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Orphan prefixes and the grammaticalization of aspect in South Slavic[1]

This paper establishes the term ORPHAN PREFIX for a Slavic prefix that no longer shares a dominant spatial meaning with its cognate preposition. Most Slavic prefixes do share such a dominant spatial meaning with their cognate prepositions, cf., e.g., the Russian prefix *v-* and preposition *v*, both meaning 'into.' Orphan prefixes appear to be an important component of many Slavic aspectual systems. However, in most Slavic languages there is at most one prefix that has lost the semantic connection to its cognate preposition and come to function primarily as a grammatical marker of perfectivity. Only three Slavic prefixes are in fact to be considered orphan prefixes, and each only in some Slavic languages. A first case is Bulgarian *iz-* 'out,' as its cognate preposition *iz* is no longer used in the spatial meaning 'out of.' The most extreme case is Bulgarian *po-,* which no longer shares the spatial meaning of SURFACE CONTACT with the preposition *po* to any significant degree. Another important case is the hybrid prefix *s-/z-* in Slovene, which arose due to the phonetic coalescence of *sъ-* 'together, down from' and *jьz-* 'out' after the fall of the jers and which as a perfectivizing prefix has lost its semantic connection to *s* 'with, down from' and *iz* 'out of' to varying degrees in Slovene.

This paper presents an overview of perfectivizing prefixation in three South Slavic languages, Bulgarian, Croatian and Slovene. It is argued that though the loss of a dominant spatial meaning is necessary for a given prefix to be grammaticalized as a purely perfectivizing prefix in an individual Slavic language, this process is neither predictable nor necessary for the maintenance of a Slavic-style aspect system (cf. standard Croatian, where no orphan prefix exists and no such grammaticalization has taken place). Building on this line of thinking, the paper argues that the facts from South Slavic support recent views on grammaticalization, that there is no "grammaticalization" process *per se*, only semantic changes that lead to grammaticalization as an epiphenomenal result.

1. Introduction and preliminaries

This paper attempts to contribute to our understanding of the grammatical nature of Slavic aspectual systems by examining aspectual prefixation in Bulgarian, Croatian and Slovene.[2] It considers ways in which perfectivizing prefixes become grammatical markers of perfectivity, which has been thought to be part and parcel of the process of grammaticalization of the aspect category in Slavic.[3] Ultimately, what is at issue is how prefixes develop abstract, aspectual meanings in addition to their original spatial meanings, and the degree to which they must lose these spatial meanings to be considered grammaticalized as aspectual markers. These issues are complex, to say the least, and the issue of whether a prefix has become empty and especially the issue concerning the degree of emptiness of a prefix cannot be definitively solved without recourse to psycholinguistic experiments, though informants' reflections are helpful to an extent.

1.1. *Slavic prefixes and perfectivization*

This analysis follows Shull's (2003) general approach to the relationship between the spatial meaning(s) of a prefix and its telic and perfectivizing functions. Shull draws a clear distinction between the spatial and abstract uses of prefixes, and argues against the view that abstract prefixation is necessarily the result of direct metaphorical mappings of the spatial profiles of prefixes to abstract domains. Shull (2003: 184–185) also suggests that all prefixes with spatial meanings, regardless of whether the relevant landmark is a SOURCE, a PATH or a GOAL, and regardless of their particular trajector and landmark configurations,

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[2] Croatian is taken to be representative of the western South Slavic diasystem including Croatian, Serbian and Bosnian. Macedonian is not examined separately here; my prior research (Dickey 2005) has shown that in the relevant respects Macedonian patterns fairly closely to Bulgarian.

[3] Of course, the crucial step in the basic grammaticalization of Slavic aspectual systems is considered to be the derivation of imperfective verbs, e.g., Croatian *prepisati*[p] > *prepisivati*[i] 'copy out'. While it is clear that imperfectivizing suffixation was crucial in the establishment of aspectual pairs, I nevertheless think that prefixes have continued to play important roles in these systems, determining in large part the differences between the aspectual systems of the individual Slavic languages. Hence my interest in prefixation in my publications since 2000, including this article.

