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15.1 Introduction

Since the times of Bopp and Schleicher, Baltic and Slavic have been treated as a single branch of the Indo-European language family. Throughout the nineteenth century, this view remained unchallenged, and it is presented as received wisdom in Brugmann's *Grundriss* (1897: 20–1). At the beginning of the twentieth century, however, Meillet (1905: 201–2; 1922: 40–8) challenged the idea of a Balto-Slavic unity and argued that those similarities between Baltic and Slavic that are not archaisms inherited from (dialectal) Proto-Indo-European are due to parallel innovations. Throughout the twentieth century, the matter remained controversial. Balto-Slavic unity was defended by Rozwadowski (1912) and Vaillant (1950: 14), for example, while scholars like Senn (1941; 1970), Fraenkel (1950: 73–112), Pohl (1992), Schmid (1992) and Andersen (1996) remained sceptical and explained the similarities in terms of language contact and convergence. During the last quarter of a century, the *communis opinio* appears to have moved firmly in favour of the idea that there was indeed a period of shared innovations between Baltic and Slavic directly following the disintegration of the Proto-Indo-European parent language. As Olander (2015: 24) aptly put it: “By tracing back the identical developments in the two branches to a common ancestor we obtain the simplest model of the relationship between Baltic and Slavic, without a notable loss of explanatory power”.

Recent overviews of the shared Baltic and Slavic features that are relevant for the Balto-Slavic question can be found in Hock (2004, 2005), Euler (2007: 10–15), Young (2017), Petit (2018) and Villanueva Svensson (in press). Excellent general overviews of the scholarly literature have been given by Petit (2004), Hock (2006) and Dini (2014: 200–13). This chapter will discuss the most compelling phonological, lexical and morphological evidence in favour of a Balto-Slavic clade, after which it will address dialectal variation within Proto-Balto-Slavic, the internal grouping of Balto-Slavic, external affiliations of Balto-Slavic and linguistic contacts of Proto-Balto-Slavic.

First, however, it is useful to take a brief look at Balto-Slavic from an archaeological and palaeogenetic perspective.

Anthony (2007: 348) associated Balto-Slavic (pre-Baltic and pre-Slavic) with the Middle Dnieper culture that lasted from approximately 2800–2600 until 1900–1800 BCE. This is consistent with the linguistic evidence that the speakers of Balto-Slavic practised little agriculture (Pronk & Pronk-Tiethoff 2018: 304–8). Together with the closely related Fatyanovo culture to its northeast, the Middle Dnieper culture covers the area in which Baltic- or Balto-Slavic-looking hydronyms are found (Gimbutas 1963: 91; Anthony 2007: 380). Both these cultures belong to the larger Corded Ware horizon.

The split between Baltic and Slavic must have taken place a long time after the split of Balto-Slavic from other Indo-European groups in view of the large number of Balto-Slavic innovations. A date much before the beginning of the second millennium BCE is therefore unlikely. This makes it questionable whether the people who introduced genes from the Pontic-Caspian Steppe into the Baltic region during the third millennium BCE (Mittnik et al. 2018) and the people of the Rzucewo or Bay Coast Culture of the same period were speakers of early Baltic (*pace* Rimantienė 1992). They might have been the ancestors of Balto-Slavic speakers, as suggested by Kortlandt (2018a), in which case the idea that Balto-Slavic was still spoken on the Middle Dnieper during the third millennium BCE must be rejected. It seems more likely that the people who brought steppe genes into the Baltic region in the third millennium spoke another, now lost, dialect of Indo-European (cf. Kortlandt 2018a).

In the basin of the Dnieper river, the speakers of Balto-Slavic apparently picked up names for fish such as the wels catfish (Lith. *šāmas*, Ru. *som*), tench (Lith. *lūnas*, Ru. *lin'*), sturgeon (OPr. *esketres*, Ru. *osētr*) and perhaps ruffe (Lith. *ež(e)gỹs*, Pol. *jażdż*, *jazgarz*).¹ The importance of rivers and fishing for the speakers of Balto-Slavic may also be reflected in the fact that Baltic and Slavic uniquely share verbs for wading (Lith. 3pres. *breñda*, Ru. 1sg.pres. *bredú*) and diving (Lith. *nėrti*, RuCS *vb-nrėti*), and nouns for spawning (Lith. *neřštas*, Ru. *nėrest*), dugout canoe (Lith. *eldijà*, OCS *aldii*) and raft (Latv. *pluts*, Ru. *plot*). The Baltic name for the pike (Lith. *lydỹs*, OPr. *liede*), a fish that was an important food source in the Baltic area during the Neolithic (Rimantienė 1992: 105), has no cognate in Slavic, but this could be due to a later replacement.

From the middle Dnieper region, the ancestors of the speakers of West and East Baltic would have moved along the rivers into the forests to the north, where they borrowed words for woodland animals such as the elk (Lith. *briedis*, Latv. *briēdis*, OPr. *braydis*), woodpecker (Lith. *genỹs*, Latv. *dzenis*,

¹ Because of the different vowels in the suffix, it seems likely that Lith. *lašišà* and Ru. *losós'* 'salmon' were borrowed independently from similar sources, as was OHG *lahs* 'salmon'.

OPr. *genix*), hawk (Lith. *vānagas*, Latv. *vanags*, OPr. *spergla-wanag* ‘sparrowhawk’) and perhaps bear (Lith. *lokys̄s*, Latv. *lācis*, OPr. *clokis*) from an unknown non-Indo-European language. Because there are very few shared innovations between Old Prussian and East Baltic (see Section 15.3.2), it would seem likely that they were spoken by different groups shortly after the migrations to the north and north-west from the Dnieper basin. Most if not all common East Baltic innovations, including the creation of new locative cases due to contact with another, most probably Uralic language, could have taken place before the East Baltic languages entered the Baltic coastal areas.

The speakers of pre-Proto-Slavic would originally have occupied the area between the Middle Dnieper and Upper Dniester (Anthony 2007: 379–80). Before their spread across Central and Eastern Europe after 500 CE, they can be most probably located to the north-east of the Carpathian mountains (Udolph 1979: 619–23) and have often been associated with the Zarubinty culture (appr. 300 BCE–100 CE, see e.g. Maksimov in Rusanova & Symonovič 1993: 36–9).

A study of the Y chromosome of Slavic populations supports the hypothesis that the Slavic expansion started from present-day Ukraine (Rębała et al. 2007). So far, no support for Proto-Balto-Slavic has been found in studies of DNA. Rębała et al. (2007) found significant differences in Y-chromosomal haplogroup distribution between Slavic and Baltic populations. Baltic populations are genetically the closest to East Slavs, but this is probably due to a Baltic substrate in northern East Slavic (Kushniarevich et al. 2015).

15.2 Evidence for the Balto-Slavic Branch

15.2.1 Phonology and Relative Chronology

In a 2005 article, Matasović (2005b) discussed the following eleven phonological innovations that are found in Baltic and Slavic:

1. depalatalizations of palatovelars
2. satemization
3. the *ruki* rule
4. Hirt’s Law²
5. the development of syllabic resonants
6. Lidén’s Law³
7. loss of word-final **-d*
8. Winter’s Law⁴
9. **o > *a*

² I.e. a stress retraction onto a preceding syllable in which the nucleus was followed by a laryngeal.

³ I.e. loss of word-initial **l-* before **-r-*, perhaps also before **-l-*.

⁴ I.e. lengthening of a preceding vowel and introduction of acute intonation in a preceding syllable by what are traditionally reconstructed as voiced unaspirated stops.

10. deaspiration of the aspirated stops⁵

11. loss of laryngeals.⁶

Matasović concluded that these innovations could have occurred in the same chronological order and that no Baltic or Slavic innovation can be shown to have occurred before these innovations. The relative chronology of Balto-Slavic sound changes set up by Kortlandt (2011: 157–76; 2009: 43–6) leads to the same conclusion. The list of shared innovations can be extended by adding, e.g., the evolution of Baltic and Slavic mobile accentuation (Pedersen 1933; Olander 2009, 2019; Jasanoff 2017; Kortlandt 2018b). The exact phonetic conditions of some of the sound laws and their exact chronological order remain a matter of debate (cf. Hock 2006 with ample references to the relevant literature), but this does not affect the conclusion that Baltic and Slavic had a long shared history after Proto-Indo-European had dissolved.

15.2.2 *Shared Innovations in the Core Lexicon*

The existence of a unitary Balto-Slavic proto-language is confirmed by the fact that Baltic and Slavic share a number of lexemes belonging to the core vocabulary that are either not found in other Indo-European languages or that show identical morphological or semantic innovations compared to cognates in other Indo-European languages. The examples can easily be drawn from Trautmann's 1923 dictionary or from Sławski 1970. The following seventeen etyma with a meaning that is usually thought to belong to the core vocabulary are exclusively Balto-Slavic: **put-* 'bird', **konzd-* 'to bite', **skeit-* 'to count', **touzk-* 'fat', **nog-* 'foot, leg', **ronkaz* 'hand, arm', **golzua?* 'head', **rogos* 'horn', **ledus* 'ice', **ke/ol-* 'knee', **edzero* 'lake', **uelk-* 'to pull', **dz/guaizd-* 'star', **solzdus* 'sweet', **met-* 'to throw', **bo/ēlz-* 'white', **su(n)* 'with'. Based on the 1971 Swadesh 100 list or the 2019 Jena 170 list (see www.eva.mpg.de/linguistic-and-cultural-evolution/research/ie-cor/) of core lexical meanings, this amounts to around 10 per cent of the total reconstructed Proto-Balto-Slavic basic lexicon.

15.2.3 *Shared Morphological Innovations*

There are numerous shared innovations between Baltic and Slavic in morphology. The following list is far from complete, but it contains those items that

⁵ I.e. merger of what are traditionally reconstructed as *mediae* and *mediae aspiratae*.

⁶ This should be changed into the merger of the laryngeals into a single segment, probably a glottal stop. The eventual loss of this segment occurred independently in Baltic and Slavic in view of OCS *kamy* 'stone' < **kaHmōn*, with metathesis from PIE **h₂ekmōn*, but Lith. *akmuō* 'stone' without metathesis (although Matasović 2005b: 152 does not consider this evidence to be conclusive). On the dating of the loss of the laryngeals as segments in Balto-Slavic, see also Kortlandt 2009: 6.

are fairly indisputable. For these and other proposed shared innovations, the reader is referred to the literature cited in the introduction, especially Hock 2005 and Villanueva Svensson in press, as well as Stang 1966: 18–20, Gołąb 1992: 50–1, and Kortlandt 2016c, 2018c.

Shared innovated nominal endings:

- *o*-stem gen.sg. **-ā* (Lith. *-o*, OCS *-a*, in OPr. *-as* enlarged with *-s*, see below) < PIE abl. **-oed*
- the generalized consonant stem gen.sg. **-es* (OLith., OPr. *-es*, OCS *-e*) ← PIE **-es*, **-os*
- consonant stem instr.pl. **-mizs* (Lith. *-mis*, OCS *-mi*) ← PIE **-b^his*(?)
- adjectival *o*-stem neuter nom.acc.sg. **-o* (Lith. *-a*, OPr. *-a*, OCS *-o*) < PIE pronominal **-od*

Shared innovations in nominal derivation:

- deadjectival abstracts and nomina actionis in **-b-* (Lith. *-ba*, *-yba*, *-ybė*, OCS *-ьba*, *зъlobь*, *зъloba* ‘malice’, Arumaa 1955; probably from PIE **-b^hh₂-* ‘to become’)
- deverbal abstracts in **-imo* (Lith. *-imas*, OCS *-ьmo*, ultimately < PIE **-mn-* (Pronk 2014))
- grammaticalization of the adverbial ending **-ai* (Lith., OPr. *-ai*, OCS *-ě*) < PIE loc.sg. **-oi*

Shared innovations in the morphology of the verbal system:

- preterits/aorists in **-ā* (Lith. *-o*, OPr. *-a*, OCS aor. *-a*)
- verbs with pres. **-ou̯je/o-*, pret. **-ou̯ā* (Lith. pres. *-auja*, pret. *-avo*, OPr. 3pres. *-awie*, OCS pres. *-ujq*, aor. *-ova*)
- statives in **-e₂-* with an *i*-present (OPr. *turīt*, *turri* ‘have’, Lith. *budėti*, *būdi*, ORu. *бѹдѣти*, *бѹдимь* ‘be awake’)
- perfects joining the preceding category (Lith. *garėti*, *gāri* ‘evaporate’, ORu. *gorėti*, *goritь* ‘burn’)
- transformation to a thematic present of PIE perf. **mog^h-* ‘be able’
- present stems **dozd-* ‘give’ and **ded-* ‘put’ (OLith. *duosti*, *dest*, OPr. *dāst*, OCS *dastь*, *-deždq*) ← PIE pres. **di/e-deh₃-*, **d^hi/e-d^heh₁-*
- 2sg. pres. **esezi* ‘you are’ ← PIE **h₁esi* (Lith. *esi*, OPr. *assai*, OCS *jesi*) (Kortlandt 2009: 156)
- causatives in **(e)i-* (Lith. *báudinti*, *báudyti* ‘urge’, OCS *въз-будити* ‘awaken’) ← PIE **-eie-*
- oblique forms of the masculine and neuter present active participle in **-ont-je/o-* (e.g., gen.sg.m. Lith. *nėsančio*, OCS *nesqšta* ‘carrying’)
- infinitives in **-izt(e)i* with analogical **-z-* after infinitives in **-ert(e)i* and **-azt(e)i* (Lith. *-yti*, *-ėti*, *-oti*, OCS *-iti*, *-ėti*, *-ati*)

Further, there are some nouns in which Baltic and Slavic have (near) identical derivatives from Indo-European roots. In Trautmann’s 1923 dictionary we find, inter alia, Lith. *āvinas*, OPr. *awins*, ORu. *овьнъ* ‘ram’, Lith. *artójas*, OPr.

artoys, OCz. *rataj* ‘ploughman’, Lith. *plaučiai*, OPr. *plauti*, OCS *plūšta* ‘lung(s)’, Lith. dial. *péntis*, OPr. *pentis*, OCS *pęta* ‘heel’.

15.2.4 *Shared Syntactic Innovations*

Due to the difficulty of reconstructing Proto-Indo-European syntax, it is also difficult to identify any syntactic innovations that Baltic and Slavic may have shared. In general, there are few methodological tools that we can use to determine whether any similarities in the structural properties of Baltic and Slavic are due to shared inheritance, shared innovation, independent innovation or mutual influence. Therefore, “the issue of Balto-Slavic ‘unity’ . . . should center around phonology, morphology, and the lexicon” (Holvoet 2018: 2001).

A seemingly shared Balto-Slavic syntactic feature is reflected in the definite adjectives that are attested in both branches, e.g. Lith. *geràsis*, OCS *dobryi* ‘good’. These definite adjectives derive from a nominal sentence in which a relative pronoun connects two nominal forms, agreeing in case, number and gender with the first of these nominals (Petit 2009). Parallels for such a construction are found in Iranian (Meillet 1922: 44). This syntactic construction “predat[es] at least the split between Balto-Slavic and Indo-Iranian” (Widmer et al. 2017: 811) and is likely to be an archaism inherited from PIE (Petit 2009: 354–5). The only plausible shared Balto-Slavic syntactic innovation reflected in the definite adjectives is the agreement between the relative pronoun and the head of the construction, which is also found in Iranian (Petit 2009: 354–5).

The most promising example of a syntactic innovation that is shared by Baltic and Slavic only and less likely to have arisen independently or as a result of contact between Baltic and Slavic is the complete loss of the Proto-Indo-European middle voice and its replacement by reflexive verbs in at least some of its functions. See Holvoet 2020 for an extensive discussion of this issue.

15.3 **The Internal Structure of Balto-Slavic**

15.3.1 *Proto-Balto-Slavic Dialectal Differentiation*

One might wonder whether any dialectal differentiation that might have been present in Proto-Balto-Slavic was carried over into Baltic and Slavic. According to Olander (2015: 24) “there are cases of variation that cannot be avoided in a reconstructed Balto-Slavic proto-language, such as the existence of different lexemes for the same notion, or the existence of variants with initial **a* or **e* in the same lexeme in different areas (Andersen 1996: 206 and passim)”. Because the lexical data is open to various interpretations, I will here focus on the variants with initial **a* or **e*, such as Ru. *orël* but Lith. *erėlis* ‘eagle’ < PIE **h₂er-l-*.

Andersen proposed a scenario in which the variation arose within a Baltic-Slavic dialect continuum, even before some of the common Balto-Slavic innovations mentioned at the beginning of this chapter (1996: 106–7). The dialectal variants would have continued to coexist throughout the Proto-Slavic and Proto-East-Baltic periods and, in some cases, in the modern Slavic and Baltic languages. Such a long period of coexisting variants of the same words is highly unlikely and not supported by the data. Instead, branch-internal mechanisms caused the rise of the variation in initial vocalism.

In Slavic, it has long been clear that the variation between initial *je-* (< **e-*, **je-* or **ja-*) and *o-* (< **a-*) cannot be separated from that between *u-* and *ju-* in OCS *utro*, *jutro*, or that between *a-* and *ja-* in OCS *aviti*, *javiti*, ORu. *azъ*, *jazъ*. The variation is due to sandhi variants that arose when a yod developed in hiatus between two vowels, one of which was a front vowel (Pedersen 1905: 311). Similarly, words with an initial vowel developed a sandhi variant with initial **u-* if they were preceded by a word ending in a rounded vowel, e.g. Cz. *vejce* ‘egg’ < **ajъce*. Some instances of initial *je-* are the result of the regular umlaut **ja-* > **jā-* > **je-* and thus originally positional variants of **a-* > **o-*. The alternations between initial **uo-*, **je-* and **o-* and between **e-* and **je-* in sandhi led to the generalization of one of the variants, and sometimes to the analogical introduction of an etymologically “incorrect” onset, e.g. in the word for ‘wasp’, which is **osa* in almost all of Slavic, but *vosa* in Czech. The Czech form is the older variant in view of outer-Slavic cognates such as Lith. *vapsvā* and Lat. *vespa*. The variant **osa* must be due to reinterpretation of **vosa* as a sandhi variant after rounded vowels (Pedersen 1905: 312).

There is no reason to assume that the Baltic variation between initial *a-* and *e-* and the Slavic alternation between initial *o-* and *je-* are in any way related (see further Derksen 2002; Kortlandt 2011: 255–8). They therefore provide no evidence for a Balto-Slavic dialect continuum, nor for a shared innovation.

The strongest potential evidence for inner-Balto-Slavic variation that I am aware of is the 1sg. personal pronoun **h₁eg̃*, that underwent Winter’s Law (> Proto-Balto-Slavic **eʔdʒ*) and produced ORu. *ja*. In Baltic, the same pronoun has a voiceless sibilant and a short vowel: OLith. *eš*, Latv. *es*, OPr. *as*, *es*. The Baltic forms seem to suggest that there was a positional variant **h₁ek̃* before a following word beginning with a voiceless consonant that did not undergo Winter’s Law. If this is correct, Slavic and Baltic may have generalized different sandhi variants. The generalization of one of the variants could of course have happened at any point after Winter’s Law, and not necessarily before the dissolution of Proto-Balto-Slavic. Other explanations are also conceivable. Kortlandt (2013a), for example, argued that the Baltic forms and Slavic **ja* are the result of post-Proto-Balto-Slavic shortenings of original **eʔdʒum*, preserved in Slavic as *(*j*)*azъ* (e.g. ORu. *jazъ*). In either

scenario, there is no compelling evidence for internal differentiation within Proto-Balto-Slavic that was carried over into Baltic or Slavic.

15.3.2 *Internal Grouping*

Traditionally, Balto-Slavic has been divided into Baltic and Slavic, with a further split between West and East Baltic after a period of common Baltic innovations. The separate status of Slavic is evident, but the existence of a period of common Baltic innovations is more difficult to demonstrate; see most recently Villanueva Svensson 2014, Hill 2016 and Kortlandt 2018c with references to the older literature. Stang (1966: 2–10) lists the similarities between the Baltic languages that set them apart from all other Indo-European languages, including Slavic (notation as in the original):

- complete merger of the 3sg. and 3pl. verbal endings
- two preterit classes in **-ē* and **-ā*
- a distribution between the 3rd person verbal endings **-ti* to monosyllabic stems and **-t > zero* to polysyllabic stems
- 1sg. athematic **-māi*
- a thematic vowel *-a- < *-o-*, never **-e-*
- nominal *ē*-stems
- intrusive **k* before consonant clusters beginning with **s*
- nomina actionis with the suffix **-sĭan-*, perhaps also **-sen-*
- nouns in **-ūnas*
- diminutive suffixes **-ĕlija-*, **-už-*, **-ut-*, **-ait-* (also in patronymics)
- adjectives in **-ing-*
- identical compound names, often with a binding vowel **-i-*
- *ā*-presents to verbs in **-īti*
- *sta*-presents to middle/intransitive verbs
- causatives in **-ina-*
- a large amount of uniquely shared lexicon, including identical derivatives from inherited roots and semantic innovations in inherited material (cf. Petit 2010: 10–11).

To these we can add the loss of **-j-* between a consonant and a front vowel (Villanueva Svensson 2014: 165) and the identical restructuring of some Proto-Indo-European consonant stems and root nouns: Lith. *akis*, OPr. *ackis* ‘eye’, Lith. *ausis*, OPr. acc.pl. *āusins* ‘ear’ (Hill 2016: 210–11), Lith. *saulė*, OPr. *saule* ‘sun’, Lith. *gėrvė*, OPr. *gerwe* ‘crane’, Lith. *žemė*, OPr. *semmē* ‘earth’, Lith. *dienà*, OPr. acc.sg. *deinan* ‘day’. Other proposed shared innovations, such as the change of **-ijā* to **-ē* (Petit 2010: 6; Villanueva Svensson 2014: 165; cf. also Hill 2016) and the shortening of unstressed **-ī < *-eie-* (Hill 2016: 214–22; Villanueva Svensson 2019), remain the subject of debate.

In the former case, if there was a raising of **-ijā* to **-ijē*, it may well have been shared by Slavic, cf. the type OCS *mlъnii* (f.) ‘lightning’ < **-ijē*. This leaves the contraction and associated metatony as potentially shared Baltic innovations, but consider the general preservation of **ā* after yod in other positions (e.g. Lith. *jóti* ‘to ride’, *bijóti* ‘to fear’, *valià* ‘will’ etc.) and further objections raised by Kortlandt (2018c). The alleged change of **-ijā* to **-ē* thus remains poorly understood and cannot serve as evidence for the branching of Balto-Slavic.

Most evidence for Hill’s contraction of unstressed **-ī̄* < **-eie-* is judged to be inconclusive by Villanueva Svensson (2019), except for the PIE *i*-stem dat. sg. ending **-eiei*, for which the common Baltic evidence would be the *ti*-stem dative **-ti* < **-teiei* (Skt. *-taye*) that was grammaticalized as an infinitive (Lith. *-ti*, Latv., OPr. *-t*). We are thus dealing with a sound law that explains only a single morpheme, which weakens it considerably. Moreover, the Baltic infinitive ending **-ti* has a potential counterpart in Slavic. Next to the well-known Slavic infinitive ending **-ti*, there is a widespread variant **-tb*, which could go back to Balto-Slavic **-ti*. There cannot have been a general reduction of unstressed **-i* to **-b* in Slavic, because nominal endings in *-i*, e.g. several forms of the *i*-stems, nom.pl. *-i* in the *o*-stems, instr.pl. *-mi* etc. are never reduced (cf. Vaillant 1950: 219–20). This means that the shortening in the infinitive of unstressed **-tī̄* > **-ti* > **-tb*, if that is indeed how the Slavic variants arose, only affected the specific pre-Proto-Slavic sequence that produced *-i* in the infinitive and perhaps in the athematic imperative, cf. OCS *daždb* ‘give!’ < 2sg. optative **-iehl-s(?)*. However, it did not affect the dat.sg. ending *-i* of the *i*- and *u*-stems, which was also unstressed. In short: the Baltic infinitive ending **-ti* has a potential parallel in Slavic, so the alleged shortening of an alleged Proto-Balto-Slavic infinitive ending **-tī̄* cannot be used as evidence for a Proto-Baltic stage.

Many of the shared features of West and East Baltic can be and have been argued to be either inherited from Proto-Balto-Slavic and lost in Slavic or independent innovations, most prominently by Kortlandt (2018c with references to earlier works). In order to demonstrate that there was indeed a period of shared Baltic innovations, the innovated feature must not only be shared by West and East Baltic, it must also be shown to have never existed in Slavic, and its introduction should not be a trivial development. Few of the shared features collected by Stang and others fulfil these criteria. The shared derivational suffixes on Stang’s list could all have been lost in Slavic. The same is true for lexical items such as Lith. *turėti*, Latv. *turēt*, OPr. *turrītwei* ‘to have’ and Lith. *gimti*, Latv. *dzimt* ‘to be born’, OPr. *gemmons* ‘born’. The semantic innovation in Lith. *girià*, Latv. *dziņa* ‘forest’, OPr. *garian* ‘tree’ versus OCS *gora* ‘mountain’ turns out to be trivial if one takes a closer look at the semantics of the Slavic cognates, cf. Bulg. *gora*

and Slk. *hora* ‘forest’. The word appears to have designated a wooded slope or mountain in Proto-Slavic and Proto-Balto-Slavic. The semantic innovation in Lith. *mėdis* ‘tree’, Latv. *mežs*, OPr. *median* ‘forest’ versus OCS *mežda* ‘boundary’ is also trivial, cf. Sln. dial. *mej* ‘forest’ from the same root and the connection between Lith. *vidūs* ‘middle’ and Old English *widu* ‘wood’.

The most robust evidence for a Proto-Baltic period is, in my view, presented by the productivity of nominal *ē*-stems (whatever their origin), the (near) merger of 3sg. and 3pl. verbal forms, the loss of **-j-* between a consonant and a front vowel and the identical evolution of a number of former consonant stems and root nouns. This seems to suggest that there was indeed a Proto-Baltic period, which lasted for at least a few generations but probably no longer than a few centuries.

It has long been clear that West and East Baltic are also separated by some isoglosses that connect East Baltic with Slavic. The most often cited examples are the following (see Villanueva Svensson in press for a few more inconclusive examples):

- the *o*-stem gen.sg. ending (Lith. *-o*, OCS *-a* < PIE abl.sg. **-oed* versus OPr. *-as*)
- the initial consonant in the word for ‘nine’ (Lith. *devyni*, OCS *devětъ* versus OPr. *newīnts* ‘ninth’)
- the word for ‘third’ (Lith. *trėčias*, OCS *tretii* versus OPr. *tīrts, tirtis*)
- presence versus absence of *-s-* in the dat.sg. and loc.sg. of the demonstrative pronoun (Lith. *tāmui, tamė, tiai, tojė*, OCS *tomu, tomb, toi* versus OPr. *stesmu, stessei*).

It is, however, uncertain that these isoglosses are the result of shared innovations of only East Baltic and Slavic. In the first three cases, East Baltic and Slavic may preserve the Proto-Balto-Slavic situation, and in the fourth case they may have innovated independently.

The Prussian *o*-stem gen.sg. ending *-as* has been explained from PIE **-oso, *-osio, *-os*, as analogical to the feminine *ā*-stem ending *-as* (Leskien 1876: 31–3), or from the same **-oed* as East Baltic with addition of the genitive singular marker **-s* (Vaillant 1958: 30; see further Rinkevičius 2015: 106–7 with literature). The latter explanation seems to be the least problematic phonetically, and it has been suggested that traces of an earlier *s*-less ending *-a, -u* may exist within Old Prussian (Leskien 1876: 33–4; Girdenis & Rosinas 1977: 3; Kortlandt 2009: 192). There is therefore no demonstrably old distinction between West and East Baltic in this ending.

The introduction of *d-* in ‘nine’ (see above) is due to anticipation of the *d-* of ‘ten’ when counting. It is plausible that it first affected the cardinal and then spread to the ordinal numbers. For Proto-Balto-Slavic, one may then

reconstruct **deuin* ‘nine’, **neūintas* ‘ninth’, with preservation of the latter in OPr. *newīnts*.⁷

It is possible that East Baltic and Slavic shared the replacement of **tirtiōs* ‘third’, reflected in OPr. *tūrts*, *tirtis*, by **tretiōs*. It is, however, equally conceivable that the Prussian word was influenced by **ketūirtas* ‘fourth’ after the dissolution of Proto-Balto-Slavic (Mažiulis 2013: 912). It would then replace earlier **tretiōs*, which is itself best understood as a replacement of an even older **tritiōs*, cf. Av. *θritiia-*, Lat. *tertius*, Goth. *þridja* < **tri-t(H)-iHo-*, on the basis of **trejes* ‘three’. If that is the case, the resemblance between OPr. *tirtis* and Skt. *trītya-* ‘third’ is coincidental.

The analogical removal of *-s-* in the pronominal dat.sg. and loc.sg. Lith. *tāmui*, *tamè*, *tái*, *tojè* and OCS *tomu*, *tomь*, *toi* was an innovation in contrast to its preservation in OPr. *stesmu*, *stessei* ‘that’, cf. Skt. *tásmai*, *tásmin*, *tásyai*, *tásyām*.⁸ The replacement was part of the general loss of the distinction between the direct and oblique cases in the pronoun, cf. OPr. dat.sg.f. *tennei* ‘her’ ← **tenness(i)ei* after nom.sg. *tennā* ‘she’, but preservation of dat.sg.f. *stessiei* to nom.sg.f. *stai*. It is conceivable that the removal of *-s-* occurred independently in East Baltic and Slavic, as in OPr. *tennei*. The removal of *-s-* was ultimately the result of the elimination of the suppletive nominatives m. **sa* and f. **saH*, which probably took place after the dissolution of Proto-Balto-Slavic as well (Kortlandt 2009: 139).

It seems most likely that, after the dissolution of Proto-Balto-Slavic, West and East Baltic remained a single unit for a relatively short period. There may have been a few shared innovations between East Baltic and Slavic during this same period, although the evidence is not very robust. If this is indeed the case, however, the dissolution of Balto-Slavic could be seen as a gradual process with increasing dialectal differences, “with East Baltic as an intermediate dialect between West Baltic and Slavic” (Kortlandt 2018c: 176).

15.4 The Relationship of Balto-Slavic to the Other Branches

15.4.1 Genealogical Relations

The perpetual question as to whether there was a period of shared Balto-Slavic and Germanic innovations is probably to be answered in the negative. The key argument has always been the **-m-* of the dat. and instr.du.pl. endings in Balto-Slavic (pl. OLith. *-mus*, *-mis*, OCS *-mь*, *-mi*) and the dat.pl. in Germanic (Goth.,

⁷ It cannot be ruled out either that the *n-* of Old Prussian is due to German influence (Derksen 2015: 126).

⁸ Hill’s (2016: 224–7) explanation of the loss of **-s-* as phonetic in unstressed position before **-m-* is unconvincing. This highly specific and phonetically problematic sound law is set up to explain the single morpheme **tosm-*. It does not account for the feminine forms.

OHG *-m*) that contrast with **-b^h-* in the instr.pl. in Greek (*-φι*) and Armenian (*-b*), dat. and instr.du.pl. in Indo-Iranian (pl. Skt. *-bhyas*, *-bhis*) and dat.pl. in Italo-Celtic (Lat. *-bus*, OIr. *-b*). Because **-b^h-* is most clearly at home in the PIE instrumental plural ending, and **-m-* cannot have arisen out of thin air, it is likely that the Germanic and Balto-Slavic dative plural endings are archaic (Hirt 1895; Beekes 2011: 188). In other words, the Core Indo-European ending contained an **-m-*, which was replaced by **-b^h-* from the instrumental in Latin and Indo-Iranian, while in Slavic instrumental **-b^h-* itself was replaced by **-m-* from the dative (see Olander 2015: 269–70 for alternative views). It is clear that a common innovation of the dat.pl. ending in Germanic and Balto-Slavic cannot be substantiated. There are no other common innovations in the nominal declension (Leskien 1876), nor are there any shared phonological innovations. Parallel syntactic structures, such as the absolute dative or the genitive of negation, cannot be used as evidence because they can represent (partial) archaisms or reflect parallel innovations. Any evidence for a period of shared Germano-Balto-Slavic innovations must thus come from the lexicon, nominal derivation or verbal inflection.

A significant part of the vocabulary that is shared exclusively by Germanic and Balto-Slavic, collected and discussed by Stang (1972) and Nepokupnyj et al. (1989), consists of words belonging to semantic fields that are prone to borrowing, such as flora and fauna. Some of the correspondences from semantic fields other than flora and fauna could easily be archaisms inherited from Proto-Indo-European, e.g. Goth. *ju*, Lith. *jaũ*, OCS (*j*)*u-že* ‘already’ < PIE **h₂ieu*; ON *lyðr*, Lith. *liáudis*, OCS *ľudije* ‘people’ < PIE **h₁leud^h-i-*; ON *ljóðr*, OCz. *l’ud* ‘people’ < PIE **h₁leud^h-o-*; MLG *noster(en)* ‘nostril’, Lith. *nasraĩ* ‘snout’, OCS *nozdrĩ* ‘nostrils’ < PIE **nh₂-(e)s-r-*; ON *súrr* ‘sour, bitter’, Latv. *sũrs* ‘salty, bitter’, OCS *syrb* ‘damp’ < PIE **suH-ro-*; OPr. *tũsimtons*, OCS *tysęšti*, Got. *þusundi* ‘thousand’ < PIE **tuHs-dkmt-*. The remaining shared vocabulary does not contain any obvious replacements of Proto-Indo-European basic vocabulary and is not numerous enough to warrant the reconstruction of a period of joint Germanic and Balto-Slavic innovations.

A morphological argument often adduced in favour of a Germano-Balto-Slavic node is the shared adjectival suffix **-isko-*, Goth. *-isks*, Lith. *-iškas*, OCS *-baskb*, which primarily indicates origin from a particular place (Kluge 1926: 104). The suffix may have been created by adding adjectival **-ko-* to local adverbs in **-is* of the type Skt. *bahĩh* ‘outside’, *āvĩh* ‘manifestly’. If there was no Germano-Balto-Slavic node, the suffix must have arisen in a small number of forms in Proto-Indo-European and have become productive independently in Germanic and Balto-Slavic but have been lost elsewhere. This is conceivable. Vaillant’s (1958: 682) idea that the Slavic suffix was borrowed from Germanic and the Baltic one from Slavic seems unlikely, especially in view of Lithuanian *-š-*.

Another innovation perhaps shared between Balto-Slavic and Germanic is found in the semantics of nasal presents (Villanueva-Svensson 2011 with references). It has long been recognized that nasal presents in these languages are predominantly intransitive and have inchoative or fientive semantics, e.g. Goth. *ga-waknan* ‘to wake up’, Lith. *už-mìgti*, *-miñga* ‘to fall asleep’, OCS *vъz-bъnъti* ‘to wake up’. In other branches, nasal presents typically form causatives, factitives and intensives (see Meiser 1993 with references), but cf. Lat. *-cumbō* ‘lie down’. In Greek, Indo-Iranian, Tocharian and Anatolian, nasal presents are mostly transitive in the active form, though not exclusively, cf., e.g., Gr. *φθίω* ‘to decline, decay’. Some nasal presents in Balto-Slavic, on the other hand, are transitive, e.g. Lith. *gáuna* ‘to obtain’ and OCS *тъknъ* ‘to stab’.

The question as to whether the semantics of those Germanic and Balto-Slavic nasal presents that are inchoatives or fientives reflect a shared innovation depends on the reconstruction of the (pre-)Proto-Indo-European function of the nasal verbal suffix. Old Indo-European nasal presents are typically formed to roots with telic semantics. The nasal present appears to signify change of state (rather than “starkes Betroffensein”, Meiser 1993: 295) of the object of a transitive verb (cf. PIE **ui-n-d-* ‘find’) or the subject of an intransitive (unaccusative) verb. In addition, it is relevant that the suffix became a present marker and is never found in the aorist or perfect. This means that the oldest layer of nasal presents must have had progressive or ingressive semantics. They would thus have described the process of a change of state of either subject or object. Whether the nasal presents ended up as factitives and causatives or inchoatives and fientives depended on whether they were derived from a transitive or intransitive base. It has been argued that the intransitive Germanic and Balto-Slavic nasal presents derive from intransitive thematic aorists (Stang 1966: 340 for Balto-Slavic), middle root aorists (Kortlandt 2010: 219–20 for Germanic) or from the middle of the nasal present (Villanueva-Svensson 2011: 43; Kroonen 2012: 270 n. 11 for Germanic; cf. also Meiser 1993: 291–3). At least in Baltic, some nasal presents were derived from perfects: Lith. *kañka* ‘hang’, *rañda* ‘find’, *tañpa* ‘become’, *prañta* ‘acquire a habit or inclination’ (Stang 1966: 313, 315). The productivity of transitive or intransitive nasal presents, or indeed the lack of them, could be taken as a potential shared innovation of some branches of Indo-European, but it is a rather trivial development as long as it is assumed that both types existed in Proto-Indo-European. As an argument for a Balto-Slavo-Germanic node, the semantics of the nasal present are not particularly forceful.

A closer relationship between Balto-Slavic and any of the other branches is difficult to demonstrate as well. According to Kortlandt (2016a), “[t]he closest relatives of Balto-Slavic are Albanian and Indo-Iranian”, but shared innovations are few. Potentially shared phonological innovations are satemization,

which is also shared with Armenian, and the *ruki* rule, which possibly affected Armenian as well. In both cases, the shared innovation would have been the initial phonetic development, because the phonemicization of the rules is branch specific. Because phonetic changes can be reversed, it is impossible to show that none of the other branches took part in the initial, phonetic stages of satemization or the *ruki* rule as well. Consider in this respect the alleged *satem* reflexes in Luwian (Melchert 2012 with literature) and the Hieroglyphic Luwian sign *sa₃*, which occurs mainly in the vicinity of the *ruki* sounds (Rieken 2010).

Kortlandt (2018d: 287) proposed that the loss of a laryngeal between two vowels was a shared innovation of Balto-Slavic and Indo-Iranian. Laryngeals were also lost in this position in all other branches of Indo-European except Anatolian. In Greek, this loss produced a disyllabic sequence, but in Indo-Iranian and Balto-Slavic the result is a monosyllabic long vowel. In Indo-Iranian, laryngeals were also lost if the second vowel was **i* or **u*, producing a monosyllabic diphthong (Lubotsky 1995). In Balto-Slavic, the laryngeals were initially retained before **i* and **u* and eventually produced acute accentuation. The loss of intervocalic laryngeals was therefore an independent innovation in Balto-Slavic and Indo-Iranian.

Grammatical features shared by Indo-Iranian and Balto-Slavic are all archaisms (cf. Kortlandt 2016a). Kortlandt adduces the acc.sg. **h₁mēm* (Skt. *mām*, OCS *mę*) for older **h₁me* (Gr. *ἐμέ*) ‘me’ as a shared innovation, but this is incorrect. Skt. *mām* is sometimes disyllabic, which is best explained by assuming that it reflects PIE **h₁me* with the Indo-Iranian suffix **-Ham* of Skt. *āham* ‘I’, *t_(a)vām* ‘you’ etc.⁹ OCS *mę*, OPr. *mien* on the other hand, reflect **h₁me* to which the acc.sg. ending **-m* has been added (Olander 2015: 122–3).

The list of shared lexemes provided by Porzig (1954: 164–9) is too short to suggest a closer connection between Indo-Iranian and Balto-Slavic. It includes Skt. *kṛṣṇá-*, Lith. *kišnas*, OCS *črъnъ* ‘black’ < **krs-no-*; Skt. *tucchya-*, Lith. *tūščias*, OCS *toštъ* ‘empty’ < **tusk-io-*; Av. *spanta-*, Lith. *šveñtas*, OCS *svętъ* ‘holy’ < **kuen-to-* (possibly with Skt. *śuná-* ‘success’, Hitt. *kunna-* ‘right, favourable’, Duchesne-Guillemin 1947). These are best explained as inherited from PIE. The suffix **-no-* in Skt. *dákṣiṇa-*, Lith. *dėšinas*, OCS *desnъ* ‘right’ < **deks-(i-)no-* may also be an archaism because the suffixes that we find in the other branches, Gr. *δεξιός* < **deks-i-uo-*, Goth. *taihswa* and OIr. *dess* ‘right’ < **deks-uo-*, appear to have been taken over from PIE **lh₂ei-uo-* ‘left’. The lack of medial **-i-* in the Slavic form is not easily explained as an innovation. Lith. *dėšinas* and the Indo-Iranian forms may have been influenced by a lost adverb **deks-i-*, which is often assumed to have existed (Beekes 1994: 90; Stüber 2006).

⁹ I owe this observation to Martin Kümmel.

The discussion above leads to the conclusion that there are hardly any facts that can be better explained if it is assumed that Balto-Slavic was itself part of a larger subgroup of Indo-European.

15.4.2 *Linguistic Contacts of Balto-Slavic and the Depalatalization of Palatovelars*

Although much is known about the linguistic contacts of West Baltic, East Baltic and Slavic when these were already separate branches, language contact dating back to the Balto-Slavic period is more difficult to establish. The part of the Balto-Slavic lexicon that was not derived from inherited Proto-Indo-European material must have been borrowed from unknown contact languages, but these languages are elusive. Many, if not all, non-Indo-European lexemes that can be reconstructed for Proto-Balto-Slavic also have reflexes in other branches of Indo-European, which Matasović (2013: 98) attributes to a lack of direct contact between Balto-Slavic and non-Indo-European languages. The borrowings would have entered Balto-Slavic via an Indo-European intermediate. The main problem of this scenario is that the loanwords in question cannot have been borrowed directly from a known Indo-European language, for phonological reasons. At least one of the contact languages must have been an otherwise lost branch of Indo-European, perhaps the Temematic language argued for by Holzer (1989), cf. the discussion in Matasović 2013: 77–81, Kortlandt 2016b: 84 and Holzer 2018. More than one contact language is perhaps required, for example because the sound changes that would characterize Temematic, if real, are found only in part of the borrowed vocabulary. Kortlandt (2018a) argued for another Indo-European contact language, Venedic, “which contained an older non-Indo-European layer and was part of the Corded Ware horizon.”

There have been attempts to explain certain phonological peculiarities of Balto-Slavic as being due to language contact, but these have not been very successful. This can be illustrated by the so-called *centum* reflexes of the Indo-European palatovelars, the first development on Matasović’s list cited in Section 15.2.1. See Hock 2004: 11 for a survey of the relevant literature.

The Indo-European palatovelars **k̑*, **ǵ* and **ǵʰ* are in most cases reflected as sibilants in Baltic and Slavic, but both branches also have cases in which the palatovelars became velar occlusives. A detailed study of these cases reveals that the velar reflexes can in no way be regarded as being due to language contact, but must be due to a regular development in certain environments (Meillet 1894; Kortlandt 2009: 27–32; 2013b; Matasović 2005a). This is a priori an attractive scenario, because the words in question look like inherited Baltic and Slavic words in all other respects: there is no other phonetic or morphological reason to think that they might be loanwords and they do not

belong to a part of the lexicon that typically contains loanwords (Čekman 1974: 130–1). Moreover, there is a distribution with regard to the environment in which the velar reflexes are found: they virtually only occur when the following syllable contains a resonant or the semivowel **-u-*. This suggests that the velar reflex was regular before these sounds, in some cases with the additional condition that a back vowel must follow. The original distribution was somewhat obscured by the fact that quite a number of roots regularly obtained variants with sibilant and velar reflexes, depending on the ablaut grade. This variation was generally removed by analogy, unless there was a semantic and/or morphological difference between the variants. Consider the following examples of cognate words, which have both sibilant and velar reflexes:

- OCS *zelenъ*, Ru. *zelënyj* ‘green’, Lith. dial. *žėl̃tas* ‘greenish’, Latv. *zēlts* ‘gold’ < **g^hel-*

- Lith. *žālias* ‘green’, OCS *zlato* ‘gold’ < **g^hol-*

- Ru. *žėltyj*, Slk. *žltý* ‘yellow’ < **g^hl-*

Lith. *geļtas* ‘yellow’ is a contamination of Proto-Balto-Slavic **dzelt-*, cf. Latv. *zēlts*, and **gilt-*, cf. Ru. *žėltyj*. It is of course arbitrary to assume that Lith. *geļtas* is a borrowing and that all the other forms are inherited.

- Lith. *žārdas* ‘rack for drying flax’, Ru. *zoród, ozoród* ‘haystack’ < **g^(h)ord-o-*

- OCS *žrědbъ*, Ru. *žerd’* ‘pole’ < **g^(h)rd-i-*

- Lith. dial. *šlāvė* ‘honour’, OCS *slovo* ‘word’, *slyšati* ‘to hear’ < **kleu-*, **klūs-*

- Lith. *klausyti* ‘to listen’ < **klous-*

Baltic preserves both *kl-* and *šl-*, while Slavic generalized *sl-*: OCS *slušati* ‘to listen’, *slava* ‘fame’ < **klous-*, **klōu-*. Again, assuming that Lith. *klausyti* is a borrowing is extremely unlikely, if only from a semantic point of view.

- Lith. *šliėti*, dial. *šlinti* ‘to lean’ < **klei-*, **klin-*

- OCS *kloniti se* ‘to bow’, Ru. *klonít’* ‘to incline’ < **klon-*.

With **sl-* we find deverbal CS *sloniti se* ‘to lean’, a causative-iterative to **kli-n-*. There is no reason to separate Slavic **klon-* and **slon-* (ÈSSJ 10: 67). PSI. **kloniti* is probably a denominative to **klonъ* ‘inclination’, an *o*-stem derived from **kli-n-* ‘to lean’ (cf. YAv. *-srinaomi*).

- Lith. *šviėsti*, dial. *švitėti*, OCS *světěti se* ‘to shine’ < **k_ueit-*, **k_uit-*

- OCS *cvětъ*, Cz. *květ* ‘flower’ < **k_uoit-*

OCS *světъ*, Ru. *svet* ‘light’ < **k_uoit-* is a younger deverbal derivative, while the initial consonant of OCS *cvisti* ‘to bloom’ is analogical after the noun ‘flower’. Latv. *kvitēt* ‘to glimmer’ is identical to Lith. dial. *švitėti*, OCS *světěti se*, but has analogical *k-*.

- Lith. *šėšuras* ‘father-in-law’ < **s_uėkur-*

- OCS *svekry* ‘mother-in-law’ < **s_uėkru-*

PSl. **svekr̥b* ‘father-in-law’ (not **svekr̥rb*, cf. ORu. *svekr̥b* and the accent of Ru. *svěkor*, Serb., Cr. *svěkar* instead of †*svekór*, †*svèkar*) is based on **svekry* (Derksen 2008: 475).

- Lith. *akmuõ*, OCS *kamy* ‘stone’ < **h₂ekmō(n)*, -*mon-*

Cf. Skt. *áśman-* ‘stone’; the Slavic forms show metathesis **H...k* > **k...H* after **k* > **k*. Lith. *āšmenys* ‘blade’, which is often considered to be a closely related form with a sibilant reflex of the palatovelar, is much more likely to be an inner-Baltic or Balto-Slavic *men-*stem derived from the root of *āstrūs* ‘sharp’, like many other post-Proto-Indo-European *men-*stems in Baltic (cf. Skardžius 1943: 293–4).

Within a single paradigm, the alternations caused by the depalatalization of palatovelars have not been preserved in the daughter languages; either the velar or the sibilant was generalized (see further Kortlandt 2013b):

- Lith. *širdis*, OCS *sr̥dyce* ‘heart’ < **krd-*, cf. Lith. *šerdis* ‘core, kernel’, OCS *sr̥eda* ‘middle’ < **k̥erd-*, OPr. *seyr* < **k̥ēr(d)*
- Lith. *kārvė*, OCS *krava* ‘cow’ < **korh₂-u-*, cf. OPr. *curwis* ‘ox’ < **krh₂-u-*
- Lith. *pėkus*, OPr. *pecku* ‘cattle’, with **-k-* from the oblique cases, cf. Skt. gen. sg. *paśvāḥ* < **pek̥-u-os*.
- OCS *zr̥no*, OPr. *syrne* ‘grain’, Lith. *žirnis* ‘pea’ < **grh₂-n-*, cf. OHG *kerno* ‘kernel’ < **gerh₂-n-*.
- Lith. *aštrūs*, OCS *ostr̥b* ‘sharp’ < **h₂ek̥-ro-*, with **-k̥-* reintroduced from the comparative stem **h₂ek̥-i(e)s-* and/or from derivatives, cf. OCS *osla* ‘whetstone’, *ostn̥b* ‘sharp point’, *ostn̥b* ‘thistle’.

Depalatalization of palatovelars must have occurred in several stages, with e.g. depalatalization before **r* already in Proto-Indo-European (Kortlandt 2013b), but the important point with respect to the Balto-Slavic question is that no uniquely Slavic or Baltic change can be shown to have preceded it and that it is not a contact phenomenon. Explanations of the *centum* reflexes in Balto-Slavic that operate with unverifiable prehistoric dialectal differences or large-scale diffusion from other branches of Indo-European, e.g. in the form of secondary satemization of Balto-Slavic (thus Mottausch 2006) or contact with otherwise unattested Indo-European substrata (thus Andersen 2003: 53–8, 66), simply fail to explain the distribution of the velar reflexes.

We can conclude that our present knowledge of the linguistic contacts of Proto-Balto-Slavic is very limited and confined to evidence from the lexicon.

15.5 The Position of Balto-Slavic

All linguistic evidence points to a Balto-Slavic proto-language that must have existed for a significant period after the disintegration of Proto-Indo-European. All shared innovations could have taken place before the first detectable isoglosses between Baltic and Slavic. Explanations for the data that do not

depart from a single Balto-Slavic proto-language (e.g. Holzer 2001; Andersen 2003) are unnecessarily complicated and involve additional unfalsifiable dimensions such as shifting prehistoric dialects or otherwise unattested contact languages. The uniformity of this proto-language has often been questioned, as the following two quotations by Petit testify:

Si le balto-slave a existé, ce n'est sûrement pas comme une langue totalement unifiée, mais plutôt comme un groupe de dialectes perméables à la diffusion d'isoglosses.

[If Balto-Slavic has existed, it is surely not as a totally unified language, but rather as a group of dialects susceptible to the diffusion of isoglosses.] (Petit 2004: 35)

No scholar would today seriously reconstruct a proto-language as free of internal variation as Schleicher did for Indo-European, and no scholar, not even the staunchest supporters of a proto-language common to Baltic and Slavic, would dare to write a tale in Balto-Slavic. (Petit 2018: 1971)

I disagree with both statements. Proto-Balto-Slavic – the stage right before the first isoglosses between the three branches arose – may have been dialectally diversified, but this diversity cannot be reconstructed (see Section 15.3.1). There may have been a “Common Balto-Slavic” period, during which innovations could have affected different subsets of predecessor dialects to West Baltic, East Baltic and Slavic, but the evidence for such a period is limited to the handful of innovations potentially shared by East Baltic and Slavic (see Section 15.3.2).¹⁰ In fact, the linguistic data do not rule out a scenario in which Proto-Balto-Slavic was a dialect or sociolect that was spoken by a relatively small group of people and that any related dialects or sociolects disappeared without leaving a trace. Because there is at present no compelling positive evidence in favour of internal variation in Proto-Balto-Slavic, we should indeed try to reconstruct a monolithic proto-language that contains the ancestors of all Baltic and Slavic forms and structures that are inherited from Proto-Indo-European as well as the results of the shared innovations of Baltic and Slavic. Villanueva Svensson (in press) rightly remarks that the reconstruction of such a proto-language “can be seen as a powerful heuristic device.” Although it is of course not to be expected that we will ever be able to write a story in Balto-Slavic as well as a speaker of that language would have done, trying to do so would be a very useful way of demonstrating the gaps in our knowledge of Proto-Balto-Slavic (see Kortlandt 2010: 49 for an attempt to render Schleicher’s fable in Proto-Balto-Slavic).

If we take away the innovations that characterize Baltic and Slavic as individual branches, we are left with a language that is both phonologically

¹⁰ Petit’s example of OPr. *irmo* ‘arm’ versus OCS *ramo* ‘shoulder’ can be explained from a Proto-Balto-Slavic ablauting *mn*-stem (Pronk 2014).

and morphologically still quite close to reconstructed Proto-Indo-European. If the Balto-Slavic proto-language is associated with the (earlier phases of the) Middle Dnieper culture, which seems reasonable, the split between Baltic and Slavic can be dated no later than the beginning of the second millennium BCE. The period of shared innovations would then have been up to 1,500 years, which does not seem to be too short or too long for the number of innovations that must have taken place. After the split, Baltic and Slavic developed independently for over two millennia, which accounts for some of the striking differences between Baltic and Slavic that prompted Meillet to doubt the existence of a shared proto-language in the first place (Rozwadowski 1912: 17–18, 33). This is also the period during which speakers of Baltic and Slavic shifted to a more agriculture-based mode of subsistence, as is shown by their distinct agricultural terminology (Pronk & Pronk-Tiethoff 2018). West and East Baltic remained in each other's vicinity for a longer time, which would explain how they borrowed the same words for certain woodland animals, as mentioned above. Eventually, Baltic and Slavic came into contact again as speakers of Slavic started to move north in the early Middle Ages.

If we go further back in time, we can detect traces of contact between Proto-Balto-Slavic and one or more other languages that appear to be otherwise unknown to us. During the third millennium BCE, Proto-Balto-Slavic would have been spoken by people of the Middle Dnieper culture (see Section 15.1). Balto-Slavic was not part of a larger subgroup of Indo-European. There is insufficient support in the data for a prolonged period in which Proto-Balto-Slavic shared innovations with either Germanic or Indo-Iranian (see Section 15.4.1). This suggests that soon after the dissolution of Proto-Indo-European, the speakers of Proto-Balto-Slavic no longer regularly communicated with the speakers of the ancestors of these other branches, which is best explained by assuming that they had become geographically separated from each other.

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