwinisches Wörterbuch, in the Moksha dialects of Penza the word *luv^l* has the meaning ‘the place in the warp or hair in which the yarn is attached’ (MdWb 1081). It is obvious that that the examined Moksha word *luv* ‘space between two fingers’ that is presented as *luv²* in MdWb is connected with *luv^l* and its semantic properties. This makes the suggested Baltic origin unlikely.

The Mari word mentioned above and quoted in etymological dictionaries is phonologically more problematic because in monosyllabic words the word-final -m was typically maintained in modern varieties after apocope in historically disyllabic words, such as Mari *lum* ‘snow’ (~ Finnish *lumi* id.). The word *lo* ‘space (between something)’ is attested as a noun in Hill Mari (western Mari) but as a postposition it occurs in the whole Mari language area in Meadow Mari, the northeastern and eastern dialects as well with a first-syllable *u* as in *lu-* : *lugâč* ‘between, in the middle of, suddenly’ (SMJa 3: 408; TschWb 349). The inflection of the postposition *lu* is presented already by Szilasi (1901: 116) as follows: *lu-* : *lušto* ‘between, beside [LOC]’ : *lueš* ‘between, beside [LAT]’ : *lugâč* ‘between, beside [ABL]’. The listed Finnish, Mordvinic, and Mari words are presented as etymological cognates in UEW (692). However, this comparison has some problems. Considering the Finnish word as a Baltic loanword decreases the plausibility of its common origin with the suggested Moksha, Mordvin, and Mari word, which shows that the grammaticalisation process should be analysed in more detail to reconsider the given etymology.

- (13) E *luvodems*, *lungidums* etc., M *lungâdâms*, *luvâdâms* ‘loosen, become uneven; peel’ etc. (MdWb 1085–1086) (~ Fi. *lunka* ‘loosening bark’ (not attested in other Finnic languages) ~ SaaN *loggut* jne. ‘tear bark; strip the turf’ (SSA 2 103; UEW does not present this comparison))
? < PreMd **lunka*-
< (Proto-)Baltic **lunka*-, cf. Lith. *lùnkas* ‘bast’, OPr. *lunkan*, Latv. *lūks* id. (SSA 2 103)

The proposed loanword etymology was originally suggested for Md E *lenga*, M *lengä* ‘bast’ (MdWb 1110–1112; Paasonen 1953 [1909]: 89), which, however, is not phonologically possible. The modified version presented in SSA has some crucial points that must be discussed in more detail. Firstly, the Mordvinic word is a verb derivation that does not have a transparent underived stem. In Heikki Paasonens Mordwinisches Wörterbuch (MdWb 1085–1086) the Mordvinic verb is presented as a subentry of *luv* (see above). However, the verbs with *-ng-* cannot be derived from it as the consonant cluster **nk* was preserved as *ng* in Mordvinic (Bartens 1999: 49). Secondly, the etymological cognate in Finnish is a noun and it is not attested in other Finnic languages. The Saamic cognate word is a verb, but the Baltic stem is a noun. Thirdly, in inherited Finno-Ugric words first-syllable **u* is regularly represented as *o* in present-day Mordvinic, as in E M *moda* ‘soil’ (< **mota*), E M *tol* ‘fire’ (< **tuli*) (Bartens 1999: 55; Bełczki 1988: 320; Erkki Itkonen 1946: 300–302). Conceivably, one would expect a Pre-Mordvinic **lonka*- as Koponen (1988: 93) implicitly assumes or **lûnki*- that, nevertheless, cannot be the historical proto-forms of the Finnic and Saamic words (cf. UEW 256 also finds this comparison suspect). Koponen considers it possible that the Finnish word was borrowed from Saamic.

The Baltic etymology is possible, if one assumes that the loanword was borrowed distinctly into Saamic (Finnic) and Mordvinic. Otherwise one must assume that there was a relatively late common proto-language period between the Finnic (Saamic) and Mordvinic languages during which the contacts took place. Furthermore, one has to assume that a (Proto-)Baltic noun stem was borrowed as a verb derivation into Mordvinic. Hallap (2000: 101–126) bridges several allophonic derivation suffixes that are productive and partly allophonic in the Mordvinic languages. The list includes both transitive and intransitive de-verbal and denominal derivations, of which some lend plausible support to the assumption that the given Mordvinic word could be historically a denominal borrowing: E *pejdems*, M *pejedâms* ‘laugh’ ← E M *pej* ‘tooth’, E *lemdâms*, M *lemdâms* ‘call, name’ ← E M *lém* ‘name’. Furthermore, similar derivations have been made of onomatopoetic words or interjections such as E *uhadâms* ‘groan’ ← *uh* ‘ugh’ and E *skokadâms* ‘jump’ ← Russian *skok!* ‘whoops’ which shows that the derivation type was used to adopt borrowings in Mordvinic as verbs. The parallel suffix *-*da* was used to adopt the word E *tolkundâms* ‘bellow, sway, wave’ ← Turkic *tolkun* ‘wave’. Nevertheless, the etymology would be more plausible, if there were a noun stem corresponding to the Baltic origin in Mordvinic as well.

As regards Md E *lēnge*, M *lēngä* ‘bast’, the point Mägiste (1962) makes is completely valid. There is no reason to consider this word as a Baltic loanword but the Mordvinic cognate of Finnish *niini* ‘bast’ (attested in all Finnic languages), Mari *ni* ‘bast (of young linden)’, Udmurt *níń*, Komi *níń* id. Both SSA (SSA 2: 218) and UEW (707) refute this comparison without explaining why this should be done. The only phonological problem is with the change PFU **l*> Mordvinic *e* but as Mägiste notes, this is an exception that proves the rule. As in the case of Finnish *nimi* ‘name’ ~ MdE *lēm* with cognates in all Uralic languages (SSA 2: 222; UEW 305), the Mordvinic *l* corresponds to a dental nasal *n* ~ *ń*. The sound change is most likely a result of a phonological dissimilation, possibly conditioned by a one-syllable stem in the two Mordvinic examples.

- (14) E *lepe*, M *lepe* ‘alder’ (MdWb 1112) (~ Fi. *leppä* id. (attested in the whole Finnic language area; SSA 2 64–65; UEW 689))

< PreMd **leppi* ~ **leppä*
 < (Proto-)Baltic **leipā*, cf. Latv. *liepa*, Lith. *liepa*, OPr. *leipa* ‘lime, linden’ (Sammallahti 1977: 123–124). The Saamic word SaaN *leaibi* ‘alder; blood’ is a distinct loan from Baltic. Likewise, it must be assumed that so is the Mordvinic. In inherited Finno-Ugric vocabulary the vocalism in reconstructions such as **leppä* should be met with Mordvinic **līpe*. Furthermore, as Kallio (2008: 273–274) shows, (Proto-)Balto-Slavic diphthongs usually appear as diphthongs in the Finnic and Saamic languages. The intervocalic plosive -*p*- in Mordvinic either descends from a geminate -*pp*- as in E *sepe*, M *säpä* ‘bile’ < **säppä* (Bartens 1999: 40) or the loan is more recent than the restructuring of the plosive system. In Proto-Mordvinic, the quantitative correlation between short and long geminates was replaced with a qualitative opposition between voiceless and voiced plosives (Bartens 1999: 36–41, Keresztes 1987: 58–68). The phonological details need the evidence of parallel etymologies with a similar phonological structure.

- (15) E *lijä*, *il'a*, M *lijä*, *il'e*, *ilä* ‘another, else’ (MdWb 1125–1127)

< Proto-Md **lijä*
 < ? PreMd < **lika* (~ **līka*)
 < (Proto-)Baltic; cf. Lith. *liēkas* ‘odd, extra, too much’, *līkis* ‘surplus’, Latv. *lieks* ‘too much, extra, unnecessary’ (SSA 2: 73; Thomsen 1890: 195–196)

Despite the similarity between the Mordvinic word and Finnish *liika* ‘too much; odd etc.’ with cognates in all other Finnic languages, the etymological dictionaries have not considered the Finnic and Mordvinic words as etymological cognates (SSA 2: 73; UEW; likewise Erkki Itkonen 1946: 302–303). However, as several other etymologies in this list demonstrate, many Baltic loanwords of the Mordvinic languages have not participated in those sound changes that affected inherited Finno-Ugric words. It seems that those few cases that have a parallel word in the Finnic languages, must have been borrowed separately in two distinct areas or there used to be a connection between Finnic and Mordvinic speaking areas after the unity broke up. Assuming a shared origin of the

Mordvinic and Finnic words, the correct reconstruction in Pre-Mordvinic would be **līki* sharing the characteristics of inherited Finno-Ugric vocabulary such as Md. E *vijems*, M *vijəms* ‘take, bring, return’ (< *vīke-). However, in this case the expected form in Erzya would be **līje*. Thus, if the Mordvinic word is a Baltic borrowing, it must be a convergent borrowing.

From a phonological point of view there is a discrepancy between the Erzya and Moksha forms. Erzya refers to a second-syllable back vowel **a*, whereas Moksha implicates **ä*. Basically, the weakening of the intervocalic plosive **-k- > -j-* took place only between palatal vowels, which means that the Moksha variant *lījä* is a more conservative one. The methatetic variants E *il'a*, M *il'e*, *ilä* are secondary in both Mordvinic languages and have a more limited areal distribution. Bartens (1999: 63) notes that there are not many examples of second-syllable **ä* in Proto-Mordvinic and assumes that in M *pir'ä*, *pr'ä* ‘head’ (~ E *pr'ä*, *pir'ä* id.; Finnish *perä* ‘adit, back’ etc. (SSA 2: 342–343; UEW 373)) the second-syllable change *a > ä* is secondary. Nevertheless, there is no unambiguous reason why a Proto-Mordvinic second-syllable **ä* should not be assumed in the case of M *pir'ä*, *pr'ä* ‘head’. Likewise, E *līja*, M *lījä* can be derived from Proto-Mordvinic **likä* with a second-syllable *ä*. The question then remains whether a Pre-Mordvinic variant should be reconstructed at all.

- (16) E M ****mala*** ‘close environment; next, surrounding’: E *malaso*, M *malasa* ‘near [INE]’ etc., E *malasto*, *malasta*, M *malasta* ‘near (from) [ELA]’, E M *malas*, *malav* ‘near (to) [ILL]’ (MdWb 1166–1168) (~ Fi. *malo* ‘edge, side; chink, hole’ (attested in Karelian but not in other Finnic languages) ~ ? SaaLu *muolōs* ‘unfrozen hole in the ice (in the spring)’ SSA 2: 144)

< PreMd **mala*

< (Proto-)Baltic **malā*; cf. Lith. *malá* ‘land, landscape; edge’ ~ Latv. *mala* ‘edge; cost, surrounding’ (Nuutinen 1987, SSA 2: 144; Wälchli 1997: 314))

Nuutinen (1987: 524) mentions two possible etymological explanations for **mala* and argues that it may originate from a common proto-language between Finnic and Mordvinic, or it may have been transferred to the Mordvinic languages via Finnic. Wälchli (1997: 314) leaves it open whether the word is a shared or separate borrowing in Finnic and Mordvinic, but points out that it is possible to show the Baltic origin of the Mordvinic word only by means of the Finnic word, as it is fully grammaticalised in Mordvinic. As regards Finnic, the word is attested only in Finnish and Karelian. The Finnish etymological dictionary (SSA 2: 144) claims that the word *mala* ‘sea beach (with sand)’ also occurs in Estonian. However, this word is not mentioned in Estonian dictionaries (EKSS, VMS, Wiedemann 1973).

- (17) E ***mukoro*, *mukura*, *mukor*, *nukur*** ~ M ***mâkôr*, *mukôr*** ‘back, bottom, rump; ass’ (MdWb 1294–1296)

< PreMd **mukkara*

? < (Proto-)Baltic **mugurā-*, cf. Latv. *mugura*. The etymology is suggested by Thomsen (1890: 204) and Vaba (1985) considers it plausible, whereas

Fraenkel ((Fraenkel 1962–65: 510) is more sceptical. The history of the Latvian word is disputed and Karulis (1992 1: 604), for instance, considers *magur- and *magul- as possible reconstructions. As Fraenkel notes, the relationship between the given Latvian word and Lithuanian *nùgara* ‘back’ is also unclear ((Fraenkel 1962–65: 510). There are similar words in other FU languages such as Mari H *mongər*, M *mugor* ‘body; side, direction’, Udm. *mygor*, *mugor* ‘body, growth, shape etc.’ (~ Ko.), Hungarian *mag* ‘seed; corn; kernel etc. that according to UEW (286) originate from the stem **munkV* ‘body’, whereas Sammallahti (1988) does not include these words in his list. In Mari, the denasalised variant M *mugor* nbody; side, direction’ is presumably a Permic loanword (Bereczki 1992: 102). None of the sources connects the mentioned words with the Mordvinic one. In fact, Thomsen (1890: 204) was aware of possible cognates in other Finno-Ugric languages and concluded that the Mordvinic word most likely must be connected with those of Mari and Permic.

Phonologically and semantically it is possible to bridge the Mordvinic word with the Baltic stem. The Finnic languages have replaced a single voiceless or voiced plosive with a geminate voiceless one in loanwords adopted from different Indo-European languages, such as Fi. *kappale* ‘piece etc.’ < (Proto-)Baltic **gabalas*, cf. Lith. *gābalas* ‘piece of land’, Latv. *gabals* ‘piece, part; region; period’ (SSA 1: 307), Fi. *kukkaro* ‘purse etc.’ < Proto-Germanic **kukaro* (SSA 1: 428) and Fi. *tappara* ‘battleaxe, hatchet’ < Russian *topor* ‘axe’ (SSA 3: 270). Given that the phonological system of early Proto-Finnic and Pre-Mordvinic has been quite similar, it is correct to assume that a similar substitution of -*k*-/-*g*- with -*kk*- in a tri-syllabic word was possible in Pre-Mordvinic, too.

The vowels in Mordvinic represent a clearly later stage than those of inherited Finno-Ugric words, as is the case of *kirda*, *lēpe*.

- (18) E *panst*, *panct*, M *pandâs*, *pandaz*, *panc* ‘bridle’ (MdWb 1534)
 < PreMd **pantas*
 < (Proto-)Baltic **pantias*, cf. Lith. *pantis* ‘tether; fetter’, *pánčia*, PL *pánčios* ‘shackles, fetters’ ~ OPr. *panto* ‘tether’ ((Fraenkel 1962–65: 537; Joki 1973: 57, 60)

Erzya dialects have two parallel plurale tantum forms that include the indefinite plural marker -*t* (E *panst* ~ *panct* < *panc-t* < **pand-*Ø-*s-t* ~ **pandâs-t*). The Moksha variants do not display a plural suffix, and hence are structurally more conservative and have preserved the Pre-Mordvinic stem without dropping the second-syllable vowel. In Erzya, the given word follows the same productive morphophonological alternation rule as two-syllable nouns ending in -*e* or -*o*, such as E *pango* ‘mushroom’ : *pang-t* mushroom-PL ‘mushrooms’. Pre-Mordvinic **pantis* is unlikely, because in this case one would expect a palatalized sibilant *š or affricate *č, and possibly the shift of the first-syllable vowel from *a* to *o*.

- (19) E *pejel'*, *pejil'*, *päjel'*, *pijel'*, M *pejol'*, *pejel'*, *pel'* etc. ‘knife, blade of a knife, chopping knife’ (MdWb 1588)
 < PreMd **pejili*
 < (Proto-)Baltic **peilias*; cf. Lith. *peǐlis* ~ Latv. *peǐlis* ~ OPr. *peile* ‘knife’ (Fraenkel 1962–65: 563; Joki 1973: 57 [Tomaschek]; Thomsen 1890: 207).

This etymology is one of the oldest comparisons and least ambiguous Baltic loanwords in Mordvinic. Vaba (1988: 181–183) points out that there is a similar word in South Estonian that, nevertheless, cannot be directly connected with the Mordvinic one. Given that, as a rule, Pre-Mordvinic first-syllable **e* was preserved in Proto-Mordvinic, Erzya, and Moksha, it is not possible to discuss the chronology of this word in the evidence of vocalism in order to compare it with those etymologies that seem to represent a more recent layer. Nevertheless, the rise of an intervocalic *-j-* suggests that diphthongs such as (Proto-)Baltic **ei* were not possible in Pre-Mordvinic.

Compared to the etymology of E *panst*, *panct*, M *pandâs*, *pandaz*, *panc* ‘bridle’, it must be assumed, therefore, that the (Proto-)Baltic second-syllable *-*ias* was treated differently in words with a first-syllable front and back vowel according to the rules of palatal vowel harmony.

- (20) E *penge*, M *pengä* ‘log, firewood’ (MdWb 1617–1618)
 < PreMd **pinki* ~ **pinkä*
 < Baltic **spingias-*, cf. Lithuanian *spiñgis*, *spìngis*, *spingys* (*spiñgio*) ‘cross-cut, forest trail, glade’. The Lithuanian word originates from the stem **speng-* as the verb *spingéti* ‘shine weakly, flutter, glitter’, *spingulys* ‘spark’ does (Fraenkel 1962–65: 871).

The Baltic word was originally compared (Wälchli 1997: 315–316) with Md E *pinks*, *piñs*, M *piñs* ‘ring; ripe; barrel hoop; handle; bracelet’ (ÈRS 481; MdWb 1670). Nevertheless, this is not correct, because the Mordvinic word is a derivation of another Mordvinic word that is semantically much closer. Actually, it is derived from E *pinge*, M *pingä* ‘time, period’ (MdWb 1673–1675). The meaning ‘ring etc’ is a metaphor expressing a completed time period, such as a full moon, a circular perception of the course of time. Mordwinisches Wörterbuch, which otherwise follows the etymological principle in the compilation of entries, erroneously separates the two Mordvinic words. E *pinks*, *piñs*, M *piñs* ‘ring; ripe; barrel hoop; handle; bracelet’ is presented as a subentry of M *pindəl* ‘shine; light’, which, however, is structurally bimorphemic, too.

Compared to other etymologies, the vocalism of the Mordvinic word suggests that this word belongs to the earlier layer of Baltic borrowings in Mordvin.

- (21) E *púrgiñe*, *púrgíni*, *piŕgeńe*, *piŕgiñe*, *piŕgimä* etc., M *púrgańä*, *pørgańä* ‘thunder’ (MdWb 1853)
 < PreMd **perkänä* (~ **perkini* ~ **porkini*)
 < (Proto-)Baltic **perkūnas* (cf. Lith. *perkūnas* ‘thunder, flash’ ~ Latv. *pērkūns* ~ OPr. *percunis* ‘thunder’ (Thomsen 1890: 207; (Fraenkel 1962–65: 575)) > Fi. *perkele* ‘devil; damn’ (SSA 2: 340)

This etymology has long been considered as one of the most plausible, although it is phonologically irregular, as the abundant variation shows. In principle, two different variants can be reconstructed in Proto-Mordvinic, namely one with a labial first-syllable vowel and another one with an illabial one PM **purgińä* ~ **pirgińä*. Despite this, the labial variant *pu-* must be considered a secondary innovation in comparison with the illabial variant *pi-*, although possibly an early one. It is not possible to derive the Mordvinic *-i-* from *-u-*, whereas the latter one must have been influenced by the quality of the preceding labial consonant *p-*. Although the given word has an obvious loan etymology, the mentioned phonological detail is probably affected by this word's onomatopoetic character as well.

Another phonological question is the quality of the reconstructed first-syllable front vowel. If the Baltic source has **e*, which was presumably transferred as such to Pre-Mordvinic, the second-syllable vowel should have been open *ä*. Pre-Mordvinic **perkini* would imply Erzya **pergińe*, because PFU **e* was preserved, if the second-syllable vowel was not open. The reconstruction PreMd **perkänä*, in turn, suggests that the word was subject to a similar change as E *ińe*, M *ińä* 'big' < PFU **enä* and E *ńile*, M *ńilä* '4' < PFU **neljä* (Bartens 1999: 56–59). Furthermore, it should be assumed that the third syllable *-*nä*, though originally belonging to the stem, was reanalyzed as a diminutive suffix that is very productive in both Mordvinic languages (Al'amkina 2000: 18–20; Erzyan' kel' 2000: 37). This would explain why the second-syllable vowel is E *-i-*, M *ə* instead of E *-e-*, M *-ä-*. In Erzya, for instance, the second-syllable open vowel becomes closed in front of the diminutive suffix as in E *ćora* 'boy; son' : *ćorińe* (MdWb 186–187), *lapa* 'paw, foot' : *lapińe* 'wing' (MdWb1021–1023) *tumo* 'oak' : *tumińe* (Luutonen & al. 2004: 154).

Unlike many other etymologies analysed in this list, E *púrgińe*, *púrgińi*, *pírgeńe*, *pírgińe*, *pírgimä* etc., M *púrgəńä*, *pə́rgəńä* 'thunder' probably represents a relatively old layer that underwent the same kind of vowel changes as those undergone by inherited Finno-Ugric words.

- (22) E *potmo*, *potno*, M *potma*, *potmâ* 'inside; inner stomach; bosom; bottom' (MdWb 1764)
 < PreMd **putma*
 < (Proto-)Baltic **putmō*, cf. Lith. *putmuō*, *putmenā* 'swollen place, swelling' (Wälchli 1997: 318–319); Lith. *pūsti* (: *puntú*, *putaū*) 'swell, fatten, feed' etc.
 < PIE **peu-*, **pou-*, **pū-* 'swell' (Fraenkel 1962–65: 677–678).

In modern Erzya, the word is highly grammaticalised and frequently used as a postposition: *pots* 'into', *potso* 'inside', *potsto* 'from inside'. Historically, the word must belong to a relatively old layer, because it has undergone the same vowel change *u* > *o* as inherited Finno-Ugric words such as Md. E M *tol* 'fire' < PFU **tuli* and E M *moda* 'soil' < PFU **muta*.

- (23) E *pusmo*, M *pusma*, *busma* ‘bunch, bundle’ (ÈRV 1993a: 529, ÈRV 1993b: 115, MRS 1998: 550), *čer’ pusmo* ‘tangle (of hair)’ (ÈRV 1993a: 529)

< ProtoMd **pusma*

< (Proto-)Baltic **buzma-* (~ **buzma-*); cf. Lith. *bužmaš* ‘bunch’ etc.

Surprisingly, the Mordvinic word is not mentioned in Paasonens large Mordwinisches Wörterbuch (MdWb). Nevertheless, the word is attested in Erzya-Russian and Moksha-Russian dictionaries published in Saransk and other sources (Keresztes 1990: 148).

Semantically, the Mordvinic word does not deviate from the suggested Baltic original at all, which suggests that the borrowing is probably quite recent. The same is valid for the correspondence of Mordvinic first-syllable *u* to Baltic *u*. There are two irregular deviations from the expected replications in Mordvinic. Firstly, the Baltic *ž* should correspond to a devoiced *š* as the first part of a consonant cluster in Mordvinic. In Baltic loanwords, Baltic **š* is regularly represented as *š* ~ *ž* (conditioned) in Mordvinic (see, E *inže*, M *inži* ‘guest’, E *kšna*, *šna*, (Šokša) *kišna*, M *šna*, *šâna* above, and E *raško*, M *raška* below). Conceivably, an alternative explanation is that in the evidence of the Mordvinic word, the Baltic source language the form was **buzma-* with *-z-* instead of **buzma-*. It is also possible that *-ž-* in Lithuanian is secondary, as is often the case for the palato-velar sibilants *š* and *ž* (Stang 1966: 91–98).

- (24) E *raške*, M *raškä* ‘relative, friend, (Pl.) kinship, affinity, tribe’ (MdWb 1883)

< PreMd **ratas(-kä)* (cf. E *karks* and E *panst*; the expected result of PreMd **raski* would be E **roske*)

< (Proto-)Baltic **radas*, cf. Latv. *rads*. The Latvian word is an etymological cognate of Lith. *rasti* ‘find, meet’, Latv. *rast* ‘find, be or become used to’ etc. The Latvian noun *rads* ‘relative, kinship, tribe’ has more concrete nominal parallels in the Slavic languages, such as Russ. *pod* ‘relative, kinship’, Ukr. *pið*, ORus. *podъ*, Czech *rod*, Pol. *ród* etc. (Fraenkel 1962–65: 700–701; Karulis 1992 II: 97–98; Pokorny 1959: 1153; Vasmer & Trubačov 1986–87 III: 490–491).

Synchronously, the Mordvinic word is bimorphemic, just as many of the words discussed in detail above (cf. 3. E *erke*, M *ärkä*, *järkä*, 19. E *panst*, *panct*, M *pandäş*, *pandaz*, *panç*, 21. E *puřgié*, *puřgií*, *piřgeňe*, *piřgié*, *piřgimä*, M *puřgəńä*, *pərgəńä*). The given word consists of the stem, which does not occur independently in Mordvinic, and a productive (Alyamkin 2000: 20, Èrzyan’ kel’ 2000: 37–38) diminutive suffix E *-ke*, M *-kä* and can be attached to derived words, as in E M *piks* ‘string, rope’ etc. → E *pikske*, M *pikskä*; M *traks* ‘cow’ → *trakskä*, E M *sur* ‘finger’ → *surks* ‘ring’ → E *surkske*, M *surkskä* (MdWb 1658–1659, 2056–2059, 2334; Serebrennikov 1967: 68).

The suggested loan etymology is based on the assumption that the original stem has eroded considerably during the morphological adoption of the word and the second-syllable vowel was in connection with a secondary suffixation, as in the case of E *panst*, *panct*, M *panç* ‘bridle’ (but not M *pandäş*, *pandaz*). Thus, the process could be the following: E *raške*, M *raškä* < PM **raškä* ~ **raćkä* < *PreMd **ratas(-kä)*. This explanation suggests that the palatalization

of the sibilant *ś occurred in Proto-Mordvinic under the influence of the prevocalic suffix after the loss of palatal harmony. The relationship between a palatalized and unpalatalized variant must be considered as parallel with that of E *uške*, M *uškä* ‘chain’ etc. and E *uskoms*, M *uskäms* ‘drive, lead, bring’ etc. The Mordvinic dictionary by Paasonen et al. presents these words as independent entries, although it is based on an etymological structure and prefers to represent derivations as subentries of underived stems (MdWb 2481–2485). Historically, E *uške*, M *uškä* ‘chain’ is a derivation of E *uskoms*, M *uskäms* ‘drive, lead, bring’. As regards the etymology of E *raške*, M *raškä*, it must also be alleged that the Pre-Mordvinic intervocalic *t* was either lost in connection with the loss of the second-syllable vowel *-a-* or there was an intermediate stage in which *t* and *s* merged and formed a palatal affricate *ć* that underwent a similar assibilation *ć > ś as inherited Finno-Ugric words (Bartens 1999: 41–42; Keresztes 1987: 78–80, 140–147).

Finally, the existence of the sibilant motivates the Baltic origin of the given word. Slavic borrowings in Mordvinic have clear Slavic characteristics. The same Balto-Slavic stem was borrowed into Mordvinic later in another form in the following way: E M *raštams* ‘reproduce, breed’ (MdWb 1885) < ORus. *raždati* ‘give birth’ etc. ← *roditi* > Rus. *rodit'* id. (Stipa 1973b: 16). Likewise, there are other Mordvinic words in which more detailed analysis of the relationship between Baltic and early Slavic influence would be welcome (cf. E M *rudas* below).

- (25) E *raško*, M *raška* ‘the inner side of a corner, the place between legs; branch, fork (between fingers etc.)’ (MdWb 1883–1885) (? ~ Fi. *rahko* jne. ‘forked stick (to hold a fir torch)’ (with a plausible cognate in Karelian but not in other Finnic languages; SKES 713; SSA 3: 38; UEW 743))
 - < PreMd **raška*
 - < (Proto-)Baltic **raškā*, cf. Lith. *raškà* ‘forked stick for picking apples’ (Liukkonen 1999: 114–115).

- (26) E *ředams*, *řädams*, M *řädams* ‘notice, perceive, become aware; look for; choose’ (MdWb 1913)
 - < PreMd **räti-* ~ **räti-*
 - < (Proto-)Baltic **regē-*, cf. Lith. *regéti*, *regiéti* (*regiù*) ‘see’, Latv. *redzēt* ‘glimpse, sehen’ (Wälchli 1997: 319–320). Pokorny (1959: 854) is skeptical about the old Indo-European origin of the word (? < ieur. **reg-* ‘see’) and notes that the stem is attested in the Baltic languages and Albanian only. Fraenkel (1962–65: 712–713) assumes that the meaning of the Baltic word is secondary, but as the current etymology shows, certainly not a very recent change.

As both Erzya dialects and Moksha indicate, the Baltic first-syllable *e* was substituted with Mordvinic ä. Kallio (2008: 272) shows that a similar substitution is met in the Baltic loanwords of the Finnic languages as well, as both Finnic *e* and ä may correspond to (Proto-)Baltic first-syllable *e*. According to Kallio the Finnic *e* occurs earlier, whereas ä is mainly found in later loans.

The palatalization of Mordvinic *d'* indicates that the second-syllable vowel was historically a front vowel. Those etymologies that are discussed here do not clearly prove that a (Proto-)Baltic voiced plosive such as *g* in the given etymology would have been substituted with a voiced one in Mordvinic. On the contrary, the given etymology demonstrates that at the time the word was borrowed, there still were no voiced plosives in Mordvinic. Conceivably, intervocalic plosives became voiced only in a relatively late Proto-Mordvinic stage and voiced plosives did not belong to the phonological system of that language variant which adopted the Baltic loanwords. Wälchli (1997: 320) correctly points out that in (Pre-)Mordvinic there was no intervocalic -*g-* that would have corresponded to the Baltic one and it, or rather a palatalized variant **g̊*, was therefore replaced with a palatal plosive *t' (> d')* in Mordvinic. In fact, it is fairly common that in early Indo-European loanwords a palatal voiced plosive was compensated with a palatal consonant such as **c̊*, **s̊*, **j* in early Finno-Ugric (Uralic) variants (Koivulehto 1999a). There was no palatal plosive in Proto-Uralic or in Proto-Finno-Ugric (Sammallahti 1988), but as the present etymology suggests, the phonologization of new palatal phonemes such as **t'* took place at an early stage of Proto-Mordvinic (Pre-Mordvinic) (cf. Bartens 1999: 35–36). A parallel case is found in Latvian loanwords in Estonian dialects. The substitution of Latvian word-internal *k̊*, the voiceless pair of *g̊*, is ambiguous. In many cases the new phoneme is adopted in Estonian, but sometimes it is substituted with the phonologically adjacent palatalised phoneme *t'* that may be depalatalized to *t* (Vaba 1997: 408).

Interestingly, there is another Mordvinic word with a possible but not completely unambiguous Baltic origin that lends further evidence to the treatment of voiced plosives in Proto-Mordvinic (Pre-Mordvinic), namely E *simeń*, M *śiməń* (see, below).

- (27) E *ŕišme*, M *ŕišmä* ‘chain; rope; string, ribbon’ (MdWb 1922–1923) (~ Fi. *rihma* ‘string’ etc. (attested in all Finnic languages; SSA 3: 72–73)

< ProtoMd **ŕiš(i)mä*

< (Proto-)Baltic **rišima-*, cf. Lith. *rišimas* ‘binding’, Latv. *risamais* ‘string, ribbon’ ← Lith. *rišti* ‘tie, bind, knot; remove etc.’, Latv. *rīst* ‘tie, bind; separate’, OPr *senrists* ‘bound’. The meaning ‘remove, separate’ originates from verbal particle constructions and a reanalysis of the verbal stem (Fraenkel 1962–65: 738). The Mordvinic noun illustratively reflects the participle form of the Baltic verb. The Baltic word was also borrowed into the Finnic languages (Finnish *rihma* ‘filament, thread’ with etymological cognates in all Finnic languages) and as a separate loan in Saamic (North Saami *riessan* : *riessama* ‘fringe, ruffle’ with cognates in most other Saamic languages) (Sammallahti 1984: 139; SSA 3: 72–73). Vaba (1983: 143) notes Mordvinic *ŕiš* as the stem, but as evidenced in Mordwinisches Wörterbuch (MdWb), the word consists of two syllables and, in fact, corresponds to the Baltic origin even more precisely.

On phonological grounds, the Mordvinic word is clearly a separate borrowing from Baltic, too. Baltic *š* should correspond to *š* in Mordvinic as well

(cf. E *šenže*, *šeńš*, *šenš* ‘duck’ and E *šerže*, *šeře*, E:Nask *šaržə-*, M *šarža*, *šarža* ‘grey hair; grey place in the head (also: on the field), greyhead’ below). Thus, in Mordvinic the replacement of Baltic *š* with **s* ~ **s̥* is contrary to expectations. The most reasonable explanation is that the sibilant was strongly palatal in the intervocalic position and, consequently, was substituted with **s̥* in Proto-Mordvinic. Alternatively, in this word Lithuanian *š* is secondary and influenced by word-initial *r* as Baltic **s* changed to *š* in Lithuanian after *r* (Stang 1966: 91–98).

The vocalism of the Mordvinic word E *ríšme*, M *rísmä* ‘chain; rope; string, ribbon’ shows that the borrowing does not share the changes of inherited Finno-Ugric words, just as many of the listed borrowings do not. Consequently, the Baltic first-syllable *i* corresponds to Mordvinic *i* instead of *e*, which is the regular correspondence in inherited Finno-Ugric vocabulary in Mordvinic (Bartens 1999: 56; Erkki Itkonen 1946: 300–301).

- (28) E *rudas*, *urdas*, *rudaz*, M *rudas*, *ôrdas*, *ardas*, *urdas*, *urdaz* ‘dirt, mud’ → E *rudazov*, *urdazu*, M *ôrdazu*, *rudazu* ‘dirty’ (MdWb 1905–1906)
 < ProtoMd **rudas* (~ PreMd **rutas*)
 < (Proto-)Baltic **rudas*, cf. Lith *riūdas* ‘(red)brown, reddish, dark yellow’, *raudà* ‘red (colour)’, Latv. *ruds* ‘reddish, redbrown’, *rauds* ‘red, reddish’, *rūda* ‘swamp water; mud’ < PIE **roudh-*, *rudh-ró-*, *rudh-wio-*, *rudh-so-* ‘red’. The word denoting ‘autumn’ in the Baltic languages, namely Lith. *ruduō*, Latv. *rudens*, originates from the same PIE stem (Fraenkel 1962–65: 704–705, 745; Karulis 1992 II: 132–133; Pokorny 1959: 872–873).

In the dictionary of Mordvinic (MdWb 1905), the given word is compared with Russian *ruda* ‘dirty, muddy’ assuming that it was borrowed from Russian. In Russian dialects, the word has other metaphoric extension such as ‘blood; red soil etc.’, as is also the case for different variants in the Baltic languages. However, the word-final sibilant in Mordvinic is not a derivational suffix, but belongs to the word stem and is found in a large number of both inherited and borrowed words. Therefore, it is possibly a Baltic loanword that is both phonologically and semantically motivated reflecting the masculine nominative ending *-s*. Phonologically, this word belongs to the same layer with several other Baltic loanwords in Mordvinic that are clearly more recent than the inherited Finno-Ugric words because the treatment of first-syllable *u* was different from that of inherited words.

- (29) E *simeň*, M *siməní* ‘tribe, family’ (MdWb 1980)
 < PreMd **simeni* ~ **šimeni*
 < (Proto-)Baltic **giminē-* (? **gimenē*), cf. Lith. *giminė* ‘relatedness, family, tribe’ (> Latv. *gimene* ‘tribe, family’) ← *giñti* ‘be born, come into existence’ OPr. *gimseñin* ‘birth’, *gemmons* ‘born’, OInd. *gámati*, *gacchati*, Av. *ǰmaiti*, *jasaiti* ‘come’, Goth. *qiman* id. etc. < PIE **gʷʰem-* (Fraenkel 1962–65: 151; Pokorny 1959: 464–465; SKES 1008; SSA 3: 173; Thomsen 1890: 216). Semantically and from the viewpoint of syllable structure, the Mordvinic word matches well the Baltic noun derivation **giminē*, but phonologically the word-initial correspondence

between Erzya *s-* (~ *ś-*) and Baltic *g-* is problematic. As pointed out above (cf. E *řed'ams*, *řädams*, M *řädams* ‘notice, perceive, become aware; look for; choose’), palatalized Indo-European voiced plosives were often replaced with palatal affricates and sibilants in early Finno-Ugric varieties. In this case Baltic *gi-* suggests a rather palatal pronunciation of the given word, as shown by Latvian *ģimene*. However, the Erzya word-initial sibilant *s-* is unpalatalized, which seems to refute the etymology on phonological grounds. As Bartens (1999: 43, 49) notes, PFU **s-* and **ś-* were kept apart in Proto-Mordvinic, whereas the opposition between other palatalized and unpalatalized consonants such as *l:l* and *n:n* was mainly blurred in Proto-Mordvinic. In Moksha the merger took place between **s* and **ś* as well, but, in principle, Erzya maintained this distinction. This is seen in assumed Indo-European loanwords as well, such as E *siře*, *siřā*, *sirā*, M *siřā* ‘old’ and E *sirňe* ~ M *sirňā* ‘gold’ (Joki 1973: 314–315; MdWb 1985–1989; Paasonen 1897: 47). Consequently, the etymology is correct only, if a similar blurring that occurred between other palatalized and unpalatalized consonants could occur between **s* and **ś*, too, and the unpalatalized **s* in Erzya is actually secondary with respect to **ś*. The most likely phonological explanation for this is that the labial nasal *m* that had no palatalized variant influenced regressively the palatalization of the first syllable that finally led to its loss.

The second assumption, even more crucial for this proposed etymology, is the substitution of Proto-Baltic *g-* (~ **g̊-*) with Pre-Mordvinic **ś-*. Basically, the replacement of a palatal plosive **k-/g̊-* of the early Indo-European proto-language varieties with a palatal sibilant **ś-* in Finno-Ugric is attested in some very old borrowings, such as (Fi. *salko* ‘pole, rod’, Md. E *šalgo*, M *šalga* ‘thorn, spine, sting’ etc. <) PFU **šalka* < PIE **g̊halg̊h-o-/*g̊halg̊h-ā-*; (Fi. *sanka* ‘handle, bail’ <) PFU **šanka* < PIE **kanku*; (SaaN *čuonja* ‘goose’ <) PFU **šanak* < PIE **g̊han-*, **g̊han-əd* / **g̊han-ud*; (Fi. *sora* ‘gravel, grit’, Md. E *šuro*, M *šora* ‘corn, grain’ (Koivulehto 1983: 113–120, 1999). Koivulehto (1983: 111) following Joki (1973: 303) notes that in Proto-Indo-European the palatalized plosives **k*, **g* and **g̊h* must have been strongly palatalized to be clearly opposed with the velar ones **k*, **g* and **g̊h*. The problem with this well motivated explanation is that all parallel cases are very early borrowings. In Mordvinic, the first-syllable *i* of inherited Finno-Ugric words combined with a non-open second-syllable vowel is regularly represented with *e* in present-day Erzya and Moksha (Bartens 1999: 56, Erkki Itkonen 1946: 300–302). While this happens even in words with a word-initial PFU **ś-* such Md. E M *šejel'* ‘hedgehog’, the only explanation is that the Indo-European palatalised plosives could be replaced with a palatalised sibilant in Finno-Ugric proto-languages of a later layer, too.

Finally, it must also be noted that Baltic **gimenē* with a second-syllable *-e-* would correspond better to Proto-Mordvinic second-syllable *-e-*. However, the word belongs to the earlier layer that was borrowed into Pre-Mordvinic. In inherited Finno-Ugric vocabulary no phonological distinction was made between second-syllable **i* and **e*. Thus, the reconstruction **giminē-* based on Lithuanian is equally acceptable.

- (30) E *šenže*, *šeńš*, *šenš* ‘duck’ (MdWb 2227)

< PreMd **šenši*

? < (Proto-)Baltic **žansis*; cf. Lith. *žāsis* ~ Latv. *zoss* ~ OPr. *sansy* ‘Gans’ (Thomsen 1890: 247; Joki 1973: 57; Fraenkel 1962–65: 1292). The bridging of the Mordvinic word with the Baltic ones is a typical example of an etymology that does not match completely in terms of phonology and semantics but, yet, there are several reasons to assume that the Mordvinic word can be a Baltic loanword. The mentioned Baltic word was borrowed into Finnic (Finnish *hanhi* with cognates in almost all other Finnic languages (SSA 1: 138) in which the phonological and semantic correspondence is historically one to one. However, the Finnish etymological dictionaries (SKES 55; SSA 1: 138) do not mention the Mordvinic word at all, and hence do not consider it a cognate of the Finnic word. The reason is the mismatch between the front vowel in Mordvinic and back vowel in Finnic and Baltic.

The Mordvinic word has a relatively limited geographical distribution in Erzya dialects and it is not attested in Moksha at all. Semantically, it is obvious that ‘duck’ and ‘goose’ may overlap, as both belong to adjacent bird species. In Mordvinic, there are several synonyms for both birds, such as *d'iga*, *gaga*, *gala*, *maćej* ‘goose’ and *jakšargo*, *pagańka*, *šenže*, and *utka* ‘duck’. Phonologically, there is a possibility that the first-syllable *e* derives from a historical *a* in E *šenže*, *šeńš*, *šenš* ‘duck’. The parallel evidence comes from E *šerže*, *šeře*, *šaržə*, M *šarža*, *šarža* ‘grey hair, grey place in the head (also metaphorically: on the field)’ in which the Erzya and Moksha variants do not correspond phonologically to one another (see, below). It must also be noted that there is another Baltic bird name in which the vocalism corresponds to the investigated word, namely Lithuanian (dial. Žemaitian) *génšė*, *gėšė*, *gėžė* ‘heron, stork’ (Fraenkel 1962–65: 137); however, the word-initial plosive *g-* and the more remote meaning ‘stork’ do not match with E *šenže*, *šeńš*, *šenš* ‘duck’.

- (31) E *šerže*, *šeře*, E:Nask *šaržə-*, M *šarža*, *šarža* ‘grey hair; grey place in the head (also: on the field), greyhead’ (MdWb 2228) (~ Fi. *harmaa* with cognates in other Finnic languages except Veps and Livonian; SaaS *siermag*, *šeřma* ‘grey’ (SSA 1: 143))

< PreMd **šeřsi*

< (Proto-)Baltic (**šeřsnas* ~) * *šar-*; cf. Lith. *šeřkšnas* ‘ripe; frost’ (Fraenkel 1962–65: 973–974); cf. Lith. *šiřvas* ‘(blue)grey, mouldy’, also a different ablaut degree *šarvas* ‘grey’, and further Lith. *širmas* ~ *šiřmas* (Fraenkel 1962–65: 989). As Liukkonen (1999: 37–40) notes, the Lithuanian form with a first-syllable *a* manifested in *šarmà*, *šařmas* ‘ripe, frost’ (Fraenkel 1962–65: 965) actually corresponds phonologically exactly with the Finnic variant.

As the Erzya and Moksha variants show, the difference of the vowel makes the etymology of the Mordvinic word ambiguous. Both Erzya and Moksha forms are completely lexicalised, as indicated by the adjectival derivations: E *čeřzej*, *šeřej*, *šeřej*, *šeřev*, M *šaržu*, *šaržu* jne. ‘grey, with grey hair; fluffy;

grey hair, greyhead'. The Finnish etymological dictionaries do not explain why a back vowel in the Finnic word with would originate from a front vowel as suggested by the Lithuanian words *širvas* ~ *širmas* ~ *šiřmas*. SKES ([1955] 59) follows Thomsen (1890: 223) and Kalima (1936: 97) and presents only the words with a first-syllable *-i-* in Baltic, while the later SSA (SSA 1: 143) adds *šarvas* to the list. Both the Erzya and Moksha variants suggest that there used to be a word-internal sibilant in Proto-Mordvinic; however, the Erzya word can be derived from a Proto-Baltic reconstruction with a first-syllable *e* and the Moksha word with a first-syllable *a*. SSA actually assumes a parallel borrowing into Finnic and Saamic as the different ablaut degrees show.

Basically, it is possible to assume a similar convergence between the Erzya and Moksha and the preservation of an old phonological difference. Given that there is a lot of phonological variation in Baltic, this assumption seems well-motivated. Nevertheless, despite the discrepancy between Erzya and Moksha it is possible to assume that the Erzya variant with *e* is secondary and actually originates from a similar back-vowel ablaut degree as Moksha. Ravila (1929: 102), for instance, assumed that there used to be a back vowel in Erzya, too, as suggested by the Naskaftym variant *šaržə-* representing the southeastern dialects, though not attested elsewhere in Erzya. Thus, presumably in this case a secondary change took place in Erzya, as in the word E *šeja*, *šäja*, M *šava*, *šva* 'goat' < Proto-Md **ćava* < PreMd *ćaga* < Indo-Iranian, cf. Old Indian *chāgah* 'Bock [MASC]', *chāgā* 'goat [FEM]' (also > Tatar (Mišär) *čaga* 'Lamm'), *chagalāh* 'buck; goat [MASC]' (widely represented in Indo-Iranian languages), Oss. *sæg* 'goat' (Joki 1973: 317—318). However, there are also opposite cases, such as E *třavoga* 'unrest, commotion, excitement' (< Russ. *trevóga* id., MdWb 2339), in which the shift of word stress from the Russian second syllable to the Erzya first syllable has obviously affected the quality of the vowel.

Although the Proto-Baltic variant **šeršnas* seems to match the Erzya variants with a front vowel without any problem, the etymology can still be elaborated further. Actually, the Mordvinic word is bimorphemic and consists of a word stem and a denominal derivation suffix. As Serebrennikov (1967: 77) notes, for instance, this is a relatively frequent adjectival suffix, as evidenced in E *beŕan* 'bad' → *beŕaža*, E *keľej* 'broad' → *keľejža*, E *piže* 'copper; green' → *pižiža* etc. (none of these derivations attested in MdWb (124–125, 686–688, 1697–1700) and ÈRV; cf. Èrzyan kel' 2000: 39).

- (32) E M *talaj* 'recently, lately; fair(ly)' etc., derivations with local case suffixes M:Sel *talajs* (ILL) 'for some time, for a certain period', E:VVR *talajste* (ELA) 'from a distance' (MdWb 2258–2259)
 < ProtoMd/PreMd **talaj*
 < (Proto-)Baltic **tāl-u/i-*; cf. Lith. *tolūs* 'remote, distant', *tolī*, *tolie* id. ~ Latv. *tāls* id., *tālums* 'distance, remoteness' ~ OPr. *tālis* (adv.) 'further'; ~ Russ. *dal'* 'distance' → *daleko* 'in a distance' (Fraenkel 1962–65: 1106–07; Vasmer & Trubačov 1986–87: 483)

Paasonen (1897: 53) and Räsänen (1969: 458) consider this word a Turkic loanword but do not mention any corresponding words in the Turkic languages of the Volga region. They compare the Mordvinic word with Turkic *talaj* ‘much, abundant’ and forms in more southern Turkic languages such as Kazakh *talaj* ‘some, a little’ that, in principle, could correspond to the Mordvinic word.

According to Fraenkel (1962–65: 1106–07), the etymology of the Baltic word is not unambiguous. From the perspective of the Mordvinic languages, the point is that Proto-Baltic *ā was substituted with ProtoMd/PreMd *a. A late Slavic borrowing would most probably be reflected with a word-initial *d*-, as usually has been the case for Russian loanwords with word-initial *d*- . Erzya follows this pattern regularly. In Moksha, Russian *d*- often becomes *t*-, as in E *dos-adna*, M *tasadna* ‘annoyingly, vexedly’ (< Russ. *dosadno* id.), E *doska*, M *toska* ‘table’ (< Russ. *doska* id.), E *dosuž*, M *tasuš* ‘agile, skillful’ (< Russ. *dosužij* id.), E *dratva*, M *tratva* ‘wax end’ (< Russ. *ðpamba* id.), E *drug* M *trug* ‘friend’ (< Russ. *drug* id.), E *dum*, M *tum* ‘advice, plan’ (< Russ. *duma* id.) (MdWb 322–330). However, the phonological structure of the given Mordvinic word does not have parallels in Slavic either.

Another point concerning the reconstruction of the first-syllable vowel in Baltic as both *ā and *ō might come into question. Fraenkel (1962–65: 1105) assumes that the Baltic word historically originates from the pronominal stem **to* (cf. Lith. *tōl*, *tōlei* ‘until then, so long’, Latv. *tālit* id.; OChSl *toli* ‘to that extent’, *tol'* ‘so (very) much’ (> Russ. *tol'ko* ‘only’)). Thus, historically *ō would represent the original vowel in Baltic, although normally Latvian ā is more conservative compared with Lithuanian ō. As regards the given etymology, a short Proto-Baltic *o is excluded, because a PFU/Pre-Mordvinic *o cannot be represented as *a* in Proto-Mordvinic. This distinction between the long vowels *ā and *ō is probably not crucial from the viewpoint of Mordvin vowel history, because there was no *ā in Pre-Mordvinic or Proto-Mordvinic, and PFU *ō is represented as *a* in Proto-Mordvinic, as PFU *a is the other possible substitution for Proto-Baltic *ā. However, this development is attested only in nouns, which have eroded to one-syllable stems (Bartens 1999: 55). For the sake of comparison, in Finnic, Proto-Baltic *ā/*ō frequently becomes Proto-Finnic *ō (Stang 1966: 24; Kallio 2008: 272, Koivulehto 2000).

- (33) E *turtov, tortov, turtuv, turto(n)* [Postp.] ‘to; for’ (MdWb 2353–2354)
 < ProtoMd **turt(t)a*
 ? < (Proto-)Baltic **turta-*; cf. Lith. *turtas, turtie* ‘wealth, property’ ~ Latv. *turta* ‘fortune, property’ (Fraenkel 1962–65: 1145; Wälchli 1997: 317–318).

The plausibility of the etymology is not unambiguous for two reasons. Firstly, the given loanword should be, as several other ones in the list above, clearly of a more recent origin than inherited Finno-Ugric words. Phonologically, Pre-Mordvinic **turta* would correspond to E **torda*, while the alternative PreMd **turti* would correspond to E **tordo*. So, a more recent origin than Pre-Mordvinic is more likely, just as in the case of some other investigated

etymologies. In this list of Baltic loanwords in Mordvinic, the given etymology is the only one in which a voiceless plosive following a voiced consonant in Mordvinic corresponds to a voiced plosive in Baltic. In principle, there are two possible explanations for the existence of *rt* that either prove the late origin of the Mordvinic word or descend from a historical **rtt* with a geminate plosive. There is no evidence that the latter would have been the case in the given word, as there is no cognate form in Moksha. However, this possibility cannot be completely excluded, as there are numerous parallel cases in the Finnic languages. In both Germanic and Slavic loanwords, in sequences consisting of a voiced consonant and a voiceless plosive, the substitution of the consonant cluster is based on the lengthening of the plosive in Finnic. The following examples show a more long-term phonological substitution of Indo-European loanwords in western Finno-Ugric (Finnic): Finnish *hurtta* ‘hound, big dog’ etc. (with cognates in several other Finnic languages) < Russian *hort* (SSA 1: 192), Finnish *markka* ‘mark (money)’ (with cognates in most Finnic languages) < PF **markka* < PGerm *markā* (SSA 2: 150), Finnish *nartta* ‘a light (reindeer or dog) sledge’ < Russian *nárta* (SSA 2: 207), Finnish *paikka* ‘place; scarf’ etc. (with cognates in all Finnic languages) < PGerm *spaikā* (Koivulehto 1981: 195–199; SSA 2: 288–289), Finnish *palkka* (with cognates in all Finnic languages (SSA 2: 301)) < East Slavic *bologo* (Saarikivi 2009: 139–144), Finnish *verkko* ‘net’ (with cognates in all Finnic languages) < PF *verkko* < PGerm *werko-* (SSA 3: 428). Assuming that this kind of substitution was possible in other early Finno-Ugric varieties such as Pre-Mordvinic and Proto-Mordvinic, the etymology of E *turtov*, *tortov*, *turtuv*, *turto(n)* is phonologically fully plausible.

Secondly, the etymology suggests that a grammatical reanalysis took place contemporaneously in connection with the language contact and followed the borrowing of the Baltic word in Mordvinic. As Wälchli (1997: 317–318) notes, the Mordvinic word occurs as a postposition and there is no noun that would correspond to the Baltic origin, although one would expect this. More generally speaking, it is maintained that grammatical elements are not borrowed from one language to another as easily as nouns. The syntactic order of the constituents, case government of adpositions, and morphosyntactic properties ruling adpositional phrase often limit the borrowing of grammatical units such as adpositions to another language (Grünthal 2003: 199). In general, grammatical borrowing suggests intensive lexical borrowing that presumably should be more clearly seen in the lexicon than the apparent Baltic influence on Mordvinic. However, the current list includes several other examples of units manifesting grammatical relations, namely E *lango*, M *langa* ‘surface, cover; low’, E M **mala* ‘close environment; next, surrounding’ : E *malaso*, M *malasa* ‘near [INE]’ etc. and E *potmo*, *potno*, M *potmā*, *potmâ* ‘inside; inner stomach; bosom; bottom’ that all display spatial functions (see, above). This suggests that a more detailed analysis of the etymology of the given words should account for the development of relational nouns in language contact. It must also be noted that in Mordvinic there are other postpositions that are transparent borrowings from Tatar, namely E *baška*, E M *paška* (Adj.) ‘special, separate’, (Postp.) ‘except of, in addition to’

< Tatar *baška* (MdWb 120) and E *karšo* (: *karšov*), *karčo*, E M *karša*, M *karšâ* (: *karšək*) ‘against’ etc. < Tatar *karšə* (MdWb 615–617).

- (34) E *terídems*, *tärídems*, *terídims*, *terígems* etc., M *terídams* ‘call; invite’ (MdWb 2389–2390)

< PreMd **tirti-*

< (Proto-)Baltic **tirdi-*, cf. Lith. *tirti* ‘learn, find out; search; examine’, *tirdinéti*, *tyrinéti* [FREQ] ‘search, ask several times’ ~ Latv. *tirt*, *tirdināt* [FREQ] ‘(to) question, interrogate’, *tirdīt* ‘badger, interrogate persistently; disturb, curse, persuade’ etc. (Fraenkel 1962–65: 1102; Karulis 1992 II: 409–410).

Phonologically, this etymology represents the Pre-Mordvinic layer, because in Mordvinic the first-syllable *-e-* corresponds to Baltic *-i-* as in inherited Finno-Ugric vocabulary (cf. E *kirda*, M *kârda* above). Synchronously, the word-internal voiced plosive *-d-* is identical with the momentative derivational suffix, which adds the relevance of aspect of the given verb. In Mordvinic, a word-internal element is sometimes reanalysed as a verbal derivative suffix, as in the deadjectival (E *naksado*, E M *naksada* ‘decayed, rotten’) → E *naksadoms*, M *naksadâms* ‘rot, moulder’ (MdWb 1311–1312; Serebrennikov 1967: 231).

- (35) E *tožaní*, *túžäní*, M *tožän*, *tožän*, *tožäm* ‘1000’ (MdWb 2411–2412) (~ Fi.

tuhat ‘1000’ (attested in all Finnic languages) ~ Ma. H *tæžem*, M *tüžem* id.

(SKES 1374; SSA 3: 318))

< PreMd **tušanti* ~ **tušamti*

< (Proto-Baltic) **tú(k)stantis*, cf. Lith. *tükstantis* ‘1000’ ~ Latv. *tükstuōt(i)s* ~ OPr. *tūsimtons* [PL.ACC] id. (Kalima 1936: 57, 170–171; Joki 1973: 319; Thomsen 1890: 232–233). This etymology, along with many others, was originally suggested by Thomsen.

Phonologically, this etymology is basically solid and one of the rare plausible ones that could support the assumption of shared Baltic borrowings in the Finnic and Mordvinic languages. In principle, the reconstruction **tušanti* is correct for both (Early) Proto-Finnic (cf. the inflection of Finnish *tuhat* thousand. NOM : *tuhanne-n* thousand-GEN) and Pre-Mordvinic. However, in Mordvinic there are several details that diverge from the expected form based on the reconstruction and need to be discussed, namely the palatal word-initial *t̚-* and the second-syllable palatal vowel *ä* and the quality of the word-final nasal *n* ~ *ń* ~ *m*. The rise of a palatal *ń* is probably motivated by the reanalysis of *n* as the word-final unit because the palatal *ń* is identical with the genitive *ń*. Syntactically, the genitive is typically used in a pre-nominal position as a determiner of a syntactic dependent that is comparable with the pre-nominal position of numerals, such as ‘thousand’, as quantifiers of nouns. If this assumption is correct, the palatalisation of the second-syllable vowel *a* > *ä* can be explained as a result of regressive assimilation of the vowel with the palatal nasal.

Nevertheless, on the one hand, it is hard to see that the regressive palatalisation, regardless of how productive it is, would have caused the palatalisation of the word-initial *t̚*. As the older version of the Finnish etymological dictionary

notes, the rise of a palatal *t* in the given word is irregular (SKES 1374; cf. Bartens 1999: 35–36; Keresztes 1987: 59–62). As all Mordvinic variants suggest, the palatalisation of the word-initial *t* took place already in Proto-Mordvinic. On the other hand, regressive assimilation, stress shift in Proto-Mordvinic (Erkki Itkonen 1971–72), and the reanalysis of palatal harmony is probably the best available explanation for the palatalisation the word-initial *t* we have.

The substitution of Baltic **s* with Finno-Ugric **š* has several parallel cases in the earliest layer of Germanic loanwords in Finnic such as Fi. *halpa* ‘cheap’ etc. < (early) Proto-Finnic **šalpa* < Proto-Germanic **salwa-z* and Fi. *hauta* ‘grave’ etc. < (early) Proto-Finnic **šavta* < Proto-Germanic **sauPa-z* etc. (LÄ-GLOS 1: 60–134).

Finally, the attestation of a word-final *-m* in the Moksha dialects of Penza triggers the question whether it is a local innovation or an archaism. The inflection *tožəm* thousand.NOM : *tožmə-n* thousand.GEN (quoted from MdWb 2411) suggests that in this dialect, the old inflectional pattern was preserved and, as an exception to the rule that the word-final *-*m* changed to *-*n* in Proto-Mordvinic as it did in Proto-Finnic, in the given case word-final *-m* was preserved. If this assumption is correct, the connecting of the Finnic and Mordvinic variants with the Mari one is well-motivated and a correct Proto-Finno-Ugric reconstruction should rather be **tušamti*. However, given that there are very few Baltic loanwords in Finnic and Mordvinic that have any kind of possible cognate in Mari, and even fewer with an accepted cognate, the given word is more likely a parallel rather than a shared borrowing. In Mari, the first-syllable *ü* is also problematic but it will not be discussed in more detail here.

- (36) E *vir*, M *vir*, *virä* ‘forest’ (MdWb 2661–2665)

< ProtoMd **virə* ~ **virä*

< PreMd **véri*

< (Proto-)Baltic **vēr-i/e-*, cf. Latv. *vēris*, *vēre* ‘a big forest, a big deciduous forest’ jne. < PIE. **uer-* ‘wide, broad’ jne. (Mülenbach & Endzelin IV: 561–562; Karulis 1992 II: 508–509).

Phonologically, the etymology is not unambiguous, because in inherited Finno-Ugric vocabulary nouns with a PFU **ē*, the long vowel corresponds to Proto-Mordvinic **e* [~ **ä*], Erzya *e*, Moksha *ä*, as in **kēli* > E *kel'*, M *käl'* (Bartens 1999: 55; Bereczki 1988: 320–321; Erkki Itkonen 1946: 311–315; Sammalhahti 1988). However, as Erkki Itkonen (1946: 311) notes, there is a regular dichotomy in the development of PFU **ē* in Mordvinic. In addition to Erzya *e*, Moksha *ä*, Proto-Mordvinic **i* is the other regular correspondence, although mainly attested in verbs. Bartens (1999: 58) points out that there is at least one noun, namely E *simeń*, M *śiməń* ‘tribe, family’ in which this would be the case and gives the reconstruction **sēmen* for Proto-Mordvinic. As a matter of fact, this word is a Baltic loanword, too (cf. above), but there seems to be no reason to reconstruct a Pre-Mordvinic **ē* in this case.

Nevertheless, the given etymology is phonologically plausible, if a similar development PFU **ē* > Proto-Mordvinic **i* is assumed as in the case of certain

inherited verbs, such as as Md E *niil’ems*, M *niil’oms* ‘swallow’ ~ Finnish and Md E *śimems*, M *śiməms* ‘drink’ ~ Finnish *siemata* ‘gulp down, take a gulp’ (with cognates in Estonian and Livonian; SSA 3: 172; UEW 773) as proposed by Erkki Itkonen (1946: 311) and Bartens (1999: 58; cf. Sammallahti 1988: 546).

		Saamic	Finnic	Mari
(1)	E <i>al</i> , M <i>al</i> ‘egg’	–	+	–
(2)	E <i>čonda</i> , <i>čando</i> ‘price; value’	–	+	–
(3)	E <i>erke</i> , M <i>äärkä</i> , <i>jäärkä</i> etc. ‘lake, pond’	+	+	+
(4)	E <i>inže</i> , M <i>inži</i> ‘guest’	–	(+)	–
(5)	E <i>kardas</i> ‘yard’	–	–	–
(6)	E M <i>karks</i> ‘belt’ etc.	–	–	–
(7)	E <i>kerč</i> , <i>kerš</i> , <i>käärč</i> , M <i>kerdži</i> , <i>kerži</i> , <i>kärži</i> , <i>kerš</i> , <i>kerēš</i> ‘left’	–	–	–
(8)	E <i>kirda</i> , M <i>kärdä</i> ‘turn; habit, manner’ etc.	–	+	–
(9)	E <i>kodor</i> , M <i>kodär</i> , <i>kodärks</i> ‘(plant’s) stake’	–	(+)	–
(10)	E <i>kšna</i> , <i>šna</i> , <i>kišna</i> , M <i>šna</i> , <i>šâna</i> ‘strap’	–	+	(+)
(11)	E <i>lango</i> , M <i>langa</i> ‘surface, cover; low’	–	–	–
(12)	M <i>luv</i> ‘space between two fingers’	(+)	(+)	(+)
(13)	E <i>luvodëms</i> , <i>lungid’ums</i> , M <i>lungädäms</i> , <i>luvädäms</i> ‘loosen’ etc.	+	+	–
(14)	E <i>lepe</i> , M <i>lepe</i> ‘alder’	–	(+)	–
(15)	E <i>l’ija</i> , <i>il’ja</i> , M <i>lijä</i> , <i>il’le</i> , <i>il’lä</i> ‘another, else’	–	(+)	–
(16)	E M * <i>mala</i> ‘next, surrounding’ etc.	(+)	+	–
(17)	E <i>mukoro</i> , <i>mukura</i> , <i>mukor</i> , <i>nukur</i> , M <i>mäkär</i> , <i>mukär</i> ‘back’ etc.	–	–	–
(18)	E <i>panst</i> , <i>panct</i> , M <i>pandǟs</i> , <i>pandaz</i> , <i>panc</i> ‘bridle’	–	–	–
(19)	E <i>pejel’</i> , <i>pejil’</i> , <i>päjel’</i> , <i>pijel’</i> , M <i>pejəl’</i> , <i>pejel’</i> , <i>pel’</i> etc. ‘knife’	–	–	–
(20)	E <i>penge</i> , M <i>pengä</i> ‘log, firewood’	–	–	–
(21)	E <i>puřgíne</i> , <i>puřgiňi</i> , <i>piřgeňe</i> , <i>piřgiňe</i> , <i>piřgimä</i> , M <i>puřgänä</i> , <i>pärgänä</i> ‘thunder’	–	(+)	–
(22)	E <i>potmo</i> , <i>potno</i> , M <i>potma</i> , <i>potmä</i> ‘inside; inner stomach’ etc.	–	–	–
(23)	E <i>pusmo</i> , M <i>pusma</i> , <i>busma</i> ‘bunch, bundle’	–	–	–
(24)	E <i>raške</i> , M <i>raškä</i> ‘relative, friend’ etc.	–	–	–
(25)	E <i>raško</i> , M <i>raška</i> ‘inner side of a corner’ etc.	–	+	–
(26)	E <i>réđams</i> , <i>räđams</i> , M <i>räđams</i> ‘notice’ etc.	–	–	–
(27)	E <i>rišme</i> , M <i>rišmä</i> ‘chain; rope; string’	(+)	(+)	–
(28)	E M <i>rudas</i> etc. ‘dirt, mud’	–	–	–
(29)	E <i>simeń</i> , M <i>śiməń</i> ‘tribe, family’	–	–	–
(30)	E <i>šenže</i> , <i>šeńš</i> , <i>šenš</i> ‘duck’	–	+	–
(31)	E <i>šerže</i> , <i>šerže</i> , <i>šaržə-</i> , M <i>šarža</i> , <i>šarža</i> ‘grey hair’ etc.	(+)	(+)	–
(32)	E M <i>talaj</i> ‘recently’ etc.	–	–	–
(33)	E <i>turtov</i> , <i>turto</i> , <i>tortov</i> ‘to; for’	–	–	–
(34)	E <i>terídems</i> , <i>täřid’ems</i> , <i>teríd’ims</i> , <i>terégems</i> , M <i>terídäms</i> ‘call; invite’	–	–	–
(35)	E <i>tožan</i> , <i>túžän</i> , M <i>tožän</i> , <i>tožäń</i> , <i>tožom</i> ‘1000’	–	+	+
(36)	E <i>viř</i> , M <i>viř</i> , <i>viřä</i> ‘forest’	–	–	–

Table 2. The distribution of assumed Baltic loanwords in Mordvinic with a possible shared or convergent borrowing in the Saamic, Finnic or Mari languages. Convergent borrowings are marked with brackets ().

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