share an abstract profile of two states s^1 and s^2 (i.e., the initial state and the resultant state respectively), and that all prefixes tend to become GOAL prefixes profiling the attainment of s^2 due to the "goal orientation of language," which "effectively neutralizes the distinction between Source, Path and Goal prefixes when they are used abstractly" (185). Thus, most prefixes share an abstract schema, the TRANSITION FROM s^1 TO s^2, i.e., the transition from an initial state to some different, resulting state. Shull (2003: 225) suggests that the spatial prototypes of prefixes are in fact subcases of the abstract SOURCE/PATH/GOAL schema and that the former "possess a richer structure and thus occupy a privileged position in the semantic network of individual prefixes."[4] That is to say, the spatial profile of a prefix is a prototype node that instantiates a more abstract schema of the TRANSITION FROM s^1 TO s^2 in the semantic network of most prefixes.

As regards the degree to which a prefix has lost its etymological spatial meaning, we can speak on the one hand of ordinary LEXICAL prefixes, which retain their original spatial meanings, although a semantic overlap between the meaning of a prefix and the situation profiled by the base verb may create the impression that the prefix is semantically empty apart from its perfectivizing effect. An example is Croatian *na-pisati*[p], lit. 'on-write'; here the meaning of the prefix *na-* 'on/onto a surface' overlaps tidily with the situation profiled by the verb *pisati*[i] 'write', i.e., the marking of text onto some surface. It is for this reason that *na-* in *napisati*[p] is simply felt to contribute the meaning of the perfectivity to the verb. The notion that the lexical content of a prefix overlaps with the base meaning of a source verb to the point where the prefix appears to be semantically empty, creating a lexically identical perfective (pf) verb, is known as SUBSUMPTION in Czech linguistics, (cf. Poldauf 1954) and is thus labeled in this study.[5] Note that from a synchronic perspective the effect of subsumption is the existence of an apparently empty perfectivizing prefix (as in Croatian *napisati*[p] 'write' above). The idea of subsumption probably has more application in a diachronic approach (as Nübler 1990 concludes), and it is understood here basically as a diachronic concept relevant for issues of grammaticalization.

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[4] Shull's analysis of Slavic prefixation is very much in the spirit of Langacker (1988), who argues that speakers derive abstract schemas from lower-level, more highly specified meanings (one of which may be a prototype), so that in addition to a prototype, speakers may also access a highly abstract schema from all nodes of the semantic network of a linguistic unit.

[5] Nübler (1990) examines the evolution of the idea of subsumption in Czech linguistics. He notes that the term has also been applied to related *Aktionsart* phenomena that do not fit the characterization given above and criticizes the application of the term in this manner as a confusion of lexical and grammatical meanings of prefixes. I employ this term solely in the sense given above.

It is important to point out that a subsumption account of the apparent emptiness of perfectivizing prefixes assumes that there are few, if any truly empty prefixes, or *préverbes vides*, as they have been traditionally labeled. In other words, most prefixes that function as *préverbes vides* retain their spatial meaning even though they appear to have simply a perfectivizing function with certain verbs. An interesting (if somewhat uneven) example of how such an account can organize our knowledge of the perfectivizing effect of prefixes is Vey (1952). Though he does not use the term "subsumption," he lists out the *préverbes vides* of Czech, showing in each case that the meaning of the prefix overlaps with groups of verbs that involve that same element of meaning, whereby the effect of the "emptiness" of the prefix arises. For example, Vey (1952: 91) points out that Czech *na-* has as its main meaning 'on(to), on(to) the surface of' so that it naturally functions as a perfectivizer of verbs of covering a surface and affecting something on its surface, e.g., *mazat^i—namazat^p* 'oil, lubricate', *brousit^i—nabrousit^p* 'whet, grind'. It is a matter of debate whether the abstract meanings of prefixes, such as the meaning of quantity/abundance/satiety of Czech *na-* (Vey 1952: 91; cf., e.g., *naplnit^p* 'fill', *nasnídat^p se* 'eat breakfast to satiety') are direct metaphorical extensions of their spatial meanings, or whether they have an independent status. Again, following Shull (2003) I assume that such abstract meanings of prefixes can be independent meanings.[6]

