

Chapter 8

Diachrony and typology of Slavic aspect: What does morphology tell us?

Björn Wiemer

Mainz University

Ilja A. Seržant

Leipzig University

In this article we consider the Slavic perfective/imperfective opposition, a well-known example of viewpoint aspect which establishes a classificatory grammatical category by means of stem derivation. Although Slavic languages are not unique in having developed a classificatory aspect system, a survey of such systems shows that the Slavic perfective/imperfective opposition is a particularly rare subcase of such systems, first of all because it combines prefixing with suffixing patterns of derivation. We therefore explore the morphology involved, tracing its development from Proto-Indo-European into Early Slavic. The emergence of Slavic aspect is atypical for grammatical categories, and it deviates considerably from mainstream instances of grammaticalization in many respects. We show that there is a strong tendency (i) towards abandonment of highly lexically conditioned and versatile suffix choices in Proto-Indo-European and in Common Slavic, which led to fewer and more transparent suffixes, and (ii) towards concatenation, away from originally non-concatenative (fusional) schemata. Furthermore, we compare Slavic with some other Indo-European languages and inquire as to why in Europe no other Indo-European group beyond Slavic went so far as to productively exploit newly developed prefixes (or verb particles) merely for use as aspectual modifiers of stems and to combine them with a (partially inherited, partially remodelled) stock of suffixes to yield a classificatory aspect system. The Slavic system, thus, appears quite unique not only from a typological point of view, but also in diachronic-genealogical terms. Based on this background, amplified by some inner-Slavic biases in the productivity of patterns of stem derivation, we pose the provocative question as to whether the rise and consolidation of the stem-derivational perfective/imperfective opposition in Slavic was favoured by direct and indirect contacts with Uralic (Finno-Ugric) and Altaic (Turkic) populations at different periods since at least the time of the Great Migrations.



1 Introduction

The Slavic aspect opposition of perfective/imperfective verbs is based on productive patterns of stem derivation involving both prefixes and suffixes. In general, the Slavic perfective/imperfective opposition does not belong among standard examples of grammaticalization; it can be captured by parameters as formulated in C. Lehmann (2015) or in Heine & Kuteva (2002) only to a very limited extent.¹ The main reason for this is that the morphological inventory involved does not originate in lexical items: suffixes have been created on the basis of the inherited Proto-Indo-European (henceforth: PIE) suffixes by various morphological reanalyses; in turn, the rise of prefixes from lexical items in principle corresponds to standard examples of grammaticalization, but this rise clearly predates the emergence of aspect. It can, thus, by no means be considered as a sufficient condition of grammaticalization, it supplies only one among many premises. Therefore, the ultimately lexical origin of prefixes should not be overestimated as a factor in the evolution of the Slavic aspect system. Semantic bleaching and morphological coalescence with verb stems prove to be well-attested processes, particularly in other Indo-European (IE) languages of Europe in which no aspect system has developed (see §5). If compared to PIE and Common Slavic, the new morphological patterns have become more transparent and, hence, less fusional. Although these patterns, to some extent, built upon an older system, the rise of Slavic aspect does not provide a counterexample against grammaticalization. On the one hand, it involved new morphemes (the prefixes); on the other hand, it consisted in a reduction of inherited patterns and a redistribution of suffixes (see §3). Thus, old and new techniques of affixation were combined; these processes involved only a minimal amount of inherited “material”, but in their sum they led to a decrease of morphophonological opacity. This is rather atypical for grammaticalization.

However, the gist of the story of Slavic aspect consists in properties that have knit together derivational patterns into a system. Regular and transparent processes of stem derivation have established a binary opposition of verb stems, called perfective and imperfective, which tend toward complementary functional distribution. Verb stems become divided according to an increasing amount of grammatical contexts, starting in the domain of actionality. That is, consistent patterns of stem derivation have led to a *classificatory category*: grammatical

¹Nor could this sort of grammatical opposition be captured by an alternative proposal to give a unified account of grammaticalization phenomena as the conventionalization of discursive secondariness (cf. Boye & Harder 2012).

8 *Diachrony and typology of Slavic aspect: What does morphology tell us?*

functions (imperfective vs. perfective) are indicated not by different forms (inflections) applying to one verb stem, but by the choice of different, though derivationally related, stems which, as it were, share a common paradigm of grammatical functions (see §2 and §4). Since a choice between perfective and imperfective stems is inevitable even in non-finite forms, the perfective/imperfective distinction has more and more become interwoven not only with other verbal categories (first of all tense and voice), but with virtually any sort of functional distinction on clause level and even beyond. In assessing the diachronic changes that led to the rise of the Slavic aspect opposition and which allowed it to be consolidated, we think it is essential to distinguish the morphological make-up (i.e. the derivational patterns) from the inventory of functions, such as [\pm limitation], single vs. repeated situation, volition- vs. cognition-oriented modal or illocutionary functions. Both, the derivational patterns and the function inventories, are necessary for grammatical aspect to arise and to strengthen its place in the grammatical system. However, in this paper we will treat aspect functions, beyond the core functions (see §2), at a minimum, since the continuous differentiation of functions associated with the choice of perfective vs. imperfective verb stems is part of the aspect story at comparatively recent stages. In fact, inner-Slavic differentiation has taken place primarily for those functions that are less motivated semantically by aspectual features, or actionality, proper (Wiemer 2008; 2015). These more recent stages build on an already established system of stem derivation whose basic architecture is unitary for all Slavic languages. We will here be concerned with this basic architecture and its rise. Furthermore, the uniformity with which this basic system of combined prefixation and suffixation applies to the core grammar of all Slavic languages is probably the reason why the perfective/imperfective opposition has long been considered as a hallmark of the Slavic group as a whole, even if classificatory aspect systems are not as typologically unique as they have often been considered to be (Arkadiev & Shluinsky 2015; see §4). Slavic aspect stands out for another reason as well: it is one of the few innovations in grammar which has affected the entire group, along with the rise of the pronominal declension of adjectives, the BE-perfect based on the so-called *l*-participles, or the imperfect. The latter, however, together with the aorist, declined early and did not survive in most of the Slavic languages, whereas the perfective/imperfective opposition has not only survived, but has even been continually strengthened. In its basic morphological shape and its basic functions the PFV : IPFV opposition is common to almost all Slavic languages,² while, for

²From the functional point of view, two Slavic minority languages outside today's coherent territory of the Slavic speaking world are somewhat exceptional, each in different respects:

instance, other TAM-grams developed later and are much more differentiated (also in form), such as the future, the new perfects, as well as minor grams like the absentive in Czech.

Thus, the primary aim of this article is to trace back the *morphological* conditions which were necessary for the Slavic aspect system to arise. These conditions are partially shared by other ancient IE languages (with even some cognate morphemes). However, beside Slavic no other IE group has developed both prefixation and suffixation to the extent witnessed in Slavic, with its remarkably stable and consistent system and its pervasive impact on the entire grammar.

Therefore, as a secondary aim, we wish to ask how this system compares to the background of other IE languages of Europe, for which comparable conditions were inherited from IE predecessors, but which eventually did not develop a classificatory aspect system like the Slavic languages (with Lithuanian being an exception to some extent; see §5.4).

Since the core system of classificatory aspect is identical for all Slavic languages, it must have been established in Common Slavic times, i.e. prior to an increase in dialectal differences that would be an obstacle in the spread of innovations from different parts of the Slavic-speaking world. Common Slavic is assumed for approx. 3rd–7th c. AD (Andersen 1985; Holzer 2014: 1126f.), and this is the period of the Great Migrations, which must have affected early Slavs and their neighbors (e.g. Goths, Balts, but also some Altaic populations). Thus, one feels justified in seeking external factors that might have been favorable for the germs of an aspect system based on stem derivation to evolve into a consistent system (see §6).

The article is structured as follows. We start with a condensed presentation of the modern Slavic aspect system (§2). In §3, we present a diachronic account of the morphological inventory involved and the main functional changes it underwent in Common Slavic and the early documented stages of Slavic. In §4, our aim is to establish the peculiarities of the Slavic system on a broader typological background such as the consistent combination of prefixation *and* suffixation. While §4 is a synchronic comparison, §5 is devoted to a survey of the functions of stem derivation (mainly those resulting from preverbatation) in some neighboring, old IE languages. Moreover, since this survey provides ground for the assumption that some complementary factors probably favoured the evolution of Slavic aspect, we sketch considerations concerning contacts with speakers of non-IE

colloquial Upper Sorbian (in Saxony, Germany) and Molisean Slavic (in southern Italy). We may however neglect the peculiarities of their tense-aspect systems since they do not substantially change the line of the entire argument developed here.

languages as an additional factor. This is done in §6, where we also formulate conclusions and give an outlook for further research. For reasons of space and perspicuity we refrain from giving glosses whenever full information about the morphology (beyond the aspect of the verb) is not mandatory. Aspect, of course, will always be indicated. If no other glossing is supplied we will mark it with upper-case small capitals (P^{fv}, ip^{fv}).

2 A sketch of the contemporary system

Our sketch of the contemporary core system starts with terminological clarifications and the basic functional oppositions before we explain the patterns of stem derivation. We will gloss over many details and have to simplify some points, but hope that examples sufficiently illustrate the crucial issues.

2.1 Actionality types and aspect as an operanda-operator relationship

The term *actionality* refers to basic situation types, or eventualities, which can be denoted by predicative units, first of all verbs. The basic eventuality types are event, process and state. Events are situations that are conceived of as holistic entities (e.g., *open a door*, *put on one's coat*, *take a glimpse*, *buy a book*). If the lexical concepts denoting these situations imply an internal structure this structure is out of consideration. Thus, for instance, the concepts denoted by *open (a door)* and *buy (a book)* may be internally quite complex and consist of different subevents that, as it were, prepare the event OPEN or BUY, but for the lexical units this complexity is, by default, out of focus. This default may be cancelled, though (see §2.2). By contrast, the eventuality behind *take a glimpse* is usually conceived of as instantaneous and the meaning of this expression does not comprise any accompanying events (e.g., *raise one's head*). Let us comment on the two other basic situation types. Processes are dynamic and can be subdivided into phases (e.g., *walk in the park*, *watch TV*, *deliberate*, *work*), whereas states do not have phases since they are not dynamic (e.g., *sleep*, *love*, *cost*, *hold in esteem*, *live*). Processes and states can be limited. Events, processes and even states can be made subject to repetition (e.g., *Every morning he smoke a cigarette / watched TV*; *Every second year she was pregnant*). Actionality features (and their alternations, see §2.2) exist for lexical concepts in any language, prior to, and independently from, aspect as a grammatical category (which a language may have or not).

Aspect, in turn, operates on actionality features; the relation between actionality types and aspect can, thus, be captured as a relation between operanda

(lexical or clausal categories)³ and operators (grammatical categories). For an overview cf. Sasse (2002). Actional features inherent to lexemes or phrases have also been subsumed under the term *lexical aspect* and been opposed to *viewpoint aspect*, which amounts to a system of operators making up aspect as a grammatical category. The terminological distinction of lexical vs. viewpoint aspect was introduced by Smith (1991). Misleading as either of these terms is (Johanson 2000: 28; Plungjan 2011: 405f.), it has become quite commonplace in aspectology and related domains of (formal) semantics, and it is roughly equivalent to the operandum—operator distinction. In what follows, *aspect* will always mean viewpoint aspect, and we use the latter term only if we want to emphasize a contrast with actionality (or *lexical aspect*). The adjective *aspectual* will be used to mean either actionality features or distinctions conveyed by the choice of aspect. This corresponds to commonplace practice, but we are confident that each time this adjective is used the context will make it clear whether we are talking about lexical features or properties of the aspect opposition. The term *event* will relate only to the specific actionality type defined above and further discussed in this section; the generic term for all actionality types is *eventuality* or *situation (type)*.

2.2 Aspect as grammaticalized marking of (un)boundedness

What is essential about the grammatical character of aspect? Trivially, for any grammatical category it is necessary to find regular distinctions of form that allow stable functional oppositions to be predicted with a high degree of reliability. The other side of the same coin is that distinctions between forms become more and more compulsory. Moreover, if these distinctions have become established sufficiently firmly, they begin to be associated more reliably with distinctions in functional domains that are only remotely related to core features, that is to features which originally motivated the given grammatical opposition. As concerns aspect, a systematic variation in the morphology of verbs (or verb phrases) must show highly consistent correspondences with recurrent oppositions of functions relevant for actionality. This is to tell the least: as indicative of the continuing grammaticalization of aspect distinctions one may regard that morphological distinctions, once established in the domain of actionality, encroach into other functional domains, such as modality, and that these distinctions become increasingly constrained by other verbal categories (see below and §2.5).

³It may be argued that eventualities are not properties of lexemes (verbs, adjectives), but of verb phrases. Likewise, Vendler's (1957) known categories (achievements, accomplishments, activities, states) are similar to the eventualities named above, but they are essentially clausal features. Anyway, these different levels all constitute operanda for aspect, therefore they do not affect the fundamental point being made here.

8 *Diachrony and typology of Slavic aspect: What does morphology tell us?*

In Slavic, core features for which the PFV : IPFV opposition proves highly sensitive are ([± limitation], a.k.a. *boundedness* and [± singular situation]). However, the formal opposition that serves to distinguish these core features has also expanded into modal and illocutionary domains. The latter ones will be illustrated below, let us first discuss the core domain. Compare, for instance, Russian:

- (1) a. *Par-a (dolgo) ljubova-l-a-s'*^{IPFV} *zaxod-om solnc-a.*
 pair[F]-NOM.SG long.time admire-PST-SG.F-RFL sun.set-INS sun-GEN
 'A long time the pair **was admiring** the sunset.'
- b. *Para po-ljubova-l-a-s'*^{PFV} *zaxod-om solnc-a (i*
 pair[F]-NOM.SG PFX-admire-PST-SG.F-RFL sun.set-INS sun-GEN and
uš-l-a^{PFV}).
 go.away-PST-SG.F
 'The pair **admired** the sunset (for some time) and (then) went away.'
- (2) a. *Petj-a čita-l-∅*^{IPFV} *roman-∅.*
 PN[M]-NOM read-PST-SG.M novel-ACC.SG
 'Peter **read / was reading** a novel.'
- b. *Petj-a pro-čita-l-∅*^{PFV} *roman-∅.*
 PN[M]-NOM PFX-read-PST-SG.M novel-ACC.SG
 'Peter **finished reading** a/the novel.'
- (3) a. *Včera Katj-a kupi-l-a*^{PFV} *sebe nov-oe plat'-e.*
 yesterday PN[F]-NOM buy-PST-SG.F RFL.DAT new dress[N]-ACC.SG
 'Yesterday Katja **bought** herself a new dress.'
- b. *Každ-yj mesjac-∅ Katj-a po-kupa-l-a*^{IPFV} *sebe*
 every month[M]-ACC.SG PN[F]-NOM PFX-buy-PST-SG.F RFL.DAT
nov-oe plat'-e.
 new dress[N]-ACC.SG
 'Every month Katja **bought** herself a new dress.'

From the lexical point of view, the imperfective verb *ljubovat'sja* 'admire, feast one's eyes upon' denotes a process with no inherent endpoint; so does its perfective counterpart, and this shared lexical feature is what unites both verbs which are also related to each other by a derivational affix (see below). We can speak of an aspectual pair. But while imperfective *ljubovat'sja* in (1a) is used to mark the process as unlimited, i.e. in accordance with this lexical default, its perfective counterpart *poljubovat'sja* in (1b) adds a temporal limitation to this process. This

limited process can be part of a chain of events; this is indicated by the continuation *i ušla* ‘and went away’. Note that *ujti* ‘go away’ implies a change of state, or otherwise: it is goal-directed (a.k.a. *telic*; see §2.3). However, despite this lexically implied difference between *poljubovat’sja* and *ujti*, both verbs belong to perfective aspect, and in a narrative setting this combination of perfective verbs yields a sequencing effect.

We observe the same difference if we compare (2a, IPFV) and (2b, PFV), although these verbs imply an inherent goal. In turn, a comparison between (3a, PFV) and (3b, IPFV) shows that the perfective verb is used if the eventuality is a single event; if this event is repeated, the imperfective counterpart is the preferred or the only possible option. So far, we may generalize that perfective verbs are used to present an eventuality as limited, the Slavic perfective aspect can therefore be called a limitative aspect (cf., for instance, Breu 2000a: 38). The imperfective aspect, in turn, is used either to defocus limits or to mark the unlimited or regular repetition of an eventuality.

There is a third main function of imperfective verbs, the so-called general-factual meaning (usually restricted to the past), by which the speaker simply states that, or asks whether, an eventuality has occurred or not. It can be compared to the experiential function of perfects, as in ‘yes-no’ questions, e.g. Russ. *Ty kogda-libo plati^{IPFV} v kafe naličnymi?* ‘Have you ever paid cash in a café?’. Furthermore, a very salient distinction applies in imperatives. Simplifying somewhat, we can say that, by default, if an imperative is issued with respect to a single action, a perfective verb is used (e.g., Russ. *Zakroj dver!* ‘Close the door!’); if the imperative is denied, an imperfective verb would be used (*Ne zakryvaj dver!* ‘Don’t close the door!’), even if it refers to the same single action. Here the aspect opposition already interacts with mood.

Regardless of this slight expansion, it is important to realize that perfective verbs mark limitation even if the eventuality is not lexically preconceived as an event; they recategorize processes, sometimes even states, into events. This happens in (1b) above: *ljubovat’sja* denotes a process, but its perfective counterpart in (1a) makes it into an event. Similarly, the perfective verb *pro-suščestvovat* ‘exist for some time span’ denotes a state which existed within some temporal boundaries and which, thereby, is recategorized as an event. Compare a corpus example:

8 Diachrony and typology of Slavic aspect: What does morphology tell us?

- (4) *Po ocenkam arxeologov, "Strana gorodov" pro-suščestvova-l-a* ^{PFV} *na*
PFX-exist-PST-SG.F

Urale okolo trex stoletij.

‘According to archeologists’ assessments, the “Country of cities” **existed** in the Ural for about three centuries.’ (NKRJa; *Znanie-sila*, 2013)

Conversely, imperfective aspect can serve to focus on a process if the verb meaning implies an endpoint, but this endpoint is out of consideration (e.g., Russ. *Celuju nedelju on pererabat-**yva-l*** ^{ipfv} *stat’ju* ‘A whole week he **worked on a re-cast** of his article’), while perfective aspect focuses on the achievement of this goal (*On pererobot-**a-l*** ^{pfv} *stat’ju* ‘He **wrote a re-cast** of his article’). This is the case with goal-directed (i.e. telic) verbs (on which see §2.3).

By a similar token, the aspect distinction is sensitive to eventuality alternations. If a lexeme has two alternative actionality readings these are rigidly distributed over perfective and imperfective counterparts. Consider event—process alternations. Events can alternate with processes if the internal structure of the latter consists of heterogeneous phases, we are then dealing with goal-directed processes denoted by imperfective verbs (e.g., Russ. *otkryvat’* ^{ipfv} *okno* ‘open a window’, *stroit’* ^{ipfv} *dom* ‘build a house’); but events can also alternate with processes if the lexemes do not imply any goal. We observe this with the semelfactive—repetitive alternation (compare e.g., *wave one’s hand*, *knock at the door*, *jump*, *kick*). Semelfactives are always perfective, and they are even marked with a specific suffix (*max-nu-t’* ‘wave’, *vil’-nu-t’* ‘wag one’s tail’, etc.); their repetitive counterparts are always imperfective (*max-a-t’*, *vilj-a-t’*, etc.). On this alternation see also Footnote 7; in the literature on Slavic aspect repetitives are usually referred to as ‘multiplicatives’. Furthermore, even states can alternate with events. This happens regularly with emotive and perceptual predicates: the imperfective verb denotes the state (*ljubit’* ‘love’, *volnovat’**sja*** ‘be excited, agitated’, *videt’* ‘see’, *zameč-a-t’* ‘notice’, *vospri-nim-a-t’* ‘perceive’), its perfective counterpart the corresponding inceptive event (*po-ljubit’*, *vz-volnovat’**sja***, *u-videt’*, *zamet-i-t’*, *vospri-nja-t’*, respectively).

Already from this cursory glance at core distinctions distributed over stems belonging to perfective or imperfective aspect we can infer two things: (i) On the one hand, both perfective and imperfective aspect are “harmonious” with different eventuality types; namely, the basic function of perfective verbs corresponds to events, while their imperfective counterparts are used if related processes or states are to be named. To some extent, these correspondences motivate the basic

actional functions of aspect. (ii) On the other hand, the PFV : IPFV distinction does not depend on inherent features of verb lexemes, and the concepts underlying these lexemes can be presented as different eventualities, i.e. they can be recategorized in accordance with the opposite aspect (Mende 1999: 289–294; V. Lehmann 2004: 174–177). That is, aspect must be able to override lexical defaults; it unifies verb stems (or verb forms), regardless of such defaults, for some more abstract functional purpose. Consequently, as parameters by which the degree of grammaticalization can be determined we may regard two things. First, the freedom, or flexibility, with which lexical concepts of processes and states can be recategorized as events by being marked as perfective, and, conversely, with which one can defocus from the boundaries of events, laying stress on a correlated process or on repetition, by using an imperfective verb. Second, the reliability with which more abstract functional oppositions, possibly in combination with other verbal categories, can be marked by perfective or imperfective verbs. In any case, the aspect of a verb is recognized on the basis of derivational patterns. Before we dwell on them, it is expedient to introduce necessary distinctions connected to the notion of *telicity*.

2.3 Aspect and telicity

The preceding discussion should have made it obvious that goal-directedness, or telicity, is not a defining property of (perfective) aspect in Slavic. There is an undisputed association between perfective aspect and telic verbs (forms or stems) inasmuch as perfective verbs are the functionally unmarked choice for telic events (see §3.2.2, Footnote 18), but, as we have already seen, events need not be goal-directed; compare semelfactives and processes or states delimited by mere temporal boundaries. Conversely, processes can be goal-directed. Compare, for instance, verbs with incremental objects or, more broadly, incremental changes, e.g., Pol. *Rodzice już od pięciu lat **budują**^{ipfv} dom* ‘The parents have been [lit. are] **building** a house for five years’, or *Chłopiec powoli **zasypiał**^{ipfv}* ‘The boy was slowly **falling asleep**’. (A)telicity is a lexical property of verb stems, or of verb phrases (as the case may be). If, thus, affixes were to mark simply a change of this property (telic → atelic, atelic → telic), this would preclude the rise of lexical equivalents differing only on aspectual core features, such as shifts of focus between some available boundary and an associated process or state. In other words: a system of perfective:imperfective verbs can hardly be established if it is built only on a strict association between telic situations and perfective verbs vs. atelic situations and imperfective verbs.⁴

⁴Here we skip over colloquial Upper Sorbian, which is the only exception to this rule in contemporary Slavic (Breu 2000b).

8 Diachrony and typology of Slavic aspect: What does morphology tell us?

The notion of (a)telicity needs some further clarification and refinement, for reasons that will become evident in §3.2 and §5. In the following we draw on Dahl (1981), Łaziński & Wiemer (1996), and Arkadiev [Arkad'ev] (2015: 21–24). We take *telicity*₁ to mean an inherent feature of a verb lexeme or a predicate that makes the denoted situation imply an inherent endpoint, regardless of whether this endpoint is realized or not.⁵ In turn, *telicity*₂ puts an assertive focus on the realization of this lexically implied endpoint. *Telicity*₁ as an inherent feature of a lexeme, regardless of whether its implied limit has been reached or not, is what traditionally most Russian scholars (following Maslov 1948) have been understanding under this term (Russ. *predel'nost'*, Germ. *Terminativität*). By contrast, scholars working in the tradition going back to Vendler (1957) have been using *telicity*₂ as a property indicating that the inherent endpoint has been reached, often even regardless of whether the predicate implies an inherent endpoint lexically or on clause level. From this perspective, a sentence like *He was writing a letter* would be *atelic*₂ but *telic*₁, while *He wrote (up) a letter* would be *telic*₂ and also *telic*₁. Either of these sentences implies an endpoint, but only in the last one this endpoint is presented as attained. To add to the confusion, *telicity*₂ has also been used as an indication that the situation has been delimited by merely temporal boundaries. This, of course, occurs if some perfective operator applies to a predicate which is *atelic*₁, i.e. activities in Vendlerian terminology. This is a standard function of the aorist with *atelic*₁ predicates, e.g. Italian *cant-ò* (sing.AOR.3SG) 's/he sang', *lavor-ò due ore* (work.AOR.3SG) 's/he worked for two hours' or Ancient Greek. This function is salient also with prefixes like Russ. delimitative *po-*, e.g. *po-gul'jat' po parku* 'walk (some amount of time) in a park', *po-sporit' s drugom* 'argue (for some time) with a friend', or *po-smotret' televizor* 'watch TV (for some time)'; see the discussion of examples (1a-b) and (4) above. In order to avoid misunderstandings (and clumsy circumscriptions) we supply the term (*a*)*telic* and all its derivatives with an index whenever we consider it appropriate.

To resume, imperfective and perfective verbs can both be *telic*₁, i.e. imply a natural boundary, but only the perfective verb asserts that this natural boundary

⁵Compare the difference between *walk (around)* and *go (to the shop)*, or between actions without an inherent limit (*cry, shout*), or momentary (punctual) verbs like *find, notice, wince*, on the one hand, and verbs with an inherent endpoint, e.g. *solve (a problem), build (a house), break (a window)*, on the other. Many verb lexemes can have either a *telic*₁ or an *atelic*₁ reading, such as consumption verbs (*eat, drink*) or activities like *read, write*. Characteristically, in modern Slavic languages perfective counterparts of such verbs tend to have different prefixes depending on the *telic*₁ or *atelic*₁ reading (e.g. Russ. *čitat'*^{ipfv} 'read' ⇒ *pro-čitat'*^{pfv} 'read through', *telic*₁, vs. *po-čitat'*^{pfv} 'read a little bit / for some time', *atelic*₁).

has been reached (= telic₂). In general, perfective verbs only assert that some boundary has been set and whether this boundary is inherent or only a temporal one depends on whether the predicate is telic₁ or atelic₁. In turn, with the imperfective, other things remaining equal, the focus shifts to other parts of a more complex situation, e.g. the gradual approachment toward an implied goal (= progressive accomplishment reading, or: incremental change)⁶ or a state that follows from an event. Perfectivity has to be understood as a grammatical property, since it is the result of an operation by which, regardless of lexical defaults, a situation can be presented (or construed) as bounded and, if necessary, be recategorized as an event. *Bounded* means that the situation is presented with limits, regardless of the telic₁ or atelic₁ character of the eventuality. Therefore, *bounded* and *perfective* can be treated as practically synonymous notions, although boundedness, at least diachronically, often comes in as a feature which implies the introduction of some inherent endpoint (also called *telicization*); see §3.2. In other words: all events are bounded by definition, and the grammatical function of perfective aspect is to mark a situation as bounded, regardless whether this boundary coincides with some inherent endpoint or not. That is, perfective aspect makes the lexical concept suitable for functions that are associated to boundedness, such as a sequencing effect in narrative discourse; see the discussion of example (1b) and (7a).

Thus, telicity₁, as a lexical feature, does not entail perfectivity, nor vice versa. Both atelic₁ and telic₁ predicates can be perfectivized, and the grammatical status of the means which mark perfectivization enhances by the degree of productivity and predictability with which perfectivizers apply not only to telic₁ verbs, but also to atelic₁ ones. In other words: perfectivization has a broader extension than telicization₁, since it does not depend on, or change, the lexical properties of a predicate. This is why, as a rule, telicization₁ does not *per se* constitute a perfective:imperfective system (see however Footnote 4); it remains too restricted to certain actional, thus lexically specific, classes of verb lexemes (or predicates).

2.4 The morphological make-up of classificatory aspect

We turn now to the classificatory character of Slavic aspect. In many other languages for which viewpoint aspect is acknowledged, predictable and reliable form:function correspondences are marked by inflectional desinences, and they are often restricted to the past domain as in Romance (aorist vs. imperfect),

⁶This, of course, works only for verb lexemes which imply such an endpoint. Such telic₁ verbs supply the starting point for many aspect systems (see §3.2.2).

or they are marked periphrastically as, e.g., in English (simple vs. progressive forms). Much less known and acknowledged are languages in which such form: function correspondences are based not on inflection on the same verb (stem), but on the classification of different, though morphologically related verb stems. In such a system we encounter regular patterns of stem derivation: the new stem is derived by (i) an additional suffix or (ii) by an additional prefix. To these patterns we can ascribe different sets of functions for each member of a derivational pair; and the more these sets of functions become complementary, i.e. do not intersect with each other, the more reliably the choice of the prefixed vs. suffixed stem marks off contrasting values of stable functional oppositions. What we eventually get is a binary classification of verb stems.

It is important to realize that both fundamental principles cooperate: transparent derivational relations for the absolute majority of verb stems, and a tendency toward complementary distribution of functions for each class, i.e. perfective vs. imperfective stems. Some of the functions were already illustrated above. For productive patterns of stem derivation see examples from modern Polish, for infinitives (5a–b) and inflected forms (6a–b); * marks off reconstructed forms:⁷

(5) Perfective/imperfective derivation with infinitives

- a. simplex imperfective \Rightarrow perfective by prefixation

łowi-ć^{IPFV} \Rightarrow *z-łowi-ć*^{PFV}

catch-INF PFX-catch-INF

patrze-ć^{IPFV} \Rightarrow *po-patrze-ć*^{PFV},

observe-INF PFX-observe-INF

podoba-ć się^{IPFV} \Rightarrow *s-podoba-ć się*^{PFV}

please-INF RFL PFX-please-INF RFL

- b. perfective stem by prefixation \Rightarrow secondary imperfective by suffixation

na-mówi-ć^{PFV} \Rightarrow *na-mawi-a-ć*^{IPFV},

PFX-persuade-INF PFX-persuade-SFX-INF

prze-kona-ć^{PFV} \Rightarrow *prze-kon-ywa-ć*^{IPFV}

PFX-persuade-INF PFX-persuade-SFX-INF

⁷Here only the most productive and salient patterns are used for illustration. In some cases suffixes are not added, but replaced. However, with one exception, replacement relations have become unproductive. The exception is the nasal suffix. For example, *-nq-* in Polish replaces *-a-*, but only for semelfactive (PFV) vis-à-vis multiplicative (IPFV) verbs; compare *mach-a-ć* vs. *mach-nq-ć* 'wave', *dźg-a-ć* vs. *dźg-nq-ć* 'prod, stab', etc. (see §2.2). These suffixes are older than the suffixes used in productive additive patterns of prefixation and suffixation (see §3.2.1).

s-po-strze-c^{PFV} (< **s-po-streg-ti*) ⇒
 PFX-PFX-take_notice-INF
s-po-strzeg-a-ć^{IPFV}
 PFX-PFX-take_notice-SFX-INF

(6) Perfective/imperfective derivation with finite forms of past and present

- a. simplex imperfective ⇒ perfective by prefixation

pis-a-l-a^{IPFV} ⇒ *na-pis-a-l-a*^{PFV}
 write-THV-PST-SG.F PFX-write-THV-PST.-SG.F
 ‘she wrote, was writing’ ‘she wrote (up)’

pisz-ę^{IPFV} ⇒ *na-pisz-ę*^{PFV} (<*(*na-*)*pis-ję*)
 write.PRS-PRS.1SG PFX-write.PRS-PRS.1SG
 ‘I write, am writing’ ‘I will write’

- b. perfective stem by prefixation ⇒ secondary imperfective by suffixation

roz-wiqz-a-l-i^{PFV} ⇒ *roz-wiqz-ywa-l-i*^{IPFV}
 PFX-bind-THV-PST-PL.VIR PFX-bind-SFX-PST -PL.VIR
 ‘they tied/were tying off’

roz-wiqz-uj-q^{IPFV}
 PFX-bind-SFX-PRS.3PL
 ‘they tie/are tying off’

In Slavic verbal morphology this principle is pervasive, because both prefixation and suffixation are not only prolific, but also able to focus on aspectual features alone without restrictions of tense or changes related to argument structure or valency. Most of these prefixes and suffixes are transparent and clearly segmentable from the original stem and desinences marking other categories, despite systematic morphonological alternations between stem and inflectional ending (see (6a) for the present tense stem) or allomorphy of suffixes (see (6b) for past/infinitive vs. present tense stem). This is why we end up with a classificatory system in which the morphological relations between the predominant number of stems remain transparent (for the rise of these relations see §3).

Note that in a persistent classificatory system, the issue whether perfective and imperfective stems always come in pairs becomes less important. On the one hand, even etymologically unrelated stems can be united into aspect pairs, i.e. stems of opposite aspect with an identical lexical meaning. These are suppletive pairs like Russ. *brat*^{ipfv}-*vzjat*^{pfv} ‘take’, *lovit*^{ipfv}-*pojmat*^{pfv} ‘catch’, *klast*^{ipfv}-*položit*^{pfv} ‘put’. Such pairs distribute among themselves the same sets of func-

tions as do other stem pairs (see §2.5). On the other hand, it proves to be of minor importance that most Slavic prefixes mark not only a shift from the class of imperfective stems into the class of perfective stems, but tend to also modify the lexical meaning of the deriving stem. Compare, for instance, Russ. *pisat'*^{ipfv} 'write' \Rightarrow *pere-pisat'*^{pfv} 'write anew', where the change to perfective aspect is accompanied by a lexical modification of the meaning of the imperfective stem. This differs from cases like *pisat'*^{ipfv} \Rightarrow *na-pisat'*^{pfv} 'write (up)' / *po-pisat'*^{pfv} 'write (for a while / a certain amount of text)', where the prefix only marks a change to perfective aspect. Regardless of this difference, each stem belongs to either perfective or imperfective aspect and the class membership is determined by the restriction to opposed sets of functions.

Prefixed stems whose lexical meaning differs from the lexical meaning of their simplex forms are often further suffixed, which yields an imperfective equivalent with identical lexical meaning. Compare, for instance, the Polish example in (6b) or Russ. *pere-pisa-t'*^{pfv} (PFX-WRITE-INF) \Rightarrow *pere-pis-yva-t'*^{ipfv} (PFX-WRITE-SFX-INF); both stems mean 'write anew'. This process is called *secondary suffixation*. In modern Slavic languages, secondary suffixation is highly productive, in the eastern half of Slavic possibly even more than prefixation in that aspect pairs are derived primarily via (secondary) suffixation (see §3.2.3).⁸ Moreover, the set of suffixes including allomorphs is much less numerous than that of prefixes. Again, it is essential that the derivational patterns (illustrated in examples 5–6) combine into a systematic classification of verb stems; the distribution of these functions is, by and large, independent from the specific pattern. This insight has been corroborated by Janda & Lyashevskaya (2011) who show that, on average, Russian aspect pairs are characterized by basically identical oppositions of function sets (*aspectual profiles* in their terms), regardless of whether they are based on the pattern simplex stem (A)^{ipfv} \Rightarrow (prefix+A)^{pfv} or on the pattern (prefix-A)^{pfv} \Rightarrow [(prefix-A)+suffix]^{ipfv}. The relative insensitivity of the two predominant derivational patterns with respect to a more fine-grained functional distribution between stems of aspect pairs is, thus, another strong indicator of the coherence of the classificatory system.

⁸The eastern half of Slavic comprises East Slavic (with Polish behaving more like East Slavic than like the rest of West Slavic) and Balkan Slavic (Bulgarian, Macedonian). Admittedly, all claims related to suffixation must be verified for languages of the western half of Slavic, in which secondary suffixation appears to be less prominent than in the eastern half (cf. Arkadiev [Arkad'ev] 2015: 124–125 and references therein). However, such inner-Slavic differences do not invalidate the principled point which we are making.

2.5 Aspect pairs and continued increase of grammatical restrictions on aspect choice

Although the complementary inventories of imperfective and perfective aspect are not as such dependent on aspectual pairedness, aspect pairs nonetheless form the backbone of the system, both concerning its diachronic development and their role in the contemporary Slavic languages. Roughly, aspect pairs provide the core of a system in which lexical concepts coded by verb stems are manipulated by aspect to meet various grammatical constraints. Aspect pairs have become a time-honored subject of never ending disputes in Slavic (mainly, Russian) aspectology. We do not intend to engage into this discussion, but we want to specify the relevance of aspect pairs just for the limited purpose of our investigation. Above, aspect pairs were introduced as pairs of imperfective and perfective verbs whose absolute majority shows a transparent derivational relation, which share the same lexical concept, but which are differently distributed over functions related to actionality and beyond. Since for no (inflected or non-finite) form of a verb the choice between perfective and imperfective stems can be avoided and other categorial distinctions are expressed by verb forms as well, aspect choice more and more interferes with these distinctions.

Interference can turn into hard constraints. A prominent illustration is provided by narrative passages in modern Russian or Polish. The backbone of any narration is a sequence of events, and these are usually conveyed in past tense by perfective verbs (see example 7a). If, however, a past tense narration is transferred to the present tense, imperfective verbs must do the job for perfective verbs without altering the lexical meaning (see example 7b), because the morphological present tense of perfective stems has almost entirely been driven out of present tense uses;⁹ by default, it has been recategorized as (perfective) future. Compare a made-up textbook example from Polish:

- (7) a. past tense: sequence indicated by perfective verbs
Wacek siadł^{pfv} w fotelu, wreszcie doczytał^{pfv} powieść, odłożył^{pfv} książkę i zasnął^{pfv}.
‘Wacek sat down in an arm-chair, at last finished¹⁰ the novel, put away the book and fell asleep.’

⁹Remnants exist in the inactual present (irregular habitual events, gnomic present, etc.), and Slavic languages such as Czech or Slovene are less restrictive than Russian in this respect (cf. Stephen M. Dickey 2000: Chapter 4–5, among many others).

8 Diachrony and typology of Slavic aspect: What does morphology tell us?

- b. present tense: sequence indicated by imperfective verbs
*Wacek siada^{ipfv} w fotelu, wreszcie doczytuje^{ipfv} powieść, odkłada^{ipfv}
książkę i zasypia^{ipfv}.*
'Wacek sits down in an arm-chair, at last finishes the novel, puts
away the book and falls asleep.'

Furthermore, as already mentioned in §2.1, more or less tight constraints of aspect choice have encroached into other domains which, on first sight, are rather remote from actionality. These pertain to clause level or clause-combining distinctions, or to illocutionary functions. For instance, the factor [\pm volition-based], or [\pm controlled], explains most of the distribution of perfective vs. imperfective stems in the scope of modal auxiliaries or other modalized contexts. Compare, for instance, Russian textbook examples with negated possibility expressed by the auxiliary *nel'zja* 'cannot, must not': the infinitive in its scope tends to be perfective if the action is out of control of the speech-act participants, yielding a circumstantial (a.k.a. dynamic) reading: *Nel'zja rassstegnut'sja^{pfv}* 'One cannot unhook' (e.g. because the zipper is broken). If, by contrast, the action can be controlled and the modality tends to be deontic, the imperfective infinitive is the default: *Nel'zja rassstegivat'sja^{ipfv}* 'One must not unhook' (e.g. because I, the speaker, disallow it).

Admittedly, the distributional facts discussed in this section are framed primarily on modern standard Russian and Polish. Among Slavic languages we observe variation concerning the distribution of functions over both aspects; the details of this variation are in part considerable. However, we wanted to give an idea of the principles that describe the basic architecture of a classificatory aspect system, and which should be accounted for if the evolution of such a system is to be captured as a type of grammaticalization, though a peculiar one. Thus, at least in the northeastern part of Slavic we are observing, over the past centuries, an increasing tendency toward complementary distribution of perfective vs. imperfective stems into the predicational, clausal and utterance level. This indicates that the very principle of stem classification has been expanding from aspectual core features ([\pm limitation, boundedness] and [\pm singular situation]) to features related to modality and discourse pragmatics. The distribution in functional domains such as narration, directive speech acts, deontic vs. circumstantial modality, etc., was much less clear-cut in former stages and has remained a locus of inner-Slavic differentiation to this day (Wiemer 2008; 2015, with further references).

¹⁰Literally 'read the novel to the end' (or even 'end-read the novel').

3 History of aspectual morphology from Proto-Indo-European into Early Slavic

Let us now try to reconstruct that part of the aspect story in Slavic which led to the pervasive employment of prefixes and suffixes and the initial steps towards a classificatory system.

We assume that the emergence of the Slavic aspectual system started and proceeded to an advanced stage at a period when the Slavic dialect continuum was still sufficiently homogeneous for morphological innovations to spread all over this continuum and to be carried by different Slavic varieties to locations of an expanding territory. It counts as more or less accepted knowledge that the expansion of Slavic speakers started from their homeland (somewhere between Oder and central Dnieper) during the 5th–6th century AD; by end of the 7th century AD Slavs occupied most of the Balkan peninsula and had spread further northwest to the Alps, and they reached the Volga-Oka basin in the northeast by the 9th c. AD. The invasion of the Magyars into the Pannonian plain took place in the 9th c. AD, which was one of the reasons for a division of Slavic into North and South (cf. Birnbaum 1979: 5–7, Stieber 1989: 9–11, Holzer 2014: 1123, among many others). The basis of the stem-derivational aspect system must thus have been laid by the middle of the first millennium AD, i.e. in Common Slavic. Otherwise, the perfective/imperfective opposition could hardly have installed itself in the predecessors of modern Slavic varieties based on the same morphological technique and with a shared core domain of functions (sketched in §2).

In this section we present the relative chronology of pertinent developments from Proto-Indo-European into early Slavic. We integrate findings on the development of aspect in later stages as far as these are important for the overall picture. Needless to say, the following division into Proto-Indo-European (more than 6,000 years ago), Early Common Slavic (before 300 AD) and Common Slavic (300–700 AD), early Slavic (Old Church Slavonic and early East Slavic, often also called “Old Russian”) and later Slavic up to our days is idealized and glosses over a number of details (cf. Andersen 2003: 46). Note that the reconstructed verbal system of PIE represents an idealized concept. PIE was not homogeneous either in areal or in diachronic terms. We do not, however, regard areal dialectal differences of PIE as important to our argument here, and so they will not be pursued further.

3.1 The Proto-Indo-European aspectual system

Before we turn to our brief exposition of aspectual distinctions in PIE, two additional remarks are in order. First, note that in the following we will mainly rely on one of the most authoritative compendia of PIE verbal morphology, namely the LIV². We acknowledge that there is considerable disagreement with regard to the exact shape of the morphological schemata involved, issues of historical phonology (related to laryngeals, *a*-vowel, etc.) as well as etymologies of particular verbs and their present vs. aorist stem formations.¹¹ Having said this, only the general make-up of the verbal system reconstructed for PIE as laid out below is crucial for our purposes and not particular reconstructions, which indeed might be subject of controversy. As concerns development within the long span of PIE, our argument will relate mainly to its later stages.

Second, PIE and the old layer of Slavic verbal derivation is never purely concatenative as there are usually additional phenomena involved such as different types of vowel gradation, alternation of the thematic vowel, etc. In what follows, we refer to these complicated morphological patterns as (*derivational*) *schemata* (cf. Haspelmath & Sims 2010: 46–53).

Let us now consider the morphological shape of the aspectual system of PIE as reconstructed on the basis of Ancient Greek and Vedic Sanskrit (cf. LIV²). This system was very much conditioned by lexical defaults of roots; it was based on the classification of verbs into two major groups traditionally referred to as (i) *root presents* vs. (ii) *root aorists* based on lexically conditioned aspectual defaults. Morphologically, the latter verbs or, more precisely, verb stems formed the aorist (and related TAM categories) with no additional derivational marker, while the former formed the present (and related TAM categories such as the imperfect) with no additional derivational marker. This is illustrated in Table 1 below.

The markers used to indicate the change in the aspectual value (schematically X and Y in Table 1) are immediately attached to the root and precede the tense, mood and person/number/voice markers. This placement is an important indication for their originally derivational nature. Moreover, as can be observed from Table 1, the split between root presents and root aorists was itself not dependent on time reference. Time reference was expressed by the presence vs. absence of the past denoting prefix **h₁e-* (the so-called augment) and two sets of person-number endings: a set of presential (traditionally called *primary*) endings and a set of non-presential (*secondary*) endings. In other words, both the root presents

¹¹A number of particulars are explained differently, e.g. by the Leiden School (beginning from Beekes 1969; 1995). A considerably different model of the PIE verb system is suggested in Jasanoff (2003).

Table 1: Morphological patterns for TAM formations in PIE

Time reference		Type (i) (root present)	Type (ii) (root aorist)	Mood	Person+ number
present	no augment	root	root + Y	(+Z)	present endings
imperfect	augment	root	root + Y		non-present endings
aorist	augment	root + X	root		non-present endings

Comments: *X* – perfective schemata, *Y* – imperfective schemata, *Z* – mood schemata (zero in the indicative and imperative), *augment* – the traditional term to refer to the past tense prefix **h₁e-*.

and root aorists could form present and past tense. Root presents formed their past tense (called *imperfect*) by means of the augment and the set of non-present endings. Root aorists were not restricted to past tense use but could also occur in the present tense (injunctive, gnomic aorist) in specific contexts. The distinction between these two classes was most probably aspectual. It was obeyed in all finite and even non-finite forms (e.g., participles and infinitives based on aorist vs. present stem) as well as in different moods (e.g., aorist vs. present subjunctives). The evidence from the earliest documented Indo-European languages, such as Homeric Greek, suggests that, by and large, root presents behaved like imperfectives and root aorists like perfectives. They resembled the Slavic PFV : IPFV opposition inasmuch as this distinction (i) was inherent to all (finite and non-finite) forms of the verb and (ii) did not depend on tense or mood. Instead, tense was marked independently from the aforementioned aspectual characteristics with different sets of personal endings (for example, non-present **-t* vs. present **-ti* for the 3SG.ACT) and, in some varieties, with a prefix, the already mentioned augment **h₁e-* (PST-) in PIE.

With this in mind, we can rename root aorists as *perfectives* and root presents as *imperfectives*, but have to emphasize that, in the context of PIE, these terms are not meant as a grammatical opposition in the same way as they are for more recent and modern Slavic (see §2). The PIE perfective : imperfective distinction of roots was probably much closer to actionality features (or, lexical aspect), but the exact semantics of this opposition remains obscure. However, as we will now see, the governing principles of this system were strikingly similar – and partly etymologically related – to those found in Common and early Slavic.

Once the notions *perfective* vs. *imperfective* are introduced there is no need for the traditional distinction between *aorist* and *imperfect* since the former is just the past form for perfectives while the latter is the past form for imperfec-

tives. In turn, perfectives may be simplexes or derived by means of a derivational schema. Analogically, imperfectives may be simplexes or derived from perfectives by means of some other derivational schema. For example, in order to form the perfective (such as the aorist), an imperfective simplex had to be additionally marked by some morphological marker, e.g. by the suffix **-s-* (concomitantly with the lengthened/full grade of the root vowel)¹² or, more rarely, by the reduplication of the root-initial consonant with the zero grade of the root vowel and the attachment of the thematic vowel (cf. LIV² 2001: 21). And, vice versa, a perfective simplex must be marked by an additional marker in order to become imperfective: e.g., by a nasal infix **-n-* (with vowel gradation), more rarely by reduplication of the root-initial consonant or by one of the suffixes, e.g. **-ĭé/ó-*, **-ské/ó-* or **-u-*, etc. Note again that the morphological strategies to derive imperfectives or perfectives from roots are very much derivational and not inflectional. The choice of the schema depended on actional defaults of the root, and the different schemata were not etymologically related. Originally, they were not fully synonymous and must have marked different semantic nuances (Meiser 1993; Kölligan 2004; Seržant 2014: 115). The new, derived stem behaved morphologically like a distinct lexeme.

For example, the lexical default of **deh₃-* ‘give’ was perfective, that is, it formed the aorist and related categories without any additional marker **h₁e-deh₃-t* (PST-ROOT-NPRS.3SG.ACT) ‘she/he/it gave’, while the present and related categories such as the imperfect were formed by means of reduplication with this verb **dedoh₃-ti* (REDUPL-ROOT-PRS.3SG.ACT) ‘she/he/it gives/is giving’ (LIV² 2001: 105). In turn, the lexical default of the verb **h₁ei-* ‘go’ was an imperfective and marked the present without morphological changes: **h₁ei-ti* (ROOT-PRS.3SG.ACT) ‘she/he/it goes/is going’; its perfective counterpart was most probably suppletive (LIV² 2001: 232).

Generally, the majority of the PIE underived verbs were perfective, while their imperfective counterpart was morphologically derived by one of the schemata involving an infix, suffix or reduplication, all combined with vowel gradation (ablaut).¹³ In total, around 22 productive morphological schemata were available for imperfectivization (LIV² 2001: 14–21). Very little is known about their original meaning distinctions. Crucially, many of them were not purely aspectual but had also bearings on semantic entailments such as Dowty’s (1991). For instance, the

¹²Later, e.g., in Modern Greek to develop into rather an inflectional *s*-suffix.

¹³The vowel gradation patterns were highly diverse with each of these schemata: while some just required *e*-grade or zero grade of the root throughout the paradigm others involved mobile vowel gradation patterns dependent on the singular (active voice) vs. plural (active) and both singular and plural (middle) forms.

nasal infix could mark that a participant of the given eventuality was agentive (Meiser 1993). Other schemata such as reduplication or the schemata involving the suffix *-éje/o- with the *o*-grade of the root vowel, in turn, combined meanings pertaining to both actionality (such as pluractionality) and/or event structure (e.g., agentives, and, rarely, causatives); cf., *inter alia*, Kölligan (2004). These two were also used to derive secondary, marked unbounded verbs (see §3.2.1), most productively the suffix *-éje/o-.¹⁴

In turn, perfectivization was quite rare in PIE, and except for one schema (suffix *-s- with root ablaut) there were perhaps one or two other options each attested extremely rarely, to the extent that their existence is somewhat hypothetical. To conclude, PIE attests primarily underived perfectives and derived imperfectives, while underived imperfectives and derived perfectives are very rare – a constellation that corresponds to the imperfectivizing-by-suffixes type in the classification which we apply, following Arkadiev & Shluinsky's (2015) typology (see our D-type in Figure 1 in §4).

3.2 Diachrony of the Slavic aspect system

In Early Slavic, aspectually relevant features unfold along two dimensions: (i) the derivational one, i.e. the opposition between two or more distinct verb stems being morphologically in a derivational relation to each other (§3.2.1), and (ii) the inflectional one, i.e. the opposition between Slavic aorist and imperfect, which is restricted to the past domain (§3.2.2). Note that derivational (i) vs. inflectional (ii) types are meant just as approximate labels; diachronically the inflectional type (ii) originated from a derivational one (i), as is argued in §3.2.2 below.

3.2.1 The derivational type: suffixes

While remaining typologically of the same type (namely, the D-type discussed in §4), early Common Slavic undergoes a number of reductive changes. First, the versatile PIE system in which lexical (i.e. actional) defaults of roots determined the application of different kinds of derivational schemata for imperfectives is drastically simplified. Most of the imperfective schemata of PIE are lost in Slavic: reduplication, various imperfective suffixes such as *-ské/ó-, *-d^hé/ó-, and many others. Other imperfective PIE schemata survive, but are no longer productive in Common Slavic, such as the nasal infix (see Table 2 below).

¹⁴Compare, for instance, Ancient Greek *pét-o-mai* 'I fly' vs. *potá-o-mai* 'I fly around' (LIV² 2001: 479).

8 Diachrony and typology of Slavic aspect: What does morphology tell us?

In turn, there are only few schemata that remained productive in the early Common Slavic period. It was primarily those that served to derive secondary deverbatives (often iteratives, habituals or duratives, but also causatives) and not primary imperfectives in PIE (such as in the first schema in Table 2). In turn, the second schema in Table 2 is most probably a remodeling of the old PIE schema to derive imperfective stems (see also §3.2.4 below).

The verbs in Table 2 are *marked unbounded verbs*, where *marked* refers to both (i) meaning and (ii) morphology: (i) Their meaning is specified as entailing lack of a boundary as opposed to the default simplex (which can be both bounded and unbounded), and (ii) they are morphologically marked as opposed to the simplex by one of the schemata adduced in Table 2. The term *unbounded* amounts to the same as the notion *atelic*₂, which was introduced and explained in §2.3. Both indicate that an eventuality is conceived of without boundaries, regardless of whether the lexeme implies an endpoint (*telic*₁) or not (*atelic*₁).

All three schemata represent remodellings of PIE schemata. While the first schema illustrated in Table 2 is no longer productive already by early Common Slavic, the second and the third schemata are variants that are productive in Common Slavic except for the morphonological ablaut, which was gradually abandoned. It is the second schema that was involved in creating the imperfect in Common Slavic (§3.2.4). In turn, the third schema in Table 2 involving the suffix *-a-je/o-* (past tense: *-a-*) remained productive into Early Slavic and gave rise to a wide range of allomorphic variants which are all, etymologically, morphological extensions thereof (see Table 3 below). Crucially, in the Common Slavic and Early Slavic period, the formation of various modifications of actionality was still highly lexicalized and by no means regular, and a number of simplexes did not have any pluractional or durative correspondent, e.g. *bbra-ti* (take.NPRS-INF) ‘take’ whose pluractional *-bira-ti* (take.IPFV.NPRS-INF) appeared only later and only in opposition to the respective prefixed verb, e.g. *sṽ-bbra-ti* (PFX-collect.NPRS-INF) ⇒ *sṽ-bira-ti* (PFV-collect.IPFV.NPRS-INF) ‘collect’ (cf. Maslov (2004[1959]) and further in §3.2.3).

While most of the schemata based on suffixation coded unbounded situations, there was only one exception to this, namely, the nasal suffix *-nu-* (i-ii) and the nasal infix **-n-* (iii). There are generally three functional types here: (i) gradual accomplishments, as in, e.g. Russ. *vja-nu-t’* ‘wither’, *sox-nu-t’* ‘dry [INTR]’ (this has yielded imperfective stems), and (ii) semelfactives, cf. Russ. *tolk-nu-t’* ‘push once’, *stuk-nu-t’* ‘knock once’ (which now belong to perfective stems); cf. ŚIPrasłow (Ślowski 1974: 45) and Nessel (2013) for the diachronic relations. The original form of the nasal suffix was **-nVn-*. This very suffix – albeit old – is not

Table 2: Old, non-productive layer of the Common Slavic schemata to yield *marked unbounded verbs*

Present	Non-present	Ablaut	comments and examples
*-e(j)e/o-	*-i-	-o-	Examples of these derivations are rare, cf. (non-present) <i>vod-i-</i> vs. (present) <i>vož-</i> (< *-j-) derived from the simplex <i>ved-</i> ‘lead’; (non-present) <i>laz-i-</i> vs. (present) <i>laž-</i> (< *lōz-j-) derived from the simplex <i>lěz-</i> (< *lēz-) ‘climb’, etc. This is an inherited PIE derivation to yield marked unbounded verbs, which became unproductive already in Common Slavic.
*-je/o-	*(j)a-	(-e-)	An old derivation with sometimes imperfectivizing function, e.g. (non-present) <i>ima-</i> vs. (present) <i>jeml’-</i> (< *em-j-) ‘grasp, take’ derived from the simplex <i>ję-ti</i> (< *im-ti) ‘grasp, take’; (non-present) <i>da-ja-</i> vs. (present) <i>da-j-</i> ‘to give’ from the simplex <i>da-</i> ‘give’ or (non-present) <i>kry-ja-</i> vs. (present) <i>kry-j-</i> ‘cover’ from the simplex <i>kry-</i> ‘cover’ (Silina 1982: 164f.). This derivation was crucial for creating the Slavic imperfect (Ostrowski 2006; see §3.2.4).
*-a-je/o-	*-a-	long grade	Iterative and durative Aktionsarten were formed by means of the lengthened grade of the root vowel and the suffix *-ā-, cf. Russian <i>po-lož-i-t’</i> (historically *-log-ej(e)-) ‘put’ vs. <i>po-lag-a-t’</i> (*-lōg-ā-); (non-present) <i>na-bira-</i> vs. (present) <i>na-bir-aj-</i> with lengthened root vowel *-bīr- from <i>na-bvra-</i> (< *-bir-) ‘take, collect’ (Silina 1982: 167f.). Ivanov (1964: 382) considers this to be an inherited pattern.

inherited as such and must be a Slavic (and, perhaps, Germanic) morphological and functional remodeling of the old PIE infix *-n-. Finally, (iii) there are remnants of the old PIE pattern with this infix *-n- such as OCS *seǰ-d-ǰ* ‘I take a seat’, *leǰ-g-ǰ* ‘I lie down’ from Common Slavic **sē-n-d-* and **le-n-g-*, all with an ingressive meaning denoting the onset of (or transition into) some new state (Ivanov 1964: 383; Rasmussen 1988).

While (i) adheres to the general tendency to relate suffixation with marked unboundedness, (ii) and (iii) clearly denote bounded situations. The nasal suffix *-nu-* (ii) and the archaic infix *-n- (iii) were the only schemata to derive stems marking limitation via suffixation. Later, these types were integrated into the patterns of aspect pairs and entered into the class of perfective verbs.

Generally, we observe a clear tendency towards *concatenation* that developed from the earlier schemata. The beginning of this process predates Common Slavic, continues into Early Slavic and reaches up to the modern Slavic languages, in which it is still not fully accomplished. Different kinds of modifications of the old suffixes (the second and third schema in Table 2 above) took place, while concomitant morphological co-effects such as the lengthened grade of the root or the ablaut were abandoned.

Further modifications of these suffixes are found. Old and Middle Russian *-e/o-* (present) / *-a-* (non-present), *-je/o-* / *-ja-*, *-aje/o-* / *-a-*, *-jaje/o-* / *-ja-*, *-vaje/o-* / *-va-*, *-ovaje/o-* / *-ova-* were mostly compatible with contexts associated to unboundedness only (Silina 1982: 162). Crucially, all these suffixes draw on the old second or third schema in Table 2 above.

The schemata in Table 2 and Table 3 played an important role in the rise of the new aspectual system (Maslov 2004[1959]; Meillet 1965). The number of schemata has considerably diminished from PIE times, and, concomitantly, their morphological make-up changed from schemata causing stem-internal morphological changes to concatenative suffixation, creating thus morphologically more transparent derivation.

¹⁵The earliest attestations of *-iva-* in East Slavic are from the 12th c. (Silina 1995: 377; Ševeleva 2010). This suffix became considerably more frequent in the 14th c. and reached a peak of productivity in the 16–17th c. (Andersen 2009: 131). It outranked the other most salient suffix *-ova-* in East Slavic (Vaillant 1966: 492, 499; Mende 1999: 314 referring to Silina 1982: 170–176); see also §3.2.3. The suffix *-ova-* had originally denominalizing function (Vondrák 1924: 718; Vaillant 1966: 488; SiPrasłow Slawski 1974: 48). Its capability of deriving imperfective stems in more recent times might have been facilitated by the fact that desubstantial verbs usually have been integrated into imperfective aspect (Miklosich 1926: 486). The suffix *-iva-* (with allomorph *-yva-*) originates on the basis of already established *-Vva-* and verb stems with *-i-* as thematic vowel (Kuznecov 1953b: 262; Vaillant 1966: 490).

Table 3: Recent layer of the Slavic marked-unbounded schemata

Present	Non-present	Ablaut	comments and examples
<i>-jaje/o-</i>	<i>-ja-</i>	root vowel lengthening (rare)	This is a recent development (productive after 11 th c.) based on the extension on the second schema in Table 2 with <i>-j-</i> stemming from verbs with the stem in <i>-i-</i> , e.g. East Slavic (non-present) <i>iz-bavl-ja-</i> , (present) <i>iz-bavl-jaj-</i> (<*- <i>bav-jaj-</i>) derived from <i>iz-bavi-</i> ‘save from sth.’.
<i>-(V)vaje/o-</i>	<i>-(V)va-</i> : <i>yva</i> , <i>iva</i> , <i>ova</i> , etc.)	root vowel lengthening (rare)	These are the most recent suffixes, although they are sporadically attested in early East Slavic (e.g. in the Laurentian Codex from 1377), they became productive in the 13–17 cc. (Ivanov 1964: 387; Andersen 2009: 131) and are formed analogically to the Old Slavic patterns in <i>-Vva-</i> (Kiparsky 1967: 212f.). It is obvious that this suffix series historically derives from the second schema in Table 2 by adding <i>-v-</i> and a vowel. The latter are originally parts of the root of some verbs which were reanalyzed as belonging to the suffix and then generalized. ¹⁵ The meaning pertains to multiple actions, cf. <i>kupit</i> ‘buy’ vs. <i>koup-l-iva-lz</i> ‘(every time) he bought’.

3.2.2 The derivational type: prefixation

Not much can be said about the chronology in which prefixes appeared in Slavic. Certainly, prefixes did not exist in PIE and preverbs developed out of PIE adverbs or nouns (cf. Chantraine 1953: 82; Cuzzolin et al. 2006; DeLazero 2012). Closely related Baltic attests traces of a looser morphotactic juncture of preverbs; cf. Lith. *per-si-kel-ti* ‘through-RFL-raise-INF’ meaning ‘move (to another place)’. Here, the reflexive marker *-si-* is inserted between the prefix *per-* and the verb root *kel*, hinting at an earlier adverbial nature of *per-* to which *-si-* was cliticized.¹⁶ We are unaware of any attestations of this phenomenon in documented Slavic material. But this observation can at best be interpreted as an indication that coalescence with the stem was finished earlier in Slavic than it was in Baltic; we cannot, however, induce from this at which period preverbs became rigidly tied to the verb stem, thereby turning into prefixes.

If we turn to the semantic side of prefixation, it is commonly assumed that, originally, preverbs (and thence prefixes) were used to modify the lexical meaning of simplex stems. We may call this *verbal orientation* (not only in a spatial sense), as proposed in Plungjan (2000: 176, 291; 2002). That is, the semantic development responsible for the conventionalization of the telic₁ meaning of the prefixed stems can to some extent be explained as the effect of local expressions providing an inherent endpoint of a particular situation in space; compare, for instance, OCS *i-ti* ‘go’, which can have either atelic₁ or telic₁ reading, and *vŏn-i-ti* (inside.PFX-go-INF) ‘go in, enter’, *prě-i-ti* (across.PFX-go-INF) ‘go over, cross’, etc., which are only telic₁ (Maslov 2004[1959]; Silina 1982: 163; Bermel 1997: 466, among others). We assume that local (and comitative) prefixes/adverbs could have a considerable degree of abstractness early after the split of PIE and their abstract meaning developed also by, or during, the Common Slavic period. This development subsequently allowed these prefixes to focus on the telicity₁ effect and less on local or other meaning components. Thus, we may safely assume that *the first step* (= stage (i) in Table 4 below) in the rise of the aspectual functions of prefixation was its ability to code telicity₁ in opposition to functionally unmarked simplexes. At this stage, both simplex and the prefixed verb could be used in both perfective and imperfective core contexts (Maslov 2004[1959]). There emerged thus an asymmetry between the simplex and the respective pre-

¹⁶In the literature this has been discussed under the rubric of tmesis phenomena. In older stages such phenomena occurred with other enclitic pronouns as well (and survived in some dialects); e.g. *ap-mi-švies-k akis* ‘illuminate my eyes’, lit. ‘illuminate the eyes on/to me’ [Germ. *erleuchte mir die Augen*]’ (cit. from Rosinas 1995: 10f. orthography slightly adapted; cf. also Ambrasas 2006: 83–87).

fixed verb: the former could be construed as both telic_1 and atelic_1 , the latter could only have the telic_1 meaning.

Furthermore, prefixes can serve to emphasize a semantic component that is already inherent to a simplex stem; compare Russ. *nes-ti*^{ipfv} ‘carry’ vs. *pri-nes-ti*^{pfv} ‘carry (toward a reference point)’. In particular, they are able to highlight a boundary of the verbal action which otherwise would remain only implied (= telic_1) or can even be suppressed (= atelic_1). This phenomenon is known as the Vey-Schooneveld effect.¹⁷ Essentially, it says that alleged “empty prefixes” do have a semantic function, namely: their choice is motivated by, or harmonic with, some lexical component of the meaning of the simplex stem, in particular a component introducing some sort of boundary to the denoted action. We assume that the Vey-Schooneveld effect was an important mechanism facilitating the development of the prefixes primarily coding telicity_1 and, subsequently, telicity_2 in opposition to simplexes.

Telic_1 verbs in general show a default focus on the endpoint as having been attained, especially in the past tense, or in narration.¹⁸ With time the focus on the realized boundary turned from an implicature into a conventionalized telic_2 meaning of the prefixed stem that no longer can be cancelled.¹⁹ This made up *the*

¹⁷The name comes from two pioneering articles (Vey 1952; Schooneveld 1958), whose significance has recently been re-discovered in connection with the description of contemporary Slavic (in particular Russian) aspect by Janda et al. (2013), among others, and has been used for an adequate assessment of the role of preverbatation in the evolution of aspect systems, above all by Arkadiev [Arkad’ev] (2015).

¹⁸Converging evidence supporting the existence of such a default has been provided from usage-based, morphological, and typological findings. First, in first language acquisition children start using telic_1 verbs predominantly in the past to denote accomplished actions and resultant states. This apparently holds regardless of whether the language has aspect (e.g. Russian, Chinese, French) or not (e.g. German, Swedish); cf. among others, Schlyter (1990); V. Lehmann (1992), Stoll (1998; 2005: 806), Gagarina (2004), with further references. In Russian and Polish, children acquire imperfective stems of telic_1 verbs later than perfective ones (V. Lehmann 1990; Gagarina 2004). Second, in German, an aspectless language, telic_1 verbs in the past are associated primarily with an achieved goal, not with the preceding process (e.g. *Er öffnete ein Fenster* ‘He opened a window’, *Sie bauten ein Haus* ‘They built a house’). This phenomenon has also been dubbed ‘default aspect’ (cf., for instance, Bohnemeyer & Swift 2004). Third, Russian imperfective stems of telic_1 verbs are predominantly derived from perfective stems (via secondary suffixation, type frequency) and they are also less frequent as tokens in the past (Breu 1980; V. Lehmann 1993; Gagarina 2004).

¹⁹Cf. Breu (1992: 128f.). Strictly speaking, the simplex remains compatible even with a telic_2 meaning, but its prefixed counterpart begins replacing it increasingly in this meaning (other conditions, e.g. [\pm repetition], remaining equal). The prefixed stem is marked in comparison to the simplex stem both morphologically and functionally, since its contexts of usage have become more restricted.

second step (= stage (ii) in Table 4) toward a grammatical perfective/imperfective opposition. It favored the strengthening of the functional distribution of prefixed vs. simplex stems over contexts associated with perfective and imperfective aspect.

The strengthening of the telic₂-interpretation and, thus, a split between telic events and telic processes shows that, at this stage, non-punctual telic₁-verbs (which correspond to Vendlerian Accomplishments) played an important role. These verbs are different from other actional types, such as activities or achievements, in that they consist of two components, each of which may be separately highlighted in a particular discourse move: (i) the preparatory activity (e.g. the process of *building*) and (ii) the culminating achievement (as in *A house was built*). To this extent, these verbs are lexically ambiguous. On the basis of this ambiguity the emergent telic₂ function of prefixes could gain in significance, helping to morphologically highlight the culminating-achievement component as opposed to the preparatory-activity component of the meaning (cf. *inter alia*, Maslov 2004[1959]; Breu 1992; Bermel 1997). Notably, it is this aspectual class of verbs which appears to be the first in nascent “Slavic-like” systems, for example, in Gothic or Old Irish (see §5.2–5.3) as well as in Latvian (see §5.4).

In fact, this process complements the Vey-Schooneveld effect: the prefix not only emphasizes an already existent lexical component of the verb, it also makes more salient the default focus on the implied endpoint as being reached. The result of this cooperation of prefix functions was the conventionalization of the telic₂ implicature. In turn, the simplex stems in the course of time were predominantly (though not exclusively) relegated to imperfective aspect as they remained capable of denoting anything else beyond the telic₂ function. Furthermore, this distribution was then transferred to other patterns of aspectual pairings, first of all with secondary imperfectivization (on which see §3.2.3).

In a *further step* (iii), prefixation started being applied to atelic₁-stems as well, first of all to activities, i.e. to eventualities which do not entail an inherent endpoint. In this case the perfectivizing function consisted only in setting a temporal boundary as in contemporary Russian, e.g. *po-rabotat* ‘work for a while’. This brought about two consequences. First, the telic₂ function of perfective verbs was, in a sense, loosened, because prefixes became able to mark delimitation even with stems that did not imply any inherent boundary (atelic₁). Eventually, the function of perfective verbs (most of them prefixed) was fixed to focus on boundaries, be they inherent or only temporal delimitations. Second, the prefixed atelic₁-stems were reinterpreted as events and started sharing central functions of perfective verbs with telic₂-stems. For instance, Russ. *po-leža-l*^{pfv} ‘lay

for some time’ can be inserted into narrative sequences together with perfective telic₂-stems, e.g. *otkry-l* ^{PfV} *xolodil’nik* ‘opened the fridge’ or *s”e-l* ^{PfV} *salat* ‘ate (up) a salad’ (cf. Bermel 1997; V. Lehmann 1999, 2009, among others). See the discussion in §2.2 and §2.5.

Table 4: Functional development of prefixation in early Slavic

(0)	verbal orientation: spatial, etc.	lexical ↓	Early Common Slavic
(i)	telicizing₁ function: 1. coding telicity ₁ on the verb (connected to Vey-Schooneveld effect) 2. emphasis on lexically inherent boundary		Common Slavic
		actional	
(ii)	telicizing₂ function: focus on the achievement of the inherent boundary	modification ↓	Common and Early Slavic
(iii)	limitation (temporal or natural)	viewpoint aspect	later Slavic, but predominantly in the eastern half

We may sum up so far. By and large, one can justifiably assume that the role of prefixes proceeded along the stages of functional development (as presented in Table 4). The comparative recency of stage (iii) is reflected in the fact that it is less prominent in the western part of Slavic, insofar as merely temporal limitation is concerned (Stephen M. Dickey 2000: Chapter 7; 2011). Support for the assumption that the preceding stages (i-ii) must have advanced considerably earlier comes, for instance, from Eckhoff & Haug (2015: 202–207). In their corpus study on Codex Marianus and Codex Zographensis (10–11th c.AD), written in Old Church Slavonic, they observed a strong association between prefixed stems (without further suffixation) and contexts of perfective aspect, on the one hand, and between suffixed stems and contexts of imperfective aspect, on the other (although the latter association was less pronounced).²⁰ Many simplex stems

²⁰Remarkably, the parallel Greek texts did not show such a strict correlation, since many Greek

8 Diachrony and typology of Slavic aspect: What does morphology tell us?

remained underspecified in this respect and were used readily with either aorist or imperfect. A similar situation was observed in some of the oldest texts of the East Slavic recension of OCS (Seržant 2009). There was a stable opposition between nascent perfectives and nascent imperfectives (if judged from modern Russian) in such a way that nascent perfectives were used only with the aorist, perfect, and the passive based on *n/t*-participles, and they denoted future though being realized in the present tense stem, while nascent imperfectives (i.e. both simplex and secondarily suffixed stems) were used with imperfects and in the passive based on *m*-participles, and being coded in the present tense stem they also had present tense reference. By way of example, compare *znaje-m-ъ by-st ь* (KNOW-PASS.PRS-NOM.SG.M be-AOR.3SG) ‘he was known’ vs. *po-zna-n-a by-stb* (KNOW-PASS.PST-NOM.SG.F be-AOR.3SG) ‘she was recognized’.²¹ The originally resultative *n/t*-participles allowed only telic₁ verbs as their input (Brugmann 1895; Havránek 1937: 101f.; Haig 2008: 41; Seržant 2012: 359–361), while the present passive participles in *-m-* were compatible with progressive meaning with atelic₁/atelic₂-verbs as their input. In turn, only a few unprefixated and unsuffixed verbs remained indifferent to this distinction in this corpus. These findings may be summarized as in Table 5.

Table 5: Strong preferences of the verbs in tense and voice formations in the oldest Russian Old Church Slavonic (according to Seržant 2009)

	Past tense	Passive	Present tense
nascent perfectives	aorist, perfect	based on <i>-n/t</i> -participles	future in the Greek translation
nascent imperfectives	imperfect	based on <i>-m</i> -participles	present in the Greek translation

Observations like these make us inclined to assume that a system as in (8) developed into a system as in (9):

- (8) Early Common Slavic
simplex stems (default) vs. *suffixed stems* (marked unbounded meaning)

prefixated verbs were used in the imperfect (Eckhoff & Haug 2015: 202).

²¹This resembles the situation encountered in modern Lithuanian (Seržant 2009: 321–322).

- (9) Late Common Slavic
simplex stems (default) vs. *suffixed stems* (marked unbounded meaning)
vs. *marked prefixed stems* (telic₂)

The aspectual behavior of the simplex stems was the least stable one.

3.2.3 Secondary imperfectivization

We are now entering into a period when inner-Slavic differentiation started becoming more pronounced, both in terms of the productivity of patterns of aspectual derivation and in terms of the functional distribution of (nascent) perfective and (nascent) imperfective stems. These differences have since then partially been accompanied by the different fate of the older aorist:imperfect opposition (on which see §3.2.4).

In §3.2.2 we have argued that prefixation was increasingly related to telicity₁ and, subsequently, telicity₂. They, thus, marked situations as bounded, while suffixation coded unbounded eventualities. Gradually, in the Early Slavic period, the semantic markedness of suffixation bleached and the latter became the unmarked option for expressing unbounded situations of all sorts and, eventually, even progressive and other functions typically associated with imperfective aspect. Simultaneously, prefixed verbs not only gradually became telic₂ and, by this property, constituted the class of perfective verbs, but they also started losing the capability of denoting iterative/habitual/generic meanings. Probably, this process started earliest in the northeastern part of Slavic; in the western half of Slavic these functions have remained robustly attested with perfective verbs until today.

Most prefixed stems lexically differ from their simplexes; compare, for example, *sъ-bbra-ti* (together.PFX-take-INF) meaning ‘collect, gather’ (lit. ‘take together’) against *bbra-ti* ‘take’. Since the meaning range of prefixed stems began to shrink in the domain of iterative and progressive functions, a gap resulted when these functions were to be expressed with lexical concepts that were denoted by prefixed, and therefore perfective, stems. This gap was, as it were, filled by the suffixation patterns as discussed above, i.e. by creating new, secondary imperfectives to the prefixed stems; compare, e.g., Old East Slavic *prě-bi-va-ti*^{IPFV} (through.PFX-hit-SFX-INF) from *prě-bi-ti*^{PFV} (through.PFX-hit-INF) ‘break (through)’; see the third pattern in Table 2. Although secondarily suffixed stems were attested already in OCS, the class of imperfective verbs started filling up steadily with such stems. Simplexes remained, in turn, ambivalent for a long period of time even in the northeastern part of Slavic. According to Ševeleva (2010:

208–212), secondary imperfectives marked with *-iva-* were already quite productive in 12th c. East Slavic, and according to Andersen (2009: 131), secondary suffixation experienced a steep rise of frequency from the 13th c. onwards (see also Footnote 15). He describes this increase as an S-curve, whose flat beginning started a long time before: “The bottom part of that curve would correspond to innovations that occurred in prehistory.” (2009: 138) Although these findings, again, concern primarily the northeastern part of Slavic, it is indicative of the general line of development for Slavic aspect as a whole.

Morphologically, secondary imperfectivization is based on the same suffixes already discussed and illustrated in §3.2.1 above (Table 2 and Table 3). As has been mentioned, the old schemata (Table 2) became unproductive and were superseded by more transparent ones (Table 3), showing a tendency toward concatenation. Moreover, the number of productive suffixes decreased.

Among the suffixes mentioned in Table 3, the suffix *-iva-* has become the most productive means of secondary imperfectivization in Russian and Polish, whereas traditional Belarusian and Bulgarian have kept *-va-*; the West Slavic languages except Polish prefer *-ova-*. However, the productivity and functional range with which these suffixes are applied in different Slavic languages varies a great deal. By and large, the eastern part of Slavic appears to show more propensity toward secondary imperfectivization (with Bulgarian as the “leader”). Productivity of secondary imperfectivization, in turn, seems to correlate with a specialization of secondary imperfectives in the domain of iteration (cf. Arkadiev [Arkad’ev] 2015: 122–125 for an overview and references). The iterative meaning was facilitated by the opposition to the respective simplex in cases where the simplex stem had been preserved and the prefix acted as a telicizer₂, but did not modify the lexical meaning of the deriving simplex. As a consequence, there were two imperfective stems (the simplex and the secondary suffixed one) relating to the same prefixed perfective stem without a change of lexical meaning. This situation holds on up to today;²² compare, for instance, Russ. *maza-t*’^{ipfv} ⇒ *na-maza-t*’^{pfv} ⇒ *na-maz-yva-t*’^{ipfv} ‘smear (e.g. butter on bread)’.

Until now, we have been concentrating on the rise of derivational patterns responsible for the perfective:imperfective opposition in Slavic. However, in order to more fully understand the global significance of these patterns over largest possible stretches of time, we have to dwell on the appearance of the imperfect as well. It is a genuinely Slavic innovation, whose roots into earlier Indo-European can be found among the suffix schemata discussed in §3.2.1. As we argue below, it acquired inflectional character via analogical expansion from one of these

²²In Slavic aspectology this phenomenon is known under the name of *trojki*, i.e. triples.

schemata. This technique of stem extension is probably older than the sources of prefixes discussed in §3.2.2.

3.2.4 The inflectional aspectual opposition: the imperfect

While the Slavic imperfect is an innovation etymologically unrelated to the PIE imperfect,²³ the Slavic aorist largely continues the PIE aorist morphology with some few exceptions. However, this is not particularly telling and morphological inheritance does not correlate here with functional inheritance. The loss of the PIE imperfect led to the loss of the PIE aspectual opposition aorist vs. imperfect altogether. It is thus likely to assume that there was a period of Common Slavic when there was only one past tense form, namely, the later aorist (Andersen 2013: 21).

Indeed, the thematic aorist formations historically contain a number of old, PIE imperfects (Leskien 1919: 195; Pohl 1971: 352). After the new Slavic imperfect was created, the aspectual division of labor must have been re-apportioned, making something that was originally simply a general past (Forsyth 1972) into an aorist. Although this path might sound complicated, similar cases of functional development are found elsewhere, for example in English. Here, the only available form, the simple past (*He drank wine*) narrowed down its meaning to exclude the progressive meaning, which is now served by the respective continuous forms (*He was drinking wine*). Originally, the simple past was able to express also progressive meaning; compare, for instance, Norwegian *Han drakk* or German *Er trank* ‘He drank/was drinking’. Of course, the innovated imperfect:aorist distinction in Common and Early Slavic differed from the English simple:progressive opposition in that the latter applies to all tense levels, not only to the past. However, the logic of redistributing parts of the actionality domain when a new aspect gram emerges is basically the same.

Yet, the question is how the imperfect emerged in Common Slavic. The Slavic imperfect *mьn-ě-(j)a-xъ* ‘I thought’ or *glagol-a-(j)a-xъ* ‘I spoke/was speaking’ is synchronically formed from the aorist stem (*mьn-ě-* or *glagol-a-*) or from the infinitive stem (both are most frequently homonymous) by means of the marker *-(j)a-* with a set of imperfect endings somewhat different from the ones of the aorist (2SG, 3SG, 2PL, 3PL); cf. Pohl (1971: 359).

Since Franz Bopp this marker has traditionally been considered to have emerged from a periphrasis with an auxiliary (most accounts assume some form

²³The reader may be reminded that the PIE imperfect was formed as the past tense of an imperfective (*root present*) stem by means of the past tense prefix and the non-present person-number-voice attached to this stem (Table 1, §3.1 above).

of the verb 'be') and some deverbal noun/participle that subsequently univerbated (Leskien 1919; Stang 1942: 82; Kortlandt 1986: 253ff. Lühr 1999), assuming somewhat unusual word order: participle-auxiliary. Since the initial sound(s) of the auxiliary merged with the final syllable of the alleged deverbal noun/participle, there is space to hypothesize about the exact phonological and morphological shape of the alleged auxiliary. Thus, positing an original auxiliary **ēsom* 'I was' explains where the dedicated set of imperfect endings came from, since the latter are neither aorist nor present (nor old perfect) endings. The major difference between the aorist and imperfect ending sets is the absence in the former, but presence in the latter, of a thematic vowel **-e/o-* between the aorist/imperfect marker *-x-* (< **-s-*) and the old past-tense endings.²⁴ This sequence of **-s-* and the thematic vowel **-e/o-* is indeed found in the alleged **ēs-o-m*.

Unfortunately, this traditional explanation faces a number of problems, one of which is that it crucially hinges upon the form of the auxiliary **ēsom* 'I was', which as such is not attested anywhere in Slavic (or closely related Baltic) and most probably never existed.²⁵ Furthermore, it seems that the distinction between thematic and athematic endings is rather one of allomorphs and not of etymologically distinct morphemes. Indeed, athematic imperfect endings are also found, e.g. in the dual *-sta* (2DU) and *-ste* (3DU) alongside thematic *-šeta* (2DU), *-šete* (3DU) (Pohl 1971: 349) as well as in all imperfect forms of the verb *by-ti* 'be' with the stem *bě-* for which the traditional periphrasis account sketched above does not offer any explanation. Finally, this model does not account for the morphological shape of the stem of the lexical verb underlying the imperfect (Pohl 1971: 349–350).

²⁴The only exception is the first person containing the thematic vowel **-o-* also in the aorist, cf. both aorist and imperfect: *-xъ* (SG)/*-xomъ* (PL) < **-s-o-m/-s-o-mos*. The derivation from a PIE imperfect **e-h₁es-o-m* would indeed explain the thematic vowel. However, since the aorist ending set equally attests the thematic vowel in the first person singular and plural, it is more likely to assume that two different sets of endings for the past tense existed in Common Slavic: the ones based on the suffix **-s-* with no thematic vowel and the ones with **-s-* and the thematic vowel.

²⁵This form is, allegedly, a morphologically somewhat modified IE imperfect **e-h₁es-o-m* (as can be deduced from Leskien 1919: 196) or perfect **h₁e-h₁ós-e* (Stang 1942: 82; Kortlandt 1986: 253). The former assumes the past-tense prefix **e-* (the augment) which is attested nowhere else in Slavic, nor in the closely related Baltic languages, and is therefore highly hypothetical (Pohl 1971: 349). The latter is equally hypothetical because the IE perfect of the verb 'be' was formed on the basis of the suppletive stem **bueh₂-* (Slavic *by-*); moreover, the perfect reduplication is equally unattested in Slavic and Baltic. Finally, the PIE perfect had a different set of endings, which are attested in early Slavic (with the verb *vid-/věd-* 'see, know') and hence would be expected to appear in the imperfect as well if this account were correct.

Since the periphrasis-based approaches face some quite unsolvable problems, other scholars have advocated a derivational approach (*inter alia*, Jerzy Kuryłowicz 1937, 1960, Bech 1971; Arumaa 1985: 285). Maslov (2004[1954]: 142–143) suggested that there must have been some relation of the suffixes of the imperfect *-ě-* and *-a-* with the same suffixes found in aktionsart derivations such as *šed-ě-ti* ‘be seated, sit’ vs. *šed-* (in *šes-ti*) ‘sit down’, *bød-ě-ti* ‘be awoken’ vs. *budi-ti* ‘waken s.o.’ and *im-a-mb* ‘I have’ vs. *jeml-ju* ‘I take’, *plav-a-ti* ‘swim, drift’ vs. *plu-ti* ‘idem’, etc.

A breakthrough in the discussion between the periphrasis-based and derivational approaches was achieved by Ostrowski (2006), who independently from Slavic data identified the morphological pattern for marked unbounded verbs (derived pluractionals, duratives, iteratives, etc.) in the closely related Baltic languages. In Baltic, the pattern **-j-e/o-²⁶* (present tense) / **-jā-* (past tense) is found to mark stems denoting unbounded eventualities. Morphotactically parallel to the Slavic imperfect, this pattern derives unbounded verbs from the past tense stem of the verb. Recall that the Slavic imperfect is mainly derived from the aorist stem of the verb, which was originally the default past stem. Consider the examples from Lithuanian and Latvian in Table 6.

This strategy both morphologically and semantically equals the one found in the Slavic imperfect except, of course, for the person-number desinences. Moreover, there are even one-to-one correspondences between the past form of the Baltic marked-unbounded verbs and the Slavic imperfects (Ostrowski 2006) (Table 7).

Other parallels can be added: Baltic and Slavic **tek-ē-jā-* found in OCS *teč-a-α-xomv* (flow-NPRS-IMPF-1PL) and Lith. *tek-ė-jo-m*, Latv. *tec-ē-jā-m* (flow-NPRS-UNBOUND.PST-1PL) ‘we flew/were flowing’; Baltic and Slavic **eisk-ā-jā-* found in OCS *isk-a-α-xomv* (search-NPRS-IMPF-1PL) and Lith. *iesk-o-jo-m* (search-NPRS-UNBOUND.PST-1PL) ‘we searched/were searching’. Although the two suffixes used to form marked unbounded verbs, namely, the suffix **-ē-* or **-ā-* for past/aorist (Stang 1966: 387; Pohl 1971: 356) and the suffix **-jā-* for unboundedness were originally distinct suffixes, they tended to merge into one conglomerate suffix **-ējā-/*-ājā-* in both Baltic and Slavic; compare imperfect forms in *-ě(j)a-xv* and *-a(j)a-xv* in Slavic and verbs in *-ējā-/-ājā-* in Baltic.²⁸

²⁶Baltic, but not Slavic, has generalized the thematic vowels **-e/o-* into **-o-*; in modern Baltic we have *-a-* throughout.

²⁷Lithuanian *o* is historically **ā*.

²⁸This was additionally facilitated by the change in Common Slavic from **ē* to **ā* after palatal consonants, yielding a merger of **-ējā-/*-ājā-* into **-ājā-*, and, as shown in Ostrowski (2006), some analogical restructuring of Baltic **-ē-* and **-ā-*-based past tenses. Compare, for instance,

8 Diachrony and typology of Slavic aspect: What does morphology tell us?

Table 6: The original derivational pattern of semantically and morphologically *marked-unbounded* verbs (pluractional, durative, etc.) in Baltic

Infinitive	Past tense stem	Marked unbounded (pluractional, durative, etc.)
Lith. <i>py-ti</i> 'begin to give milk'	Lith. <i>pij-o-</i> (* <i>pij-ā-</i>) 'began to give milk'	Lith. <i>pij-o-jo-</i> (* <i>pij-ā-jā-</i>) 'was giving milk/gave milk (repeatedly), etc.'
Lith. <i>gul-ti</i> 'lie down'	Lith. <i>gul-ė-</i> (* <i>gul-ē-</i>) 'lay down'	Lith. <i>gul-ė-jo-</i> (* <i>gul-ē-jā-</i>) Latv. <i>gul-ē-jā-</i> 'was lying/lay repeatedly, etc.'
Lith. <i>min-ti</i> 'remember'	Lith. <i>min-ė-</i> (* <i>min-ē-</i>) 'remembered'	Lith. <i>min-ė-jo-</i> (* <i>min-ē-jā-</i>) Latv. <i>min-ē-jā-</i> 'was mentioning/mentioned (repeatedly), etc.'

Table 7: Morphological and etymological correspondences between Slavic imperfects and Baltic (Lithuanian) marked-unbounded verbs in the past (Ostrowski 2006)

Past tense	Marked unbounded
* <i>znā-</i> OCS. <i>zna</i> 'know.AOR.3SG' Lith. <i>pa-žino</i> ²⁷ 'PRF-know.PST.3'	* <i>znā-jā-</i> OCS. <i>zna-a-še</i> 'know-IMPF-3SG' Lith. <i>žino-jo-me</i> 'know-UNBOUND.PST-1PL'

From this derivational historical explanation of the Slavic imperfect, two conclusions immediately follow: (i) It is the stem of the imperfect forms itself which carries the grammatical semantics of the imperfect, not the endings based on *-x-*, whose function is to refer to the past tense. (ii) The Slavic imperfect alongside its Baltic counterparts is of derivational origin and its inflectional status in Early Slavic is secondary.

Old Lithuanian *isch-tirr-a* (**iš-tīr-ā*), which corresponds to modern Lithuanian *iš-tyr-ė* (**iš-tīr-ē*) 'examined'.

Moreover, as argued in Seržant (2008: 314), Slavic itself attests this derivational pattern as well. Compare Old Russian *da-ja-ti* ‘give’ with the imperfect *da-ja-xu* (3PL) and the present *da-j-utъ* (3PL) originally derived from the simplex aorist *da-* (e.g., OCS *da* ‘give.AOR.2/3SG’), but also *li-ti* ‘pour’ vs. *li-ja-ti*, *dě-ti* ‘do’ vs. *dě-ja-ti*, *kry-ti se* ‘hide [INTR]’ vs. *kry-ja-ti se*, *sta-ti* ‘stay’ vs. *sta-ja-ti*, etc. Interestingly, while the Old Russian dictionary (Sreznevskij 1893–1912: 635) lists the imperfect *da-ja-xu* (3PL) in the lexical entry of *da-ja-ti*, it is, at the same time, the regular imperfect form of the simplex *da-ti*. In the same way, the imperfect *dě-ja-še* (3SG) may be just the past tense of *dě-ja-ti* or the imperfect of *dě-ti*, etc. In other words, the derivational pattern **-je/o-* (present tense) / **-jā-* (past tense), established by Ostrowski (2006) independently for Baltic, re-occurs here in the following Old East Slavic verbs: the present *da-j-etъ* (3SG) / *da-j-utъ* (3PL) is historically **dā-je-ti* (3SG) / **dā-jo-nti* (3PL), whereas the past of the derived atelic counterpart, alias imperfect, is historically **dā-jā-*.

The “imperfect” thus is attested in present tense and infinitive forms for some verbs in Slavic as well: the imperfect *da-ja-xu* (give-IMPF- IMPF.3PL), the present *da-j-utъ* (give-IMPF- PRS.3PL) and infinitive *da-ja-ti* (give-IMPF-INF). Finally, the semantics of the “imperfect” confirms this analysis: both the imperfect and the verbs in **-je/o-* (present) / **-jā-* (past) signify marked unbounded meanings. Following Ostrowski (2006) and amendments by Seržant (2008), we assume that the Slavic imperfect, e.g. *da-ja-xu*, is just the marked unbounded derivation restricted to past tense for many verbs while some few Old East Slavic verbs just mentioned (*da-j-a-ti* ‘give’, *kry-j-a-ti se* ‘cover’) still attest the whole paradigm. The derivational nature is independently confirmed by the cognate derivation in Baltic. We therefore assume the following system for Common Slavic (and, *mutatis mutandis*, Proto-Baltic; see Table 8).

Table 8: The Common Slavic system exemplified by the verb *da-* ‘give’

	Default	marked unbounded
Present	<i>dad-</i> ‘give, are giving’	<i>da-j-</i> ‘are giving, give (repeatedly), etc.’
Past	<i>da-</i> ‘gave, were giving’	<i>da-ja-</i> ‘were giving, gave (repeatedly), etc.’

This system is very close to what we find in Baltic, which is generally more conservative than Slavic. The creation of the imperfect as a dedicated category has probably to do with the fact that marked unbounded verbs were used in the present more rarely than in the past tense. The reason for this assumption is that there is generally a strong pragmatic bias of present tense for unbounded

actions, while there is no such bias in the past tense. Thus, the present tense was the place where the distinction between the default simplex verb (e.g. *dad-*) and the marked-unbounded verb (e.g. *da-j-*) was less relevant or unnecessary. Likewise, in Romance languages, inflectional aspectual distinctions were coded only in the past tense but not in the present. Consequently, unbounded actions did not need to be marked as such in the present but must be highlighted in the past. Therefore, we assume that for many verbs the present tense of the marked unbounded equivalent simply was not, or was only rarely used while the simplex covered all the necessary contexts. This asymmetry between past and present uses of marked unbounded verbs formed by the suffix **-j-* (**-je/o-* (present tense) vs. **-jā-* (past tense)) was the reason for the conventionalization of the past tense use into a dedicated category of imperfect and not vice versa, as is sometimes assumed (e.g., in Borodič 1953).

Furthermore, the claim that the Slavic imperfect is historically a derivational pattern based on the suffix **-j-* to derive marked unbounded verbs implies one important aspect for its emergence. As has been briefly illustrated above (§3.1), for the PIE lexical perfectives the aorist was simply the bare root. In turn, their present tense stem had to be additionally marked by some suffix in order to make it imperfective. Crucially, one of these markings was precisely the suffix discussed here, namely, **-je/o-*;²⁹ compare the paradigm of the perfective **g^uem-* ‘come, arrive’ in Table 9 (Seržant 2008: 315). Moreover, analogically to the Slavic imperfect, this PIE suffix derived the imperfective from the perfective stem, as illustrated in Table 9.

Table 9: The late PIE pattern for the derivation of the imperfective counterpart from the perfective verb **g^uem-* ‘come, arrive’

Perfective	Imperfective
<i>*(h₁e)-g^uem-t</i>	<i>*(h₁e)-g^uem-je-t</i>
‘(PST)-arrive-3SG.ACT’	‘(PST)-arrive-IPFV-3SG.ACT’
attested in	attested in
Vedic Sanskrit aorist <i>á-gan</i> ‘(PST)-arrive.3SG’),	Greek <i>baínō</i> < <i>*g^um-jo-</i> ‘I am going’,
<i>á-gm-an</i> ‘(PST)-arrive-3PL’ and	Latin <i>uen-iō</i> < <i>*g^um-jo-</i> ‘I am going’
Homeric Greek aorist <i>bá-</i> (< <i>*g^um-</i>)	

²⁹This suffix is spelt conventionally as **-jé/ó-* in IE linguistics, but we skip this notation for reasons of simplicity of comparison.

To sum up, Slavic inherited from (late) PIE not only the suffix itself and the function but also its morphotactic distribution: it attaches to perfective stems (aorists) to derive imperfectives (Seržant 2008).

3.2.5 Continued functional development

We have discussed the emergence of the imperfect based on morphological evidence. When it comes to the functional load of the imperfect, we observe the following development:

Stage 1: The imperfect develops from marked unbounded verbs that became gradually restricted to the past tense. They were derived with the suffix clusters **-ā-jā-/*-ē-jā-* from the respective simplexes and represented initially distinct lexemes (compare Old Russian *da-ti* ‘give’ vs. *da-ja-ti* ‘give (unbounded)’).

Stage 2: The past tense forms of the marked unbounded verbs such as *da-ja-xu* ‘they gave’ became associated with the simplex (*da-ti* ‘give’) in terms of an inflectional category (imperfect). This category acquired a more general meaning of imposing an imperfective operator on the meaning of the underlying verb.

Residuals of stage 1 are found in the earliest Old Church Slavonic documents. Here, the verbs that would later be reinterpreted as imperfective via secondary suffixation were predominantly or almost exclusively (depending on the text) used with the imperfect and not with the aorist to code past reference (cf. *inter alia*, Borodič 1953; Maslov 2004[1954]: 141; Kølln 1957; Ivanov 1964: 386; Seržant 2009; Eckhoff & Haug 2015).

In later Slavic, at stage 2, the imperfect:aorist distinction – guided by labor division between the old past tense (aorist) and the new marked atelic₂ past tense (imperfect) – gradually developed into viewpoint aspect. The latter became orthogonal to actionality distinctions. Thus, Maslov (2004[1954]), drawing on earlier claims by Potebnja and some others, showed that there was a trend towards a division of labor between the imperfect:aorist and the actionality type. This trend appeared incipiently also in texts of a genuinely Early East Slavic character (see below). The imperfect continued to be the default past tense for atelic₂ predicates, but with telic₂ predicates its function was to superimpose its unbounded meaning on the lexically conditioned telic₂ meaning. This yielded what Maslov (2004[1954]: 149) referred to as *multiply-perfective* meaning (Russ.

kratno-perfektivnoe značenie): the completion of every act is coded by the telic₂ stem, while the unboundedness of the chain of these acts is indicated by the imperfect. Consider the well-known example with the imperfect of perfective verbs meaning ‘die’ and ‘carry out’:

- (10) Early East Slavic ((Codex Laurentius) Kiparsky 1967: 221)
ašte kto umrj-aše, tvorj-axu tryzn-o(y)
 when INDEF.NOM die[PFV]-IMPF.3SG do[PFV]-IMPF.3PL tryzna-ACC.SG
nadŭ nimŭ
 above him.INS
 ‘Each time someone **died** they **carried out** the tryzna [a rite] on him.’

Therefore, the development of the multiply-perfective meaning is old, but probably it was acquired already independently by different Slavic branches. It is well-developed in modern Bulgarian (Breu 1994: 37–39), but, apart from early East Slavic, it is also incipiently attested, for instance, in Old Czech (Maslov 2004[1954]: 172, 175). Additionally, it could also have a conative (11) or a modal (ir-realis) reading (12), although the latter is most probably recent (Maslov 2004[1954]); both examples are cited from Maslov (2004[1954]: 142):

- (11) Old Church Slavonic
Da-ěxŭ emu pi-ti ocŭtŭn-o
 give[PFV]-IMPF.3PL him.DAT drink[IPFV]-INF vinegarish-N.SG
vin-o. Onŭ že ne prijŭtŭ.
 wine[N]-ACC.SG
 ‘They **offered** [more lit.: tried giving] him to drink wine with vinegar. But he did not accept/take it.’ (Mark 15, 23)
- (12) East Slavic
Ne lěpo li ny bj-ašetŭ, brat-ie,...
 NEG proper Q us.DAT be-IMPF.3SG brother-VOC.PL
 ‘Wouldn’t it **be** proper for us, oh brothers, if ...’ (Igor’s Tale, end of 12th century)

In general, the imperfect is lost earlier than the aorist,³⁰ but it still existed in early East Slavic and was not a borrowing from Old Church Slavonic, as a number

³⁰This diachronic constant of Slavic is reversed only under conditions of intense contact. Thus, Molisean and Resian Slavic preserve the imperfect, but have lost their aorist in favour of the previous perfect (> past), as have their Italian contact varieties (Breu 2005: 41–43; 2006: 71–72). However, apart from being conditioned by contact, this development belongs to considerably later periods.

of peculiarities not found in the latter show (Maslov 2004[1954]: 172). While it is well attested in the 11th c. AD (Silina 1982: 68–69), later, for example, in the *Russkaja Pravda* (1282), only aorist forms but no imperfect forms are attested (Ivanov 1964: 388). Admittedly, the imperfect is attested in genuine East Slavic texts of high registers (such as chronicles) until the 16th c. (Kiparsky 1967: 220).

3.2.6 Summary: the emergence of Slavic aspect

Before we turn to the typological background and other IE languages, let us summarize the results assembled so far. First, the aspectual system of PIE marks predominantly imperfectives and leaves the perfectives morphologically unmarked (type D according to the classification used in §4 below). This remains so into the Common Slavic period, at which point this old system disappears and the development towards coding perfectives (type A) begins. Late Common Slavic is already of type A. Second, the emergence of Slavic aspect is partly rooted in some few – considerably remodelled – morphological schemata of PIE and in a new morphological strategy, namely, prefixation that is exclusively associated to the perfective aspect (thence type A). Third, in contrast to its ancestor language, Slavic vehemently strives after concatenation in its aspectual coding inventory, abandoning various fusional co-effects in morphonology by mere deletion or by reanalysis. Finally, by its origin the imperfect is a derivational category restricted to the past tense by conventionalization. In later periods, the imperfect and, consequently, the aorist tend to interact compositionally with the aspectual properties of their input, developing functions that are orthogonal to the $\text{telic}_2:\text{atelic}_2$ distinction of the verb stems.

On this background, the question becomes especially intriguing as to why the newly developed imperfect (together with the aorist) vanished later in the predominant part of the Slavic-speaking territory, whereas the perfective:imperfective opposition gained ground and developed into a very stable system.

4 Classificatory aspect elsewhere in the world

Let us now map the different stages in the development of the Slavic perfective/imperfective opposition onto a typological backdrop, before we come to a comparison with other IE languages in Europe and areal considerations in §5. According to Dahl & Velupillai (2013), perfective/imperfective distinctions “seem to be less skewed in their geographical distribution than, for instance, past tenses”. While this holds true for the coarse global distribution of the grammatical op-

position as such, there seems to be a rather scattered worldwide distribution of how relations between perfective and imperfective values are marked: “There are languages in which the perfective has no marker and the imperfective has an overt marker, and vice versa, but most often (at least in our sample) no clear marking relations can be identified. (One reason for this is that the distinction is frequently manifested by stem alternations and similar processes.)” (ibid.). The addition in brackets comprises not only morphonological adaptations between stem and suffix, but also combinations with some other morphological devices such as root ablaut in Classical Greek, cf. *leip-ō* ‘remain.IPFV-PRS.1SG’ vs. *é-lip-on* ‘PST-remain.PFV-PST.1SG’.³¹ The morphological system of aspect in contemporary Slavic differs from the type found, e.g., in Classical Greek by its higher degree of concatenation: it tends to abandon inherited morpho(n)ological co-effects such as root ablaut and stem alternations and to create derivational transparency. Morphonological fusional co-effects do exist in Slavic as well, but they usually concentrate around present vs. infinitive stem distinctions and not aspect. Compare, for instance, Russ. *pokaza-l* ‘show.NPRS-PST.SG.M’ vs. *pokaž-u* (< **pokaz-j-u*) ‘show.PRS-1SG’, which both belong to the same perfective stem, and contrast this with example (6) in §2.4.

We observe a tendency towards concatenation in the history of postclassical Greek, too. However, in contrast to Slavic, Greek considerably abandoned the PIE distinction between tense and aspect, which are coded cumulatively in the finite verbs already in the classical period. From the Koiné period on, we notice a tendency to abandon aspect distinction in the non-finite domain as well. Thus, the concatenative nature of the perfective/imperfective distinction as well as the non-cumulative coding of tense and aspect in Slavic is special cross-linguistically and differs from the archaic IE languages.

Now, although the derivational character of the Slavic perfective/imperfective distinction has in principle been acknowledged by some typologists, classificatory aspect has so far not really been recognized in the typological literature on TAM grams and systems.³² It therefore does not come as a surprise that a really

³¹Osten Dahl (e-mail, 9/16/2015): “we had in mind a situation like that in Classical Greek, where the perfective-imperfective distinction is manifested both in endings and in the choice between the present and the aorist stems – and the relationships between these two is highly idiosyncratic, involving ablaut (as in *leip-* vs. *(e)-lip-* ‘remain.PRS-’ vs. ‘(PST)-remain[AOR]-’), affixation (as in *kale-* vs. *(e)-kale-s-*, i.e. ‘call.PRS-’ vs. ‘(PST)-call-AOR-’), infixation (*la<m>b-an-* vs. *(e)-lab-*, i.e. ‘take<PRS>-PRS-’ vs. ‘(PST)-take.AOR-’), suppletion (as in *erkho-* vs. *(e)-elth-*, i.e. ‘come.PRS-’ vs. ‘(PST)-come.AOR-’) and reduplication (as in *di-do-* vs. *(e)-do-*, i.e. ‘REDUPL-give-’ vs. ‘(PST)-give.AOR-’).” (Translations and glosses added.)

³²To our knowledge, Vladimir Plungjan was the first who developed further the idea that Slavic aspect should be conceived of as a classificatory category (cf. Plungjan 2000: 125–126).

systematic study on the world-wide distribution of classificatory aspect systems is lacking. The empirical work of Arkadiev & Shluinsky (2015), therefore, is particularly welcome as an important pilot investigation. For a language to be included into Arkadiev & Shluinsky's convenience sample they required that the perfective member of the opposition present a situation as limited in time. Depending on the more specific type of the perfective/imperfective opposition, the expression of limitation could arise from completion (with telic₁ lexemes) or it could simply represent a temporal kind of limitation, i.e. a delimitative or ingressive meaning (with both telic₁ and atelic₁ lexemes).

Arkadiev & Shluinsky's sample confirms that classificatory aspect systems are by no means a unique property of Slavic; they can be encountered in different parts of the world. Arkadiev & Shluinsky found such systems in the following languages (groups) and areas:

- (i) IE: Slavic, Baltic (Latvian, Lithuanian), Yiddish, Istro-Romanian, Ossetic (Indo-Iranian)
- (ii) Kartvelian: Georgian³³
- (iii) Uralic: (a) Samoyedic (Enets, Nenets, Nganasan, Selkup), (b) Ugric (Hungarian, Mansi/Vogul), (c) Finnic (Livonian)
- (iv) Altaic: Tunguso-Manchu (Even)
- (v) Afro-Asiatic: Chadic (Margi)
- (vi) Austronesian: Oceanic (Mokilese, Kusaiean)
- (vii) Sino-Tibetan: Northern Tibeto-Birman (Qiang, Gyalrong, Tangut)
- (viii) Eskimo-Aleutic: West Greenlandic
- (ix) Amerindian languages (different genealogical affiliations): (a) Pomo (Kashaya, Eastern Pomo), (b) Araucanian (Mapuche), (c) Quechua (South Conchucos, Imbabura, Huallaga/Huanuco), (d) Aymara.

Note that all IE languages mentioned in (i) are spoken (or developed) in closer vicinity with some varieties of Slavic, predominantly with Russian; for these languages Slavic influence has been assumed as a major factor in the development

³³The monograph Arkadiev [Arkad'ev] (2015) contains a more comprehensive account of Kartvelian as a whole.

of aspect (cf. *inter alia* Breu (1992); Tomelleri 2009; 2010; Arkadiev 2014: 384, also with references). As for Ossetic, however, Arkadiev (2014: 399) has raised doubts that similarities with the Slavic-style system can be explained from language contact, because contact between Iranian and (Balto-)Slavic populations “must have significantly predated the time when the modern grammatical systems and especially their functional make-up started emerging. Rather, the Balto-Slavic and Ossetic systems of prefixal perfectivization are independent developments based on a common genetic inheritance.” Moreover, groups (ii-iv) include non-IE languages spoken in northern Eurasia. These should be taken into account when considering macro-areal patterns in the affixation of verb stems and their possible relation to developing systems of classificatory aspect, although only part of them can be considered as possible substrata that might have strengthened suffixation patterns of Slavic aspect (see §6).³⁴

Of course, this synchronic assembly hardly says anything about chronology, nor about the reasons why areal clusters evolve. Moreover, it does not tell much about peculiarities of Slavic aspect even in the context of the broader area surrounding Slavic-speaking territory. Additional parameters applied by Arkadiev & Shluinsky to subclassify the aspect systems of the languages mentioned in (i-ix) help recognize that “Slavic-style aspect” nonetheless deserves particular attention, both from a systematic and an areal perspective. Here, we take up two of their parameters.

First, one should examine the direction of derivation, determined on the basis of the predominating pattern³⁵ for underived stems (simplexes) along Arkadiev & Shluinsky’s classification. On the basis of their approach, four theoretically possible patterns can be established: simplexes may be either perfective or imperfective, and each of them may either be prefixed or suffixed to derive an equivalent of the opposite aspect. These patterns can be derived from Figure 1, which we draw after Arkadiev & Shluinsky’s investigation.

Slavic illustrates type (A): underived stems are predominantly imperfective and derive a perfective counterpart via prefixation. Here belong the Baltic lan-

³⁴A closer investigation of non-IE languages of northern Eurasia may reveal perfective/imperfective distinctions which have been unnoticed so far in typological research dealing with the more global distribution of grammatical distinctions. For instance, Nenets is claimed to lack grammatical marking of perfective/imperfective aspect in WALS (Chapter 65), whereas it figures in the sample of Arkadiev & Shluinsky (2015). Thus, while the assertion “Northern Europe outside the Slavic area has very little perfectivity/imperfectivity marking” (WALS, *ibid.*) may more or less remain tenable, the picture might change if a broader range of languages from entire northern Eurasia is investigated with more scrutiny.

³⁵Dominance is here understood in terms of type-frequency.

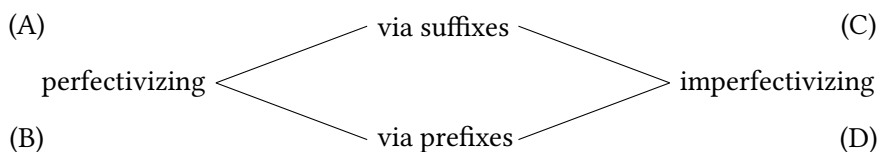


Figure 1: Patterns of derivation from simplex stems

guages, Georgian, Hungarian, Yiddish, Ossetic and Sino-Tibetan languages, too. By contrast, pattern (B), which includes simplexes that are predominantly imperfective, but which derive perfective counterparts via suffixation – is encountered in Margi (Chadic) and the Micronesian languages. More interesting is pattern (D) – simplexes are predominantly perfective and derive imperfective equivalents via suffixes – since it occurs in Samoyedic languages and in Even, which are spoken in northern Eurasia. Moreover, this pattern corresponds to the prevailing strategy of Proto-Indo-European to derive “imperfectives” from “perfective” simplexes by means of various morphological schemata most of which involve suffixation. Pattern (C) – the same as for (D), but with prefixes – has so far remained unattested.

Second, following Arkadiev & Shluinsky (2015), we may ask whether the language shows secondary imperfectivization or perfectivization, i.e. whether it allows already prefixed or suffixed stems to be additionally suffixed or prefixed in order to cause a change to the opposite aspect.³⁶ On this basis we can further distinguish whether secondary (im)perfectivization is achieved via a pair of prefixes or suffixes, or whether the secondary affix attaches to the stem from the other side of the already attached prefix or suffix, respectively. Thus, this parameter classifies according to a combination of direction of function (perfective → imperfective or imperfective → perfective) and the position of the affixes to each other (one after another or on opposite sides of the initial stem). The predominant

³⁶We disregard the existence of double prefixation (or ‘preverb stacking’) that does not change the aspect (e.g. Russ. *po-ras-stavit*^{pfv} ‘put each other on their places’ (distributive) ⇐ *ras-stavit*^{pfv} ‘put on their places’). We also ignore prefixes added “on top” of already secondarily suffixed stems (e.g. Russ. *po-ot-kry-va-t*^{pfv} ‘open one after another’ ⇐ *ot-kry-va-t*^{ipfv} ⇐ *ot-kry-t*^{pfv} ‘open’). All these are cases of so-called *external prefixes* among which quantifying (accumulative and distributive) functions prevail. Semantically they are of a different type, and for the system they have a different status than “simple” prefixation and secondary suffixation. We also neglect isolated cases and perfectivization of simplexes via suffixes. The latter is semantically restricted to semelfactives from atelic₁ simplexes denoting repetitive (often cyclical, mostly motoric) action (e.g. Pol. *mach-a-ć* ‘wave’ ⇒ *mach-nq-ć* ‘wave once’, *kiw-a-ć* ‘nod’ ⇒ *kiw-nq-ć* ‘nod once’), though productive in these confines. See the comments in §2.

Slavic pattern of secondary imperfectivization is suffixation of already prefixed stems. Another example of this pattern is Lithuanian (but not Latvian; see below). Arkadiev & Shluinsky do not adduce any other language with this pattern. Other languages considered by them show secondary imperfectivization via suffixes added to other suffixes (used as perfectivizers), e.g. Kashaya and Mansi. Chaining of suffixes is encountered for secondary perfectivization among Samoyedic languages (like Nenets), too. In turn, chaining of prefixes (with change of aspect) is attested in Mingrelian.³⁷

In general, however, the number of languages with any kind of secondary perfectivization or imperfectivization appears to be rather limited in contrast to the investigated sample. In particular, Arkadiev & Shluinsky (2015) argue that Latvian, Yiddish, Hungarian, Livonian, Georgian, Margi, Mapuche, Aymara and the Austronesian group do not attest such patterns. One gets the impression that many languages with a classificatory aspect system do not have a possibility to derive another stem (belonging to the opposite aspect) from an already derived stem. However, again, the reasons (and chronology) may differ: either such a possibility was never acquired (as probably in Yiddish or Latvian), or it might have been lost.

If both aforementioned parameters are considered jointly, we see that Slavic stands out against almost all areally contiguous languages and even against a larger northern Eurasian backdrop. Apart from Lithuanian, only Istro-Romanian is known as a non-Slavic language in which contacts with speakers of Slavic have led to the appearance of, and increase in, secondary suffixation (cf. Arkadiev forthcoming). In other words: Slavic (plus Lithuanian and Istro-Romanian) appear to be the only languages on a broader areal background which show productive patterns of prefixation and (secondary) suffixation used for the purpose of perfectivization and imperfectivization, respectively. Leaving aside now Istro-Romanian, the consistency with which this happens in Slavic and Lithuanian differs; Lithuanian in many respects shows a less grammaticalized stage than the Slavic languages which surround it. But the morphological patterns are fully parallel and some of them – such as **-āje/o-* (present)/**-ājā-* (past) and **-ēje/o-* (present)/**-ējā-* (past), discussed at length in §3.2.4 – are most probably inherited from a common Baltic and Slavic dialect continuum. Lithuanian has kept this “heritage” and revitalized it at a later stage with the new suffix *-inė-*, while Lat-

³⁷One has to admit that the imperfectivizing prefix comes between the stem and the perfectivizing prefix (which comes first also in the “derivational history”). In the following Mingrelian example the perfectivizing prefix is in **bold**, the imperfectivizing one is underlined: **ge-tmi-a-zic-en-d-u**; this has to be translated as ‘was laughing at him/her’ (Arkadiev 2014: 391).

vian has not developed any new productive aspectual suffixation which would go beyond strong lexical restrictions (see §5.4).³⁸ For example, the common suffix (*-āje/o-...) is retained in just a few verbs such as *brauk-t* ‘drive-INF’ vs. *brauk-ā-t* ‘drive-HAB-INF’.

To conclude, crucial for the rise of the Slavic aspect system based on stem derivation was the fact that one productive set of affixes (prefixation) at some point in history started being combined with another productive set of affixes (suffixes). It follows from the areal overview given above that these morphological preconditions are met only rarely in languages of the world. It is our conviction that this constellation is the key to understanding the rise of the Slavic aspect system. Above we have traced back the development of prefixation and suffixation of verb stems and argued that they developed from separate sources and diachronically at different periods of time: imperfectivization schemata represent old – albeit highly remodelled – patterns while the exploitation of prefixes for perfectivization is a much more recent development. In contrast, other IE languages in Europe that have exploited prefixation to code actionality (which is a pre-stage to aspect) have lost the old imperfectivization strategies altogether. This topic will be addressed in the next section.

5 Verb stem derivation in ancient Indo-European languages of Europe

In §3, we supplied a diachronic account of verbal prefixation and suffixation in Slavic. In turn, the preceding discussion in §4 served the purpose of recognizing the typological peculiarities of Slavic aspect and of relativizing claims concerning its alleged rarity. In this section, we want to critically assess some facts and findings that help cast light on the role verbal affixation might have played in shaping the aspectual character of verb stems in other IE languages outside of Slavic. Our survey is selective: we do not pretend to give an exhaustive account of preverbatation and prefixation (or of suffixation) in these languages, but we focus on languages (or language groups) with some closer areal affinity to at least some Slavic-speaking territory during the first millennium AD.

Many scholars have mentioned the widespread existence of preverbs (often also included into inventories of particles) attached to verbal stems in different old IE languages of Europe. The morphological status of these preverbs varies,

³⁸It did, however, create a somewhat productive suffix *-inā-* to derive morphological causatives and other deverbatives.

as they are sometimes characterized as proclitics, on other occasions as already tightly agglutinated parts of verbal stems, i.e. as prefixes. Possibly, this variation reflects different stages on a clitic-affix cline of morphologization. Admittedly, there is no straightforward correlation between this assumed cline and the development of a preverb into a prefix. One of the problems is that neither preverbs nor prefixes need be unstressed, so that we cannot be sure that it is cliticization as such which triggers the processes.³⁹ In the first place, however, tightness of coalescence with lexical stems does not *per se* give reliable information concerning the function of morphemes on a preverb > prefix-cline and their role in forming systematic oppositions pertaining to actionality and/or grammatical aspect. Note that investigations into preverbatation in ancient IE languages have concentrated largely on issues of morphologization (cliticization > agglutination) of preverbs originating from adverbs or so-called *verb particles* and on the question of what processes of coalescence tell us about constituent and argument structure in early IE.⁴⁰ Preverbs as mere aspectual bounders are mentioned rather occasionally, so that it is hardly possible to draw any conclusions as to whether the boulder function should be characterized as modification or as telicization₂; cf. for instance, Cuzzolin et al. (2006: 10). Among others, this applies to Ancient Greek, too, and for this reason we will not deal specifically with Greek anymore in this article.

5.1 Romance

This general picture obviously holds true also for Latin. In Classical Latin, many prefixes still functioned as markers of telicity₁, but this function deteriorated by Late Latin (after 300 AD; cf. Haverling 2003), thus more or less at the time of the Great Migrations. Therefore, we feel justified to say that, by and large, neither Romance nor its ancestor Latin pushed the use of preverbs further than the modificational stage (see the upper part of Table 4) and maybe some incipient stage (ii).

In the Romance successor languages of Latin, prefixes usually became lexicalized and opaque when they could no longer be separated from the stem; compare It. *in/segnare* 'teach', Fr. *s'en/dormir* 'fall asleep' (Haverling 2003: 125; Cuzzolin et al. 2006: 12), or the prefixes used did not carry any aspectual function, being

³⁹We want to thank Christian Lehmann for pointing this out to us.

⁴⁰Cf. for instance, Vincent (1999) on Latin and Romance, Boley (2004); Cuzzolin et al. (2006) more generally on preverbatation in diverse stages of early IE languages. Among others, Luraghi (2003) and Viti (2008) investigated the role of spatial prefixes, their relation to cognate prepositions and adverbs as well as their role in the syntax of Ancient Greek. As for Latin cf. Leumann et al. (1977[1926⁵]: 557–566) and Haverling (2003).

restricted, as a rule, to spatial and related functions (e.g. It. *ag-giungere—dis-giungere* ‘add, attach—separate’) or to comitative meaning or redoing (compare Romance *re-*, *con-* and their translational equivalents). Obviously, in older stages of Romance, e.g. Old French, preverbs were used widely, but according to the examples adduced in relevant publications (e.g., Dufresne et al. 2003) the function of these preverbs was restricted to modifications of the verbal action more or less like in modern German or Dutch.

Suffixes, in turn, proved unproductive, or they were incorporated into inflectional paradigms. The latter happened to Latin *-sc-*, which occurs in some forms of the present tense conjugations of Romance successor languages (e.g., It. *capisc-e* ‘s/he understands’ from *cap-ire*.INF ‘understand’). Cf. Allen (1995) on this process whereby a former derivational morpheme turns into a merely formal marker incorporated into inflectional paradigms. In Greenberg (1991) this process was called *regrammaticalization*. As we saw in the preceding sections, this is clearly not what happens when we distinguish perfective and imperfective stems. Only the development of the Slavic imperfect shows a change from derivation into inflection (see §3.2.4).

In sum, neither (late) Latin nor its Romance successor languages relied on productive prefixation strategies to code telicity₁. The same applies, *mutatis mutandis*, to suffixation strategies to mark actionality functions associated to imperfectivity. We are unaware of any reliable findings concerning possible contact relations of Vulgar Latin or its successor varieties in early Romance with Slavic. We thus refrain here from any comments on this issue.

5.2 Celtic

It is not entirely clear whether there were considerable contacts between Celtic and Slavic populations, in particular during the Great Migrations (cf. the critical remarks in Polomé 1972: 64–69 and Andersen 2003: 48). Although toponyms of Celtic origin have been attested as far east as in the Danubian delta and the upper Dniester basin (Blažek 2015), these traits of Celtic influence could have been due to settlements from the last centuries BC, when Celtic tribes had spread over vast territories of Europe and into Asia Minor. In fact, “Celtic speech, apart from possible enclaves, appears to have died out on the European continent by AD 500” (MacAulay 1992: 2), and the earliest form of Celtic that could be reconstructed more or less completely from extant sources, Old Irish, reflects a stage just after this time (approx. 6th–9th century AD; Thurneysen 1975[1946]: 1–11). Moreover, Old Irish was spoken in the northwestern periphery of an earlier Celtic dialect continuum, while contacts with Slavs could have occurred only on its opposite

end, and we do not know to which extent other Celtic dialects were comparable to Old Irish in terms of preverbatation (or suffixation). Gvozdanović (2009; 2015) wonders whether certain important typological changes in word prosody such as syllable structure and the direction of palatalization from regressive to progressive assimilation of the velars /k/, /g/, /x/ could not have been due to some Celtic influence. She links her argument to the Venetian region to which Celtic is supposed to have once spread. However, apart from Gvozdanović's observations on phonology (mainly word prosody) there are no really "hard core" arguments able to substantiate Celtic influence on Slavic. After all, "we do not have sufficient evidence to identify the individual contacting language, which may well have been the eastern European Venetic [...] of which we have no direct linguistic evidence" (Gvozdanović 2015: 97). The relation to Celtic, thus, remains unclear.

Therefore, the following brief remarks on preverbatation in Old Irish have to be taken with caution, at least insofar as we cannot say whether Old Irish did not differ, with respect to verbal stem derivation, from Celtic varieties which previously had been spoken on the European continent, some of them possibly in some proximity to speakers of Common Slavic.

Old Irish had some dozen preverbs (prefixes), most of them obviously in a transitional stage between clitics and affixes; the most widespread and prominent was *ro-*. Gvozdanović (2015: 104), summarizing Thurneysen (1975[1946]: 339–348), concludes that Old Irish *ro-* "perfectivizes the verb on the level of grammatical aspect, not only lexical aspect". She even goes further saying that the functional properties of this preverb, "as part of the verb phrase, are fully paralleled by the perfective aspect in Slavic". These parallels concern the combination with the imperfect, which yields repetition in the past (compare modern Bulgarian, see §3.2.5), and, first of all, prefixation of present tense stems which occurred only in gnomic or other inactual functions of the present (including dispositional modality, e.g. *as-ro-b(a)ir* 'can [= is able to] say' vs. *as-beir* 'says'). However, the term *perfective* probably entered the English translation of Thurneysen's authoritative grammar (written originally in German) as an inadequate rendition of Germ. *perfektisch* or *Perfekt* (Lambert 1995: 251, following McCone 1987),⁴¹ where it seems to mean accomplished action (Germ. *vollendete Handlung*), i.e. telic₂ predicates. Moreover, *ro-* (leaving aside other preverbs) was optional, verbs with an inherently telic meaning (= telic₁) could convey perfective values without *ro-* as well (cf. Lewis & Pedersen 1937: 141f., 245–248; Lambert

⁴¹Cf. Thurneysen (1909: 319). According to West (1981/1982: 252), the facts allow for an interpretation as mere anteriority marker as well, so that stems prefixed with *ro-* should probably be considered 'perfect forms'.

1995: 231–239). For this reason, Schumacher (2004: 81) proposed to consider *ro-* (and other preverbs) just as an augment of the stem that does not constitute any new category (differently Lambert 1995: 251f.).

These observations, as fragmentary as they are, seem to be indicative rather of a stage in which preverbs (prefixes) frequently but optionally were used to mark inherent boundaries, i.e. to create telic₂-predicates under favorable conditions and independently from tense. This corresponds to stage (ii) in Table 4. This resembles the situation we encounter in Gothic, to which we now turn.

5.3 Gothic

Germanic has been regarded as being much closer to Slavic and Baltic than any other of the IE groups in Europe. It is very probable that the speakers of Gothic, as the best-documented old Germanic language, were in rather close contact with Baltic and Slavic tribes, before they fell victim to the Great Migration (in which they intensely participated), so that by the 6th c. AD they disappeared from history in eastern Europe (Kotin 2012: 13–15), while the Visigoths on the Iberian Peninsula eventually abandoned their language at the beginning of the 7th c. AD.

The Gothic verbal prefix *ga-* was the most salient representative of a series of prefixes, and its behavior was very similar to Old Irish *ro-*.⁴² The known documents (primarily Wulfila's Bible) reflect the state of the language from approx. the 4th c. AD (i.e. slightly earlier than Old Irish). These doculects were, of course, influenced especially by Greek, and also by Latin (Kotin 2012: 21). In particular verb stems prefixed with *ga-* have, since Streitberg (1891), been evoking divergent claims about their status as “perfectivizers”. As with the Old Irish preverbs, most researchers (except Maslov 1959a) have remained rather vague as for what they understand by *aspect*, in particular which role is played by prefixes, and whether the designation *perfective* characterizes a lexical or a grammatical feature. In Gothic, *ga-* and some more prefixes⁴³ functioned not only as lexical modifiers, but they often fulfilled functions that are reminiscent of mere bounders of the action denoted by the simplex stem (see below). Thus, Kotin (2012: 287) writes that Gothic demonstrated “a relatively stable opposition of simplexes and so-called *ga*-composites [...], that can largely be interpreted as aspectual” (our translation). However, *aspectual* here does not have the value of a grammati-

⁴²The same applies to Old High German (*gi-*) and other prefixes in the most ancient stages of documented Germanic languages (on which cf. Kotin 2012: 297, 397).

⁴³Kotin (2012: 393f.) names *dis-*, *fra-*, *fair-*, *ga-*, his examples also show *us-* (2012: 397), cf. also Guxman (1998: 205–209). Braune & Ebbinghaus (1961: 124) name some more, and they mention tmesis and other signs of a looser juncture between prefix and stem (ibid: 124–125).

cal opposition, but, rather, of a complex of actional and voice-related features. Remarkably, Kotin also mentions that in quite a few cases, prefixes did not so much modify the lexical semantics of the simplex, but rather made it more pronounced; conversely, some simplex stems “selected” a prefix depending on their own inherent semantics (2012: 394–395).⁴⁴ This observation brings to mind the Vey-Schooneveld effect of prefixes discussed in §3.2.2.

However, even if we regard *ga-* as a perfectivizer proper, its application remained restricted both in terms of the range of verb stems with which it could be combined (type-frequency) and the reliability with which it was encountered in cases when it should be expected from the meaning in discourse (token-frequency). The application of *ga-* (or any other prefix) was by no means very consistent. Moreover, the extant texts do not allow for too far-reaching conclusions about which pairs of simplex/prefixed stems were distributed over different aspectual functions, in particular as concerns finite forms (cf. also West 1981/1982: 250f. and the review of the literature until the mid-1950s in Maslov 1959a). It is symptomatic that even Kotin’s thorough examination of Gothic texts brought to light such pairs only for inherently telic₁ verbs (cf. *ga-swiltan* vs. *swiltan* ‘die – be dying [Germ. *im Sterben liegen*], *fullnan* ‘fill [INTR]’ vs. *ga-fullnan* ‘fill [INTR], become full (to its limits)’ and for verbs of passive perception (e.g. *saihan* ‘see’ vs. *ga-saihan* ‘catch sight of [Germ. *erblicken*]). With these verbs, *ga-* served to mark off the initial boundary of the perceptual state (= atelic₁), whereas with telic₁ verbs, namely those denoting more punctual changes *ga-* modified the lexical meaning (e.g. *niman* ‘take’ vs. *ga-niman* ‘take with o.s., take along’, *qiman* ‘come, arrive’ vs. *ga-qiman* ‘gather, assemble [INTR]’); cf. Kotin (2012: 294–300, 395–397).

In sum: it is not entirely clear whether Gothic *ga-* should be analyzed as a marker of telicity₁ or telicity₂, not least due to some terminological confusion in the literature. Examples such as Kotin’s *bindan* ⇒ *ga-bindan* ‘bind, tie (up)’, *swiltan* ⇒ *ga-wiltan* ‘die’ (see above) suggest that there was, at least, a considerable progress from telicity₁ towards telicity₂ in Gothic (our stage (ii) in Table 4 above). By contrast, Maslov’s (1959a) analysis leads rather to a characterisation of *ga-* as a marker of telicity₁ (stage (i) in Table 4).

⁴⁴With the exception of *ga-*, Kotin (2012: 394) ascribed a prototypical semantic function to each particular prefix: „in connection with various verb stems this function could either have remained practically unaltered, or it was modified to different degrees, depending on the modifications allowed or even required by the semantics of the verb stem. This property of the derivational basis exerts an impact not only on modifications of the basic semantic function of the prefix, but it also restricts the selection of the latter.” (our translation) For instance, *tairan* ‘tear’ ⇒ *dis-tairan* (≈ *ga-tairan*) ‘ditto’, *qistjan* ‘destroy’ ⇒ *fra-qistjan* ‘ditto’: *dis-* was lexically associated with separation, *fra-* with destruction and loss (2012: 394–395).

5.4 Baltic

The morphological prerequisites necessary for the innovations common to all later Slavic languages are present in Baltic as well. This allows to infer that the premises of these innovations must have developed in a larger dialectal region of early IE, of which Slavic and Baltic formed part. Concomitantly, the old layer of Baltic suffixation is etymologically related to the respective old layer of Slavic (see §3.2.1 and §3.2.4). However, old suffixes have ceased to be productive. While varieties of Lithuanian created new productive suffixes such as *-inė-* (iterative, durative, etc.) or *-dav-* (habitual past), Latvian did not introduce new verbal suffixes with aspectual functions.

Latvian shows a certain opposition of *atelic₂/telic₂* predicates comprising non-punctual *telic₁*-verbs. This opposition is lexically restricted and builds on prefixed stems contrasted with the respective simplex stems that take verb particles part of which are cognates of the prefixes; for instance, *ie-nāca istabā* ‘in-come.PST.3 room.LOC.SG’ ‘entered into the room’ (usually *telic₂*) vs. *nāca iekšā istabā* ‘come.PST.3 inside.PRT room.LOC.SG’ ‘was entering the room’ (*telic₁*); cf. Holvoet (2001: 132–141), Arkadiev [Arkad’ev] (2015: 132–134). Verb particles are a relatively recent phenomenon, which most probably arose from contact with Germanic (Low and High German, Swedish) and Finnic (Wälchli 2001).⁴⁵

Lithuanian is different, since in its Aukštaitian dialects and the standard language it has introduced two new suffixes relevant for differentiation in actionality: semelfactive *-ėre-/-ėle-* and *-(d)inė-*; the latter takes on functions associated to unboundedness.⁴⁶ Remarkably, especially the latter suffix has been attested as particularly frequent (on type and token level) in southeastern Lithuania, i.e. in close vicinity with (East) Slavic. The suffix *-(d)inė-* has been extraordinarily frequent in (now extinct or moribund) insular dialects in Belarus. It is thus apparent that this new suffix gained frequency from contact with Slavic speakers (and Lithuanian-East Slavic bilingualism), but only in recent times (Wiemer 2009: 359–363; Arkadiev [Arkad’ev] 2015: 125–131). The same may hold true for double prefixation, which is otherwise unusual in Lithuanian and Baltic in general, but quite widespread in East Slavic. It would be risky to try to extrapolate into a remote past these facts about the distribution and frequency of these younger verbal affixes that are relevant for aspectual distinctions.

⁴⁵There is much of mutual influence between Latvian and Finnic (Estonian, Livonian) contact in here, and Estonian, in turn, is probable to have introduced this technique under contact with Germanic (Hasselblatt 1990; Metslang 2001). Anyway, this recent innovation is in stark contrast to the otherwise strong suffixing strategy of Finno-Ugric.

⁴⁶Both suffixes certainly arose from some morphological reanalysis (as did most of the Slavic suffixes mentioned in §3.2.3).

6 Conclusion and an outlook

In this paper it has been our main concern to give a comprehensive assessment of the internal preconditions which made the rise of the contemporary aspect system based on stem derivation (perfective/imperfective verbs) of Slavic languages possible. We have restricted ourselves to the core of the system and inquired into morphological changes that affected the formation of verb stems in the prehistory and early history of Slavic. The analysis concerned both particular morphemes and patterns of affixation in relation to each other and to initial verb stems; we tried to trace back these patterns and morphemes from PIE into Slavic, pointed out genuinely Slavic innovations based on an IE heritage and discussed the further expansion or loss of early inner-Slavic developments. We have focused on changes that affected Slavic as a whole and stopped short at the point when, after the consolidation of the core system, inner-Slavic differences both in formal expression and in the range and hierarchy of functions became more pronounced.

Favorable inherited conditions are visible in the internal changes of Slavic since times prior to documentation (see §3). In asking whether or not Slavic aspect continues aspectually relevant oppositions found in PIE (cf. *inter alia*, van Wijk 1929; Stang 1942) we have to be careful not to mix up morphological schemata with functions of grammatical aspect or aspectual functions in general. Once this is taken into account, we can claim that the morphological devices used in Common Slavic to mark unboundedness *grosso modo* represent – albeit highly restructured and modified – heritage from late PIE. An important feature of Slavic morphemes to mark unboundedness is that there is a strong tendency towards morphological concatenation, away from non-concatenative PIE schemata. This trend can be reconstructed for Common Slavic and it continues to this day.

Preverbatation (particles, prefixes and intermediate stages) developed at the time of ancient IE languages. Especially the comparison with Old Irish (see §5.2) demonstrates that preverbs used as bounders of verbal action evolved in very different regions of Europe by the middle of the first millenium AD. Whether this testifies to spontaneous independent parallelism triggered by some propensity on the basis of inherited adverbs or should rather be explained by mutual contacts between subgroups in Europe (e.g. between early Slavic and Gothic), cannot be ascertained. However, preverbatation has been prominent especially for changes of valency or argument structure whereas, apparently, apart from Slavic, in none of these IE languages did prefixes (or other preverbs) start to productively

function as mere bounders of verbal action, without additional functions on the syntax-semantics interface. These patterns were then, in Slavic, strengthened by the combination with suffixes, which decayed in other IE languages of Europe.

Thus, for late Common Slavic we can also assume a tendency of extending the distinction between telic and atelic stems from a purely lexical opposition (i.e. from telic_1 vs. atelic_1) into an opposition in which realized telicity (= telic_2 meanings) is marked via prefixation. At a later stage, prefixes start serving also the differentiation of other aspectual meanings such as ingressivity or mere temporal delimitation (see Table 4 in §3.2.2). Simplexes, unmarked also with respect to telicity_2 (as there were both telic_1 or atelic_1 simplexes to begin with), underwent different, lexeme-specific developments still into recent centuries to stabilize aspect assignment of stems. Unprefixed, but suffixed stems – representing the oldest layer – played a subsidiary role in the emergence of the opposition. From the point of view of morphological patterns, the last step was taken when suffixes started being productively attached to already prefixed stems (so-called *secondary imperfectivization*). This pattern has remained less productive in the western half of Slavic, while it is very prominent in the eastern half (East Slavic, Bulgarian, Polish).

This being settled, a further aim of this paper consisted in demonstrating that, although Slavic is by no means unique in having developed a classificatory aspect system, it nevertheless stands out on a larger areal, namely Eurasian, background and in comparison to other IE groups in Europe. We thus compared diachronic and synchronic data of Slavic with somewhat fragmentary data against an areal and typological backdrop (§4) as well as with likewise fragmentary data from earlier stages of IE languages (§5).

Now, on the basis of this comparison, there arises a more intricate question, which, for the moment, we only want to state. Namely: one wonders to what extent the rise and consolidation of the Slavic aspect system can be explained as only a spontaneous evolution that just continued already existing preconditions of stem derivation. To what extent might contact with non-IE-speaking populations have helped trigger, or support, the consolidation of such continued development, which we do not find in areally close IE languages? To put it differently: there is no doubt that the morphological prerequisites necessary for the evolution of stem-derivational aspect in Slavic continued earlier patterns that were partly rooted in PIE. But why has only Slavic developed these prerequisites in such a consistent manner during the last, say, two millennia, whereas in other IE groups suffixation and/or preverbatization have gone other ways? In the latter, such prerequisites disappeared or were renewed (for instance, by separable verb

8 *Diachrony and typology of Slavic aspect: What does morphology tell us?*

particles), but nowhere else have prefixes and suffixes come together to jointly build a grammatical system as in the Slavic languages (except for much more recent developments as in some varieties of Lithuanian, obviously under East Slavic influence; see §5.4).

Slavic expanded over a large territory all over eastern Europe since about 600 AD; contacts with groups of speakers of Uralic or Turkic were, thus, very likely. In general, the existence of Finno-Ugric and Turkic adstrata and even substrata in the eastern part of Slavic can hardly be doubted.⁴⁷ However, whether contact with Finno-Ugric or Turkic-speaking populations might have been sufficient to strengthen suffixing strategies must be inquired in a well-considered manner, taking into account various kinds of (often indirect) evidence and equilibrating findings from different approaches. Among other things, it should be asked what morphological techniques of stem extension in possible contact languages looked like, which types were productive and resembled, in some way or other, stem derivation in early Slavic. For instance, according to Serebrennikov, many Finno-Ugric languages show suffixal extensions of verb stems with various functions from the domains of iterativity (repetitive or habitual action) or of semelfactivity. These aspectual meanings can be interpreted as remnants of an earlier stage, when dialectal differentiation was less advanced (Serebrennikov 1960: 31–34, 188).

As concerns Turkic, we may assume that its oldest reconstructable layer “operated entirely by adding suffixes at the end of the word and had a fully developed system of suffixes” (Clauson 1962: 27). Throughout, Turkic languages have experienced several renewals of suffixation, among others of suffixes modifying the aspectual character of the verb. Such suffixes developed via morphologization (enclisis > agglutination) from converb or auxiliary constructions (Johanson 1998a: 41–43, 1998b: 113–115; cf. also Erdal 2004: 262–272). In general, Turkic languages can be regarded as having remained astonishingly homogeneous in this respect (Menges 1968: 181; Johanson 1998b: 111). One wonders whether such findings cannot be more substantiated with respect to aspectual functions of suffixes (or postverbs, which preceded them in morphologization) at the dawn of written documentation of Turkic, i.e. from the early eighth century AD, and in subsequent centuries. One should seek contacts of Uralic and Turkic speaking populations especially for the Common Slavic period (400–900 AD), when the Slavic dialect

⁴⁷Cf. Veenker (1967) and Haarmann (2014) on Finno-Ugric, Stachowski (2014) on Turkic. Consider also the history of the Bulgars from the middle of the first millennium AD, a Turkic (Oghur) tribal union which was later ethnically and linguistically assimilated by eastern South Slavic people and henceforth gave its name to this mixed population and the later state.

continuum must have been still sufficiently homogeneous and compact for innovations to spread across Slavic from East to West, including the strengthening of already developed patterns.

Now, if we want to explain the early stages in the rise of the Slavic perfective/imperfective opposition, we should take into account the following considerations: (i) In contrast to many other IE languages, Slavic has partly preserved stem extensional patterns (suffixing strategies, though less concatenative), (ii) frequent patterns of preverbatation (prefixation) in later IE languages in Europe outside Slavic did not further participate in the formation of viewpoint aspect despite some incipient developments, and (iii) the predominant suffixing strategies of non-IE languages with which speakers of prehistoric and later Slavic must have come into considerable contact, in particular since the Great Migrations. Considering all these pieces of a puzzle, one is tempted to formulate the following hypothesis:

- (13) While, during the first millenium AD, prefixation of verb stems was shared with other IE language groups as a new development in Europe, suffixation patterns were sustained by similar patterns in Finno-Ugric and Turkic speaking populations.

In some sense, Common Slavic came to be sandwiched between an area with predominant preverbalizing strategies in the IE speaking West and an area with a clear preference for suffixing strategies in the East where speakers of Finno-Ugric and Turkic dominated. The morphological prerequisites for a system of viewpoint aspect based on the combination of prefixes and suffixes in verbal stem derivation had developed by Common Slavic times, but *only* in Slavic *both* suffixes and prefixes eventually turned out as being capable of marking aspectual distinctions without voice or valency-related changes. Support for this assumption comes from the observation that secondary suffixation has been much more productive in the eastern half of Slavic than in the western one (see §3.2.3).

This hypothesis and the issues related to it wait for an investigation, if one wishes to complement an internal reconstruction with contact-induced considerations.

Acknowledgments

First and foremost, we are obliged to Bridget Drinka, who not only helped smooth the style of the exposition, but contributed a lot of valuable remarks concerning Indo-European and other issues. We also owe special gratitude to Peter

Arkadiev and Christian Lehmann, whose comments on an earlier version of this article made us aware not only of some unfortunate formulations but, first of all, of pitfalls and fallacies which we had overlooked. Furthermore, we have to thank (alphabetically) Henning Andersen, Walter Breu, Pino Marco Pizzo and Florian Sommer, who drew our attention to other possible pitfalls. Beyond them, we want to thank Silvia Luraghi and Chiara Zanchi for discussion of Ancient Greek (which remained in the background), Östen Dahl and Ljuba Veselinova for discussion of typological matters, Bohumil Vykypěl for some advice concerning sources of prehistoric Slavic morphology, Jadranka Gvozdanović and Ranko Matasović concerning Celtic and László Károly concerning Turkic. Needless to say, none of these colleagues should be made responsible for any possible drawbacks of this article, as the sole responsibility for any remaining misinterpretations or mistakes is ours.

Abbreviations

ACC	accusative	PFX	prefix
ACT	active	PL	plural
DAT	dative	PRS	present
F	feminine	PST	past
HAB	habitual	Q	question particle
IMPF	imperfect	REDUPL	reduplication
INDEF	indefinite	RFL	reflexive
INF	infinitive	SFX	suffix
INTR	intransitive	SG	singular
N	neuter	THV	thematic vowel
NEG	negation	UNBOUND.PST	marked unbounded past
NOM	nominative	VIR	virile
NPRS	non-present stem	VOC	vocative

References

- Allen, Andrew A. 1995. Regrammaticalization and degrammaticalization of the inchoative suffix. In Henning Andersen (ed.), *Historical linguistics 1993 (Selected papers from the 11th International Conference on Historical Linguistics, Los Angeles, 16–20 August 1993)*, 1–8. Amsterdam, Philadelphia: Benjamins.
- Ambrazas, Vytautas. 2006. *Lietuvių kalbos istorinė sintaksė*. Vilnius: Lietuvių kalbos institutas.

- Andersen, Henning. 1985. Protoslavlic and Common Slavic – questions of periodization and terminology. *International Journal of Slavic Linguistics and Poetics* 31–32. 67–82.
- Andersen, Henning. 2003. Slavic and the Indo-European migrations. In Henning Andersen (ed.), *Language contacts in prehistory: Studies in stratigraphy*, 45–76. Amsterdam, Philadelphia: Benjamins.
- Andersen, Henning. 2009. On the origin of the Slavic aspects: Questions of chronology. In Vit Bubenik, John Hewson & Sarah Rose (eds.), *Grammatical change in Indo-European languages (Papers presented at the workshop on Indo-European linguistics at the XVIIIth International Conference on Historical Linguistics, Montreal, 2007)*, 123–140. Amsterdam: Benjamins.
- Andersen, Henning. 2013. On the origin of the Slavic aspects: Aorist and imperfect. *Special issue of Journal of Slavic Linguistics* 21(1). 17–44.
- Arkadiev [Arkad'ev], Petr M. 2015. *Areal'naja tipologija prefiksals'nogo perfekтива (na materiale jazykov Evropy i Kavkaza)*. Moskva: Jazyki slavjanskoj kul'tury.
- Arkadiev, Peter. Forthcoming. Borrowed preverbs and the limits of contact-induced change in aspectual systems. In Rosanna Benacchio, Alessio Muro & Svetlana Slavkova (eds.), *Grammatikalizacija i leksikalizacija: Rol' prefiksov v aspektual'nyx processax*. Firenze: Firenze University Press.
- Arkadiev, Peter. 2014. Towards an areal typology of prefixal perfectivization. *Scando-Slavica* 60(2). 384–405.
- Arkadiev, Petr M. & Andrej B. Shluinsky. 2015. Slovklassificirujuščie aspektual'nye sistemy: Opyt tipologii. *Vestnik SPbGU* 2015(3). 4–24.
- Arumaa, Peeter. 1985. *Urslavische Grammatik: Einführung in das vergleichende Studium der slavischen Sprachen. Band 3: Formenlehre*. Heidelberg: Winter.
- Bech, Gunnar. 1971. *Beiträge zur genetischen idg. Verbmorphologie*. Vol. 44 (Historisk-filosofiske meddelelser 5). København: Munksgaard.
- Beekes, Robert Stephen Paul. 1969. *The development of Proto-Indo-European laryngeals in Greek*. The Hague: Mouton.
- Beekes, Robert Stephen Paul. 1995. *Comparative Indo-European linguistics*. Amsterdam, Philadelphia: Benjamins.
- Bermel, Neil. 1997. *Context and the lexicon in the development of Russian aspect*. Berkeley: University of California Press.
- Birnbaum, Henrik. 1979. *Common Slavic: Progress and problems in its reconstruction*. Columbus: Slavica.
- Blažek, Václav. 2015. The eastern border of Celtic settlement: A toponymic perspective. In Dafydd Johnston, Elena Parina & Maxim Fomin (eds.), *'yn llawen iauwn, yn llawn iaith': Proceedings of the 6th international colloquium of societas*

8 *Diachrony and typology of Slavic aspect: What does morphology tell us?*

- Celto-Slavica*, 23–29. Aberystwyth: University of Wales Centre for Advanced Welsh & Celtic Studies.
- Bohnemeyer, Jürgen & Mary Swift. 2004. Event realization and default aspect. *Linguistics and Philosophy* 27(3). 263–296.
- Boley, Jacqueline. 2004. *Tmesis and Proto-Indo-European syntax*. Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft.
- Borodič, Vera V. 1953. K voprosu o formirovanii soveršenogo i nesoveršenogo vida v slavjanskix jazykax. *Voprosy jazykoznanija* 1953(2). 68–86.
- Boye, Kasper & Peter Harder. 2012. A usage-based theory of grammatical status and grammaticalization. *Language* 88. 1–44.
- Braune, Wilhelm & Ernst A. Ebbinghaus. 1961. *Gotische Grammatik (mit Lese-stücken und Wörterverzeichnis)*. 16. Auflage neu bearbeitet von Ernst A. Ebbinghaus. Tübingen: Niemeyer.
- Breu, Walter. 2000a. Zur Position des Slavischen in einer Typologie des Verbalaspekts (Form, Funktion, Ebenenhierarchie und lexikalische Interaktion). In Walter Breu (ed.), *Probleme der Interaktion von Lexik und Aspekt (ILA)*, 21–54. Tübingen: Niemeyer.
- Breu, Walter. 2000b. Der Verbalaspekt in der obersorbischen Umgangssprache im Rahmen des ILA-Modells. In Walter Breu (ed.), *Slavistische Linguistik 1999*, 37–76. München: Sagner.
- Breu, Walter. 1980. *Semantische Untersuchungen zum Verbalaspekt im Russischen*. München: Sagner.
- Breu, Walter. 1992. Zur Rolle der Präfigierung bei der Entstehung von Aspektsystemen. In Marguerite Guiraud-Weber & Charles Zaremba (eds.), *Linguistique et slavistique: Melanges offerts à Paul Garde*, 119–135. Aix-en-Provence: Université de Provence / Paris: Institut d'études slaves.
- Breu, Walter. 1994. Interactions between lexical, temporal and aspectual meanings. *Studies in Language* 18. 23–44.
- Breu, Walter. 2005. Verbalaspekt und Sprachkontakt: Ein Vergleich der Systeme zweier slavischer Minderheitensprachen (SWR/MSL). In Sebastian Kempgen (ed.), *Slavistische Linguistik 2003*, 37–95. München: Sagner.
- Breu, Walter. 2006. Flektivnyj i derivacionnyj glagol'nyj vid v molizsko-slavjanskom jazyke. *Voprosy jazykoznanija* 2006(3). 70–87.
- Brugmann, Karl. 1895. Die mit dem Suffix *-to-* gebildeten Partizipia im Verbalsystem des Lateinischen und des Umbrisch-Oskischen: Eine syntaktische Untersuchung. *Indogermanische Forschungen* 5. 89–152.
- Chantraine, Pierre. 1953. *Grammaire homérique: II. Syntaxe*. Paris: Klincksieck.

- Clauson, Gerard. 1962. *Studies in Turkic and Mongolic linguistics*. London, New York: Routledge.
- Cuzzolin, Pierluigi, Ignazio Putzu & Paolo Ramat. 2006. The Indo-European adverb in diachronic and typological perspective. *Indogermanische Forschungen* 111. 1–38.
- Dahl, Östen. 1981. On the definition of the telic-atelic (bounded-unbounded) distinction. In Philip J. Tedeschi & Annie Zaenen (eds.), *Syntax and semantics, vol. 14: Tense and aspect*, 79–90. New York: Academic Press.
- Dahl, Östen & Viveka Velupillai. 2013. Perfective/imperfective aspect. In Matthew S. Dryer & Martin Haspelmath (eds.), *The world atlas of language structures online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. <http://wals.info/chapter/65>.
- DeLazero, Octav Eugen. 2012. *Aspect in syntax*. Cornell University dissertation.
- Dickey, Stephen M. 2000. *Parameters of Slavic aspect: A cognitive approach*. Stanford: CSLI Publications.
- Dickey, Stephen M. 2011. The varying role of *po-* in the grammaticalization of Slavic aspectual systems: Sequences of events, delimitatives, and German language contact. *Journal of Slavic Linguistics* 19(2). 175–230.
- Dowty, D. R. 1991. Thematic Proto-Roles and argument selection. *Language* 67. 547–619.
- Dufresne, Monique, Fernande Dupuis & Mireille Tremblay. 2003. Preverbs and particles in Old French. In Geert Booij & Jaap van Marle (eds.), *Yearbook of morphology 2003*, 33–60. Dordrecht: Kluwer.
- Eckhoff, Hanne & Dag Haug. 2015. Aspect and prefixation in Old Church Slavonic. *Diachronica* 32(2). 186–230.
- Erdal, Marcel. 2004. *A grammar of Old Turkic*. Leiden, Boston: Brill.
- Forsyth, James. 1972. The nature and development of the aspectual opposition in the Russian verb. *The Slavonic and East European Review* 50(121). 493–506.
- Gagarina, Natalia. 2004. Does the acquisition of aspect have anything to do with aspectual pairs? *ZAS Papers in Linguistics* 33. 39–61.
- Greenberg, Joseph H. 1991. The last stages of grammatical elements: Contractive and expansive desemanticization. In Elizabeth C. Traugott & Bernd Heine (eds.), *Approaches to grammaticalization, vol. 1: Focus on theoretical and methodological issues*, 301–314. Amsterdam, Philadelphia: Benjamins.
- Guxman, M. M. 1998. *Gotskij jazyk*. Moskva: Izd-vo MGU.
- Gvozdanović, Jadranka. 2009. *Celtic and Slavic and the Great Migrations: Reconstructing linguistic prehistory*. Heidelberg: Winter.

- Gvozdanović, Jadranka. 2015. Evaluating prehistoric and early historic linguistic contact. In Dag T. T. Haug (ed.), *Historical linguistics 2013 (Selected papers from the 21st International Conference on Historical Linguistics, Oslo, 5–9 August 2013)*, 89–108. Amsterdam, Philadelphia: Benjamins.
- Haarmann, Harald. 2014. Finnougrisch-slavische Sprachkontakte. In Karl Gutschmidt, Sebastian Kempgen, Tilman Berger & Peter Kosta (eds.), *Die slavischen Sprachen: Ein internationales Handbuch zu ihrer Struktur, ihrer Geschichte und ihrer Erforschung*, vol. 2, 1181–1198. Berlin: De Gruyter Mouton.
- Haig, Geoffrey L. J. 2008. *Alignment change in Iranian languages: A construction grammar approach*. Berlin, New York: De Gruyter Mouton.
- Haspelmath, Martin & Andrea D. Sims. 2010. *Understanding morphology. 2nd edition*. London: Hodder Education.
- Hasselblatt, Cornelius. 1990. *Das estnische Partikelverb als Lehnübersetzung aus dem Deutschen*. Wiesbaden: Harrassowitz.
- Haverling, Gerd. 2003. On prefixes and actionality in Classical and Late Latin. *Acta Linguistica Hungarica* 50(1–2). 113–135.
- Havránek, Bohuslav. 1937. *Genera verbi v slovanských jazycích II*. Praha.
- Heine, Bernd & Tania Kuteva. 2002. *World lexicon of grammaticalization*. Cambridge: Cambridge University Press.
- Holvoet, Axel. 2001. *Studies in the Latvian verb*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.
- Holzer, Georg. 2014. Vorhistorische Periode. In Karl Gutschmidt, Sebastian Kempgen, Tilman Berger & Peter Kosta (eds.), *Die slavischen Sprachen: Ein internationales Handbuch zu ihrer Struktur, ihrer Geschichte und ihrer Erforschung*, vol. 2, 1117–1131. Berlin: De Gruyter Mouton.
- Ivanov, Vjačeslav V. 1964. *Istoričeskaja grammatika russkogo jazyka*. Moskva: Prosveščenie.
- Janda, Laura, Anna Endresen, Julia Kuznetsova, Olga Lyashevskaya, Anastasia Makarova, Tore Nessel & Svetlana Sokolova. 2013. *Why Russian aspectual prefixes aren't empty: Prefixes as verb classifiers*. Bloomington: Slavica Publ.
- Janda, Laura & Olga Lyashevskaya. 2011. Grammatical profiles and the interaction of the lexicon with aspect, tense, and mood in Russian. *Cognitive Linguistics* 22(4). 719–763.
- Jasanoff, Jay H. 2003. *Hittite and the Indo-European verb*. Oxford: Oxford University Press.
- Johanson, Lars. 1998a. The structure of Turkic. In Lars Johanson & Éva Á. Csató (eds.), *The Turkic languages*, 30–66. London: Routledge.

- Johanson, Lars. 1998b. The history of Turkic. In Lars Johanson & Éva Á. Csató (eds.), *The Turkic languages*, 81–125. London: Routledge.
- Johanson, Lars. 2000. Viewpoint operators in European languages. In Östen Dahl (ed.), *Tense and aspect in the languages of Europe*, 27–187. Berlin: De Gruyter Mouton.
- Kiparsky, Valentin. 1967. *Russische historische Grammatik, Bd. II: Die Entwicklung des Formensystems*. Heidelberg: Winter.
- Kölligan, Daniel. 2004. Wenn zwei dasselbe tun: Iterativa und Kausativa. In Maria Kozińska, Rosemarie Lühr & Susanne Zeilfelder (eds.), *Indogermanistik – Germanistik – Linguistik: Akten der Arbeitstagung der Indogermanischen Gesellschaft, Jena 18.-20.09.2002*, 193–247. Hamburg: Kovač.
- Kölln, Hermann. 1957. Vidové problémy v staroslověnině. *Philologica* 3(1). 67–100.
- Kortlandt, Frederik H. H. 1986. The origin of the Slavic imperfect. In R. Olesch & H. Rothe (eds.), *Festschrift für Herbert Bräuer zum 65. Geburtstag*, 253–258. Köln/Wien: Böhlau.
- Kotin, Michael L. 2012. *Gotisch. Im (diachronen und typologischen) Vergleich*. Heidelberg: Winter.
- Kuryłowicz, Jerzy. 1937. La structure de l'imparfait slave. *Acta Jutlandica* 9(9(1)). 85–392.
- Kuryłowicz, Jerzy. 1960. *Esquisses linguistiques*. Wrocław-Kraków: Polska Akademia Nauk.
- Kuznecov, Petr S. 1953b. *Istoričeskaja grammatika russkogo jazyka*. Moskva: Nauka.
- Lambert, Pierre-Yves. 1995. Les préverbes perfectifs du vieil-irlandais. In André Rousseau (ed.), *Les préverbes dans les langues d'Europe: Introduction à l'étude de la préverbation*, 227–254. Villeneuve d'Ascq (Nord): Septentrion.
- Łaziński, Marek & Björn Wiemer. 1996. Terminatywność jako kategoria stopniowalna. *Prace Filologiczne* XL. 99–126.
- Lehmann, Christian. 2015. *Thoughts on grammaticalization*. 3rd edition (Classics in Linguistics 1). Berlin: Language Science Press. DOI:10.17169/langsci.b88.98
- Lehmann, Volkmar. 1990. Zur ontogenetischen und diachronen Entwicklung grammatischer Kategorien des Polnischen. In Walter Breu (ed.), *Slavistische Linguistik 1989*, 167–188. München: Sagner.
- Lehmann, Volkmar. 1992. Grammatische Zeitkonzepte und ihre Erklärung. *Kognitionswissenschaft* 2. 156–170.

- Lehmann, Volkmar. 1993. Die russischen Aspekte als gestufte Kategorien: Ein Beispiel für die Bedeutung der kognitiven Linguistik in der slavistischen Sprachwissenschaft. *Die Welt der Slaven* 38(2). 265–297.
- Lehmann, Volkmar. 1999. Sprachliche Entwicklung als Expansion und Reduktion. In Tanja Anstatt (ed.), *Entwicklungen in slavischen Sprachen*, 169–254. München: Sagner.
- Lehmann, Volkmar. 2004. Grammaticalization via extending derivation. In Walter Bisang, Nikolaus P. Himmelmann & Björn Wiemer (eds.), *What makes grammaticalization? A look from its fringes and its components*, 169–186. Berlin: De Gruyter Mouton.
- Lehmann, Volkmar. 2009. Aspekt und Tempus im Slavischen. In Sebastian Kempgen, Peter Kosta, Tilman Berger & Karl Gutschmidt (eds.), *Die slavischen Sprachen: Ein internationales Handbuch zu ihrer Struktur, ihrer Geschichte und ihrer Erforschung*, vol. 1, 526–556. Berlin: De Gruyter Mouton.
- Leskien, August. 1919. *Grammatik der albulgarischen (altkirchenslavischen) Sprache*. Heidelberg: Carl Winter.
- Leumann, Manu, Johann Baptist Hofmann & Anton Szantyr. 1977[1926⁵]. *Lateinische Grammatik: Lateinische Laut- und Formenlehre*. Vol. 1. München: C.H. Beck'sche Verlagsbuchhandlung.
- Lewis, Henry & Holger Pedersen. 1937. *A concise comparative Celtic grammar*. Göttingen: Vandenhoeck & Ruprecht.
- LIV². 2001. *Lexikon der Indogermanischen Verben. Die Wurzeln und ihre Primärstammbildungen*. Wiesbaden: Reichert Verlag. Unter Leitung von Rix, Helmut und der Mitarbeit vieler anderer bearb. von Kümmel, M. and Zehnder, Th. and Lipp, R. and Schirmer, B. Zweite, erweiterte und verbesserte Auflage, bearb. von Kümmel, Martin and Rix, Helmut.
- Lühr, Rosemarie. 1999. Das slavische Imperfekt. Chronologie einer Periphrase mit dem Instrumental. In Jürgen Habisreiter, Robert Plath & Sabine Ziegler (eds.), *Gering und doch von Herzen, 25 indogermanistische Beiträge: Bernhard Forssman zum 65. Geburtstag*, 167–182. Wiesbaden: Reichert.
- Luraghi, Silvia. 2003. *On the meaning of prepositions and cases: The expression of semantic roles in ancient Greek*. Amsterdam, Philadelphia: Benjamins.
- MacAulay, Donald. 1992. *The Celtic languages*. Cambridge: Cambridge University Press.
- Maslov, Jurij S. 1959a. Kategorija predel'nosti/nepredel'nosti glagol'nogo dejst'vija v gotskom jazyke. *Voprosy jazykoznanija* 1959(5). 69–80.
- Maslov, Jurij S. 2004[1954]. Perfektivnyj imperfekt v drevnerusskom literaturnom jazyke. In Aleksandr V. Bondarko, Timur A. Majsak & Vladimir A.

- Plungjan (eds.), *Ju. S. Maslov. Izbrannye trudy. Aspektologija i obščee jazykoznanie*, 141–175. Moskva: Jazyki slavjanskoj kul'tury. Reprint of Maslov, Jurij S. 1954. Imperfekt glagolov soveršennoogo vida v slavjanskix jazykax. *Voprosy slavjanskogo jazykoznanija* 1. 68–138.
- Maslov, Jurij S. 2004[1959]. Voznikovenie kategorii soveršennoogo/nesoveršennoogo vida. In Aleksandr V. Bondarko, Timur A. Majsak & Vladimir A. Plungjan (eds.), *Ju. S. Maslov. Izbrannye trudy. Aspektologija i obščee jazykoznanie*, 131–140. Moskva: Jazyki slavjanskoj kul'tury. Russian translation of the paper: Maslov, Jurij S. 1959. Zur Entstehungsgeschichte des slavischen Verbalaspektes. *Zeitschrift für Slawistik* 4. 560–568.
- Maslov, Jurij S. 1948. Vid i leksičeskoe značenie glagola v sovremennom ruskom literaturnom jazyke. *Izvestija AN SSSR, Otdelenie literatury i jazyka*, t. 7, vyp 4. 303–316.
- McCone, Kim. 1987. *The early Irish verb*. Maynooth: An Sagart.
- Meillet, Antoine. 1965. *Le slave commun*. 2. éd. rev. et augm. *Nouveau tirage avec le concours de A. Vaillant*. Paris: Champion.
- Meiser, Gerhard. 1993. Zur Funktion des Nasalpräsen im Urindogermanischen. In Gerhard Meiser (ed.), *Indogermanica et Italica, Festschrift für Helmut Rix zum 65. Geburtstag, unter Mitarbeit von Jadwiga Bendahman, Jón Axel Harðarson und Christiane Schaefer*, 280–330. Innsbruck: Institut für Sprachwissenschaft.
- Mende, Julia. 1999. Derivation und Reinterpretation: Die Grammatikalisierung des russischen Aspekts. In Tanja Anstatt (ed.), *Entwicklungen in slavischen Sprachen*, 285–325. München: Sagner.
- Menges, Karl H. 1968. *The Turkic languages and peoples: An introduction to Turkic studies*. Wiesbaden: Harrassowitz.
- Metslang, Helle. 2001. On the development of the Estonian aspect: The verbal particle *ära*. In Östen Dahl & Maria Koptjevskaja-Tamm (eds.), *Circum-Baltic languages, vol. 2: Grammar and typology*, 443–479. Amsterdam: Benjamins.
- Miklosich, Franz. 1926. *Vergleichende Grammatik der slavischen Sprachen, II. Bd.: Stammbildungslehre*. Heidelberg: Winter. Reprint of first edition 1875.
- Neset, Tore. 2013. The history of the Russian semelfactive: The development of a radial category. *Special issue of Journal of Slavic Linguistics* 21(1). 123–170.
- Ostrowski, Norbert. 2006. *Studia z historii czasownika litewskiego. Iteratiwa. Dnominatiwa*. Poznań: Wydawnictwo Naukowe UAM.
- Plungjan, Vladimir A. 2000. *Obščaja morfologija. Vvedenie v problematiku*. Moskva: URSS.
- Plungjan, Vladimir A. 2002. O specifikie vyraženiya imennyx prostranstvennyx charakteristik v glagole: Kategorija glagol'noj orientacii. In Vladimir A. Plung-

8 *Diachrony and typology of Slavic aspect: What does morphology tell us?*

- jan (ed.), *Issledovanija po teorii grammatiki, vyp. 2: Grammatikalizacija prostranstvennyx značenij*, 57–98. Moskva: Russkie slovari.
- Plungjan, Vladimir A. 2011. *Vvedenie v grammatičeskiju semantiku: Grammatičeskie značenija i grammatičeskie sistemy jazykov mira*. Moskva: RGGU.
- Pohl, Heinz Dieter. 1971. Das slavische Imperfekt auf -ěax- und -aax-. *Zeitschrift für slavische Philologie* 38(2). 349–360.
- Polomé, Edgar C. 1972. Germanic and the other Indo-European languages. In Frans van Coetsem & Herbert L. Kufner (eds.), *Toward a grammar of Proto-Germanic*, 43–69. Tübingen: Niemeyer.
- Rasmussen, Jens Elmegård. 1988. The IE background of the Slavic nasal-infix presents. *Arbejdsrapporter [af] Institut for Lingvistik Københavns Universitet* 7. 195–201.
- Rosinas, Albertas. 1995. *Baltų kalbų įvardžiai: Morfologijos raida*. Vilnius.
- Sasse, Hans-Jürgen. 2002. Recent activity in the theory of aspect: Accomplishments, achievements, or just non-progressive state? *Linguistic Typology* 6–2. 199–271.
- Schlyter, Suzanne. 1990. The acquisition of tense and aspect. In Jürgen M. Meisel (ed.), *Two first languages: Early grammatical development in bilingual children*, 87–121. Dordrecht: Foris.
- Schooneveld, Cornelis H. 1958. The so called ‘*préverbes vides*’ and neutralization. In *Dutch contributions to the Fourth International Congress of Slavists. Moscow, September 1958*, 159–161. The Hague: Mouton.
- Schumacher, Stefan. 2004. *Die keltischen Präverbien. Ein vergleichendes, etymologisches und morphologisches Lexikon* (Innsbrucker Beiträge zur Sprachwissenschaft). Innsbruck. Unter Mitarbeit von Britta Schulze-Thulin und Caroline aan de Wiel.
- Serebrennikov, Boris A. 1960. *Kategorii vremeni i vida v finno-ugorskix jazykax permskoj i volžskoj grupp*. Moskva: Izdatel'stvo AN SSSR.
- Seržant, Ilja A. 2008. Review: N. Ostrowski, Norbert Ostrowski. *Studia z historii czasownika litewskiego. Iteratiwa. Denominatiwa*. 2006. *Historische Sprachforschung* 121. 308–320.
- Seržant, Ilja A. 2009. Tempus und Aspekt im ältesten Russisch-Kirchenslavischen, untersucht an den Texten des Gottesdienstmenäums für Dezember. In Dagmar Christians, Dieter Stern & Vittorio S. Tomelleri (eds.), *Bibel, Liturgie und Frömmigkeit in der Slavia Byzantina: Festgabe für Hans Rothe zum 80. Geburtstag*, 309–328. München, Berlin: Sagner.
- Seržant, Ilja A. 2012. The so-called possessive perfect in North Russian and the Circum-Baltic area: A diachronic and areal approach. *Lingua* 122. 356–385.

- Seržant, Ilja A. 2014. *Das Kausativ im Tocharischen*. München: LINCOM.
- Ševeleva, Maria N. 2010. Vtoričnye imperfektivy s suffiksom -yva-/-iva- v letopisjax XII-XVI vv. *Russkij jazyk v naučnom osveščeenii* 20(2). 200–243.
- Silina, Vera B. 1982. Istorija kategorii glagol'nogo vida. In Ruben I. Avanesov & Vjačeslav V. Ivanov (eds.), *Istoričeskaja grammatika russkogo jazyka*, 158–279. Moskva: Nauka.
- Silina, Vera B. 1995. Glagol. In Vjačeslav V. Ivanov (ed.), *Drevnerusskaja grammatika XII-XIII vv*, 374–506. Moskva: Nauka.
- SłPrasłow, Franciszek. Sławski 1974. *Słownik prasłowiański, t. I: A–B*. Wrocław etc.: Ossolineum.
- Smith, Carlotta. 1991. *The parameter of aspect*. Dordrecht: Kluwer.
- Sreznevskij, Izmail Ivanovič. 1893–1912. *Materialy dlja slovarja drevne-russkago jazyka po pismennym pamjatnikam*. Sankt-Peterburg: Tipografija imperatorskoj akademii nauk.
- Stachowski, Stanisław. 2014. Türkischer Einfluß auf den slavischen Wortschatz. In Karl Gutschmidt, Sebastian Kempgen, Tilman Berger & Peter Kosta (eds.), *Die slavischen Sprachen: Ein internationales Handbuch zu ihrer Struktur, ihrer Geschichte und ihrer Erforschung*, vol. 2, 1198–1210. Berlin: De Gruyter Mouton.
- Stang, Christian S. 1942. *Das slavische und baltische Verbum*. Oslo: Universitetsforlaget.
- Stang, Christian S. 1966. *Vergleichende Grammatik der baltischen Sprachen*. Oslo, Bergen, Tromsø: Universitetsforlaget.
- Stieber, Zdzisław. 1989. *Zarys gramatyki porównawczej języków słowiańskich*. Warszawa: PWN.
- Stoll, Sabine. 1998. The role of aktionsart in the acquisition of Russian aspect. *First Language* 18. 351–377.
- Stoll, Sabine. 2005. Beginning and end in the acquisition of the perfective aspect in Russian. *Journal of Child Language* 32. 805–825.
- Streitberg, Wilhelm. 1891. Perfektive und imperfektive Aktionsart im Germanischen. Einleitung und I. Teil: Gotisch. *Beiträge zur Geschichte der deutschen Sprache und Literatur* 15. 70–177.
- Thurneysen, Rudolf. 1975[1946]. *A grammar of Old Irish*. Dublin: The Dublin Institute for Advanced Studies.
- Thurneysen, Rudolf. 1909. *Handbuch des Alt-Irischen: Grammatik, Texte und Wörterbuch, Bd. I: Grammatik*. Heidelberg: Winter.
- Tomelleri, Vittorio. 2009. The category of aspect in Georgian, Ossetic and Russian: Some areal and typological observations. *Faits des langues* 1. 245–272.

8 *Diachrony and typology of Slavic aspect: What does morphology tell us?*

- Tomelleri, Vittorio. 2010. Slavic-style aspect in the Caucasus. *Suvremena lingvistika* 69. 65–97.
- Vaillant, André. 1966. *Grammaire comparée des langues slaves: Le verbe*. Vol. III. Paris: Klincksieck.
- van Wijk, Nicolaas. 1929. Sur l'origine des aspects du verbe slave. *Revue des études slaves* 9(3–4). 237–252.
- Veenker, Wolfgang. 1967. *Die Frage des finnougriſchen Substrats in der russischen Sprache*. Indiana: Bloomington.
- Vendler, Zenon. 1957. Verbs and times. *Philosophical Review* 46. 143–160.
- Vey, Marc. 1952. Les préverbes “vides” en tchèque moderne. *Revue des études slaves* 29(1–4). 82–107.
- Vincent, Nigel. 1999. The evolution of c-structure: Prepositions and PPs from Indo-European to Romance. *Linguistics* 37. 1111–1154.
- Viti, Carlotta. 2008. Coding spatial relations in Homeric Greek: Preverbs vs. Prepositions. *Historische Sprachforschung* 121. 114–161.
- Vondrák, Wenzel. 1924. *Vergleichende Slavische Grammatik, I. Bd.: Lautlehre und Stammbildungslehre*. Göttingen: Vandenhoeck & Ruprecht. (2., stark vermehrte und verbesserte Auflage).
- Wälchli, Bernhard. 2001. Lexical evidence for the parallel development of the Latvian and Livonian verb particles. In Östen Dahl & Maria Koptjevskaja-Tamm (eds.), *Circum-Baltic languages, vol. 2: Grammar and typology*, 413–441. Amsterdam: Benjamins.
- West, Jonathan. 1981/1982. Preverbs in Gothic and Old Irish: A typological parallel. *Studia Celtica* XVI/XVII. 248–258.
- Wiemer, Björn. 2008. Zur innerslavischen Variation bei der Aspektwahl und der Gewichtung ihrer Faktoren. In Karl Gutschmidt, Ulrike Jekutsch, Sebastian Kempgen & Ludger Udolph (eds.), *Deutsche Beiträge zum 14. Internationalen Slavistenkongreß, Ohrid 2008*, 383–409. München: Sagner.
- Wiemer, Björn. 2009. Zu entlehnten Präfixen und anderen morphosyntaktischen Slavismen in litauischen Insel- und Grenzmundarten. In Lenka Scholze & Björn Wiemer (eds.), *Von Zuständen, Dynamik und Veränderung bei Pygmäen und Giganten (Festschrift für Walter Breu zu seinem 60. Geburtstag)*, 347–390. Bochum: Brockmeyer.
- Wiemer, Björn. 2015. O roli vida v oblasti kratnosti i pragmatičeskix funkcij (èskiz s točki zrenija xronotopii). In Rosanna Benacchio (ed.), *Glagol'nyj vid: Grammatičeskoe značenie i kontekst / verbal aspect: Grammatical meaning and context*, 585–609. München: Sagner.