In addition to lexical prefixes functioning as *préverbes vides* with individual (classes of) verbs to varying degrees, there have been cases in Slavic languages where a prefix has lost its spatial profile as a productive meaning, i.e., it functions largely or solely as an abstract prefix. A striking case is that of Russian *po-*, which is worth discussing in some detail, as it provides essential background for the discussion of *po-* in South Slavic languages presented in sections 2 and 3. Russian *po-* has lost its original spatial meanings of SURFACE CONTACT (cf. Voloxina and Popova 1997: 37–39, Camus 1998: 101 and Tixonov 1998: 36), and ABLATIVITY (cf. Dickey 2011: 196–197). Note also that Shull (2003), on the basis of her video experiments, concludes that Russian *po-* is not a spatial prefix; contrary to first appearances, it is not a PATH prefix but has an abstract meaning for which the profile base is NOT physical space but the abstract trajectory of the verbal action itself (for details, see Shull 2003: 147–172). Nevertheless, it is the most widespread perfectivizing prefix in Russian (cf., e.g., Čertkova 1996: 123–124). It should be pointed out here that Russian attests many verbs and aspect pairs in *po-* that are relics of its SURFACE-CONTACT meaning, e.g., *pokryvat^{,i}—pokryt^{,p}* 'cover', or *posejat^{,p}* 'sow'. The only remnant of

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[6] Note again that according to the usage-based approach to network structure of Langacker's Cognitive Grammar, it is possible for a metaphorical extension to exist alongside its source meaning as an independent meaning of a linguistic unit.

its productivity as a SURFACE-CONTACT prefix is a very limited ability to form verbs profiling the covering of some surface with a layer of something, e.g., *poxromirovat'^{p}* 'chrome', *ponikelirovat'^{p}* 'nickel.'[7] However, even for this limited meaning, its productivity is uneven, which is indicated by the fact that many verbs of covering a surface do not take *po-* to form a pf, e.g., *emalirovat'$^{i/p}$* 'enamel,' *kobal'tit'^{i}* 'cover with cobalt.' Regarding the putative SURFACE-CONTACT meaning of Russian *po-*, Shull (2003: 160) observes that "even when verbs denoting actions that affect surfaces are involved, *po-* prefixed forms suggest a completion of the action itself, not the complete covering of a surface (cf. *po-krasit'^{p}* 'paint')."[8]

However, as Russian *po-* has lost its spatial and telic meanings, it has become extremely productive as a delimitative prefix (cf., e.g., *popisat'^{p}* 'write for a while') and also as a perfectivizer of atelic verbs in general (cf., e.g., degree-achievements such as *poxudet'^{p}* 'lose weight'). There is no contradiction in the loss of SURFACE CONTACT as a productive meaning of Russian *po-* and the simultaneous rise of productive delimitative *po-*. On the contrary, I have argued (Dickey 2007) that the origin of Russian delimitative *po-* lies in the pairing of atelic prefixed pf *poiti* 'PO-go' with imperfective (impf) *iti* 'go' as an aspectual pair, which occurred in the sixteenth century, and not in a metaphorical extension of SURFACE-CONTACT *po-*.[9] In particular, when Old Russian *poiti^p* 'PO-go' ended up being paired with *iti^i* 'go', a bleaching based on subsumption did occur, as *go* is a predicate that is inherently source-oriented and always involves a

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[7] A good comparison for Russian in this regard is Croatian, in which SURFACE CONTACT remains an important meaning of *po-*. For example, Lazić (1976: 53) lists "action along or on [a] surface" as the second most important meaning of Croatian and Serbian *po-* and points out that is productive with loan verbs (e.g., *pocinčati^p* 'galvanize', *pocakliti^p* 'enamel'); cf. also Anić (2000), according to whom one of the chief meanings of Croatian *po-* is "an action performed on some surface."

[8] The only treatment of Russian *po-* that treats it as a spatial PATH prefix is Nesset (2010: 680–681). In my view, there are considerable problems with such an approach, which I cannot detail here. Suffice it to say that among other things changes in the use of Russian *po-* delimitatives since the fifteenth century present a number of complications for the view that modern Russian delimitative *po-* is a metaphorical extension of a spatial PATH meaning (cf. the data presented in Dickey 2007). Therefore, I prefer to follow the view of Tixonov, Shull, and others presented above that modern Russian *po-* has no productive spatial meaning.

[9] This hypothesis may seem counterintuitive, but it is supported by an important piece of circumstantial evidence: all the Slavic languages that have developed productive delimitatives in *po-* (Russian, Belarusian, Ukrainian, Polish, Bulgarian and Macedonian) also have (ingressive) pf determinate motion verbs prefixed in *po-* or had them in the sixteenth/seventeenth century. Bulgarian has lost *poiti^p* 'go', but Middle Bulgarian did have it (cf. Lilov 1964: 110–111; note that Bulgarian still has other ingressive motion verbs in *po-*, e.g., *ponesja^p* 'carry', *pobjagna^p* 'run').

path, which left *po-* with an oddly atelic perfectivizing effect in this pair. The salient status of *iti*[i]—*poiti*[p] 'go' as the primary motion verb was in large part responsible for this development and the subsequent abstract nature of Russian *po-*. Thus, while Russian *po-* has almost exclusively abstract meanings (its perfectivizing meaning, and procedural meanings such as delimitativity in time), the Russian preposition *po* continues to express the spatial meanings of 'on, over, along'. I term such semantically exceptional prefixes ORPHAN PREFIXES, as unlike lexical prefixes they appear to have lost the original spatial meaning shared with their cognate prepositions.

Sections 2 and 3 describe the details of South Slavic perfectivizing prefixation with respect to lexical prefixes and orphan prefixes and consider the implications for a theory of the grammaticalization of Slavic aspect. However, before moving on to the discussion, the approach to grammaticalization taken here is sketched out in 1.2, with reference to Russian aspect, which provides important background for the description and analysis of South Slavic languages.

1.2. *Grammaticalization and Slavic aspect*

Verbal aspect has clearly become a grammatical category (i.e., it has been grammaticalized) in the Slavic languages. Prefixes have become grammatical markers of the pf aspect, to varying degrees in the individual languages. This study is concerned with the application of grammaticalization theory to Slavic prefixation. Thus, what is of interest here is the status of individual prefixes as markers of the pf aspect in the languages under consideration, and how the differing grammatical status of different prefixes has contributed to the differing aspectual systems in South Slavic. What follows is an outline of an approach to grammaticalization with regard to the details and peculiarities of Slavic aspectual systems, with Russian taken as an example.

The approach taken here adopts the basic definition of grammaticalization given by Kuryłowicz (1965/1975: 52, cited in Campbell and Janda 2001: 97), according to which grammaticalization is a process whereby lexical morphemes "increase their range" (i.e., their distribution becomes wider, cf. Lehmann 2002: 6) and acquire grammatical status, or an already grammatical morpheme undergoes an increase in its grammatical status. Lehmann (2002: 8) emphasizes that such grammaticalization is a matter of degree. Most treatments of grammaticalization basically work with this or a similar characterization, but differ in many important details. In this regard it is worth pointing out that Lehmann (2002: 124–127) prefers a feature of OBLIGATORINESS to increased distribution, because increases in distribution of a morpheme may occur in

processes other than grammaticalization, such as analogy. Heine and Kuteva (2007: 33–44) in turn reject obligatoriness as a clear criterion for grammaticalization, arguing that it is a by-product of DECATEGORIALIZATION, i.e., the loss of morphosyntactic properties characteristic of lexical/less grammatical forms.

An evaluation of these competing analyses lies beyond the scope of this paper, not in the least because the example cases of grammaticalization adduced in them bear little resemblance to the grammaticalization of Slavic aspectual systems. In one of the few discussions to date of the development of Slavic aspectual systems with regard to grammaticalization theory, Lehmann (2004) argues that MAXIMAL DISTRIBUTION RELATIVE TO THE PART OF SPEECH is an essential criterion for the grammaticality of a lexico-grammatical category such as Slavic aspect. In particular, Lehmann (2004: 174) suggests that the grammaticality of Slavic aspect "is based on the maximum distributional extension of affixes with aspectual functions, that is, the acquisition by 'all' verbs of an opposing verbal partner" (cf. Lehmann 2004 for justification and discussion of this view).

As regards the affixes that produce the maximal distribution of aspectual pairs, we may immediately cite imperfectivizing suffixation as crucial in creating impf verbs (cf. footnote 3). The case of prefixation as a grammatical marker of perfectivity is much more complex, as there is no single prefix that has become the sole marker of perfectivity in any Slavic language. Rather, in any given Slavic language there is a whole array of prefixes that serve as *préverbes vides*; cf. Vey (1952) for Czech, and Tixonov (1964) puts the number of *préverbes vides* in Russian at 17. The fact that numerous *préverbes vides* function more or less equally as grammatical markers of perfectivity makes sense if we recall Shull's (2003) view that SOURCE, GOAL and PATH prefixes all typically share an abstract schema of the TRANSITION FROM s^1 TO s^2, and that it is this abstract meaning which provides the lexical telicity needed for a verb to be classified as pf in opposition to a simple source verb. In this way, the distribution of the aspect opposition across Vendler's (1957) telic classes of achievements and accomplishments is straightforwardly explained.

But if the aspect opposition encompasses only two of Vendler's four verb classes, can we say that it has reached maximal distribution? This question is rarely raised, but an adequate theory of the grammaticalization of Slavic aspect must address it in a principled manner. Traditional approaches assume explicitly or implicitly that the aspect opposition is only possible for telic predicates; for a relatively recent claim to this effect, cf. Timberlake (1985: 55), who claims that "only accomplishments and achievements are terminal and only they can be perfective." However, such reasoning is in fact arbitrary, and, as Holden (1990:

134) points out, such definitions of the pf based solely on telicity (and derivative notions such as completion and terminativity) are "used to exclude *a priori* other aspectualities from the general binary oppositional system (such as delimitatives prefixed in *po-*)" (original emphasis). That is to say, it is arbitrary to exclude activity predicates from the aspect opposition, inasmuch as activities are expressed by means of pf verbs to varying degrees in all Slavic languages. Of Vendler's four verb classes, only states tend to resist inclusion into the aspect opposition in all Slavic languages; for example, there are no pf partners of Russian *znat'^{i}* 'know' and *značit'^{i}* 'mean'. Thus, the maximum possible distribution of the aspect category in a Slavic language includes achievement, accomplishment and activity predicates.

If, as suggested above, Russian telic verbs are typically perfectivized by spatial prefixes that also signal the abstract meaning of the TRANSITION FROM S^1 TO S^2, how is the aspect opposition extended to atelic activity predicates to attain the highest level of grammaticalization? Activity predicates in Russian are perfectivized by various procedural prefixes, e.g., ingressive *za-* (*zapet'^{p}* 'start singing'), delimitative *po-* (*popet'^{p}* 'sing a while'), finitive *ot-* (*otpet'^{p}* 'finish singing'), to name just three. Such *Aktionsart* verbs are the "aspectualities" mentioned by Holden in the quotation above, and in my view Holden is entirely correct in his criticism of approaches that arbitrarily exclude whole classes of pf verbs from performing a real role in the binary system of Russian aspect. In contrast to traditional approaches, according to which only telic predicates are represented by aspectual pairs of verbs (e.g., Bondarko 1971), recent work has taken different approaches to this issue, either taking a more flexible approach to aspectual pairs (Lehmann 1988) or abandoning the idea of pairs in favor of clusters of verbs (Janda 2007).

Though in Russian various procedural prefixes perfectivize impf activity verbs, thereby adding various semantic nuances, delimitative *po-* stands out as a particularly important prefix, as it arguably adds the least amount of additional semantic content to the lexical meaning of the verb (for a detailed discussion, see Dickey 2006). This is the reason for Avilova's (1976: 204–206) observation that the purely perfectivizing function of *po-* is often difficult to distinguish from its procedural meanings (delimitative, attenuative, etc.). In fact, some recent studies recognize that Russian *po-* delimitatives can enter into pair relationships with impf activity verbs, cf. Petruxina (2000) and Zaliznjak, Mikaèljan and Šmelev (2010). Note that Russian *po-* forms delimitatives from impf atelic activity verbs (e.g., *sidet'^{i}* 'sit') or telic verbs that have an alternate atelic activity sense (e.g., *čitat'^{i}* 'be reading through something [telic]' or 'be reading [atelic]') almost without exception. Moreover, Russian delimitative *po-* is so productive that it even forms delimitatives from some states, such as *posuščestvovat'^{p}* 'exist

for a while', *poljubit*ᵖ 'love for a while',[10] *poxotet'*ᵖ 'want for a while', which are attested on the Internet (cf. Christensen 2011). Due to these properties and its high productivity, I have argued that Russian *po-* has played a crucial role in the grammaticalization of the Russian aspectual system by extending the aspect opposition to the class of atelic activities (see Dickey and Hutcheson 2003, Dickey 2006, Dickey 2007), which has also been independently suggested by Lehmann (2004). In other words, the productive derivation of delimitatives with *po-* has been a major step in producing the maximal distribution of the aspect opposition in Russian.

Thus, as regards the grammaticalization of Russian prefixes as markers of perfectivity, Russian is characterized by a split system: certain prefixes, i.e., *pro-*, *za-* and *s-* (cf. Čertkova and Čang 1998: 18) are arguably grammaticalized in that they have become productive perfectivizers of telic impf verbs, whereas *po-* has become grammaticalized as the productive perfectivizer of atelic impf verbs. Although there is no single prefix that has become the sole marker of perfectivity in Russian, there is a clear system in that *pro-*, *za-* and *s-* (and other prefixes to a lesser extent) have become the markers of prototypical pf verbs, i.e., telic pf verbs, which assert the goal-oriented nature of a situation, and *po-* has become the primary marker of perfectivity for non-prototypical pf verbs, i.e., atelic verbs possibly expressing non-goal-oriented situations. It may seem surprising, but what has produced the maximal distribution of the aspect opposition, and therefore its grammatical status, is the marker of non-prototypical pf verbs, the prefix *po-*.

Now that we have shown how Russian aspect has become grammaticalized with regard to the criterion of maximal distribution over a part of speech, let us now consider how the developments discussed above can be explained in terms of grammaticalization theory. Of the three qualitative changes linguistic units undergo when they are grammaticalized—morphosyntactic reanalysis, semantic bleaching, and phonetic erosion (cf. Newmeyer 2001)—the developments in prefixation leading to the Russian system of aspect can only be discussed in terms of the second, semantic bleaching: morphosyntactic reanalysis and phonetic erosion did not take place.[11] Further, there was no single type of semantic bleaching involved. Rather, the semantic change that occurred in the case of the telic prefixes, i.e., the extraction of the schema of the TRANSITION FROM S^1 TO S^2, was minimal and regular, whereas the bleaching of *po-* was more significant and particular, as it involved the loss of the spatial meaning of the prefix due to the

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[10] This verb is not to be confused with its inchoative homonym *poljubit*ᵖ 'take a liking to'.

[11] Heine and Kuteva (2007: 34–39) additionally speak of EXTENSION, the spread of linguistic units to new contexts, but it is not clear that extension was directly involved in the developments of prefixation outlined above.

aspectual pairing of *poiti*[p] 'PO-go' with *iti*[i] 'go', i.e., it was ultimately a consequence of the prefixation of the generalized GO-verb *iti*[i] with *po-*.

While it seems clear that the various semantic changes that have taken place with the various prefixes described above have increased the grammatical status of aspect in Russian,[12] they are best analyzed as such—semantic changes. No special recourse to a purported process of grammaticalization is necessary. In contrast, the data presented above suggest that, as far as Slavic aspect is concerned, grammaticalization is an epiphenomenon of independent changes, as argued in some recent analyses, in particular Campbell (2001), Joseph (2001, 2004) and Newmeyer (2001). Accordingly, in the discussion that follows the term GRAMMATICALIZATION is understood solely as the epiphenomenal result of such independent process, and where convenient GRAMMATICALIZATION is used as a cover term for such processes that produce this result. No distinctive process is meant by this term.

The description of Russian prefixation as it relates to grammaticalization given above is not a digression, but serves as an important background for the discussion of South Slavic perfectivizing prefixation given in the following sections.

2. Perfectivizing prefixation in Bulgarian, Croatian and Slovene

This section examines the major perfectivizing prefixes in South Slavic, taking data from Bulgarian, Croatian and Slovene, with regard to the taxonymy of perfectivizing prefixes outlined in section 1. It is shown that these three languages differ significantly in their particular systems of perfectivizing prefixation. The examination proceeds from east to west, starting with Bulgarian, continuing with Croatian and finishing with Slovene. Before going any further, I should point out that subsumptive perfectivizing prefixation has been a common by-product of lexical prefixation in all three languages, cf., e.g., in addition to Croatian *na-pisati* 'write' given in section 1 the Bulgarian *na-piša*[p] 'write [pf]' (< *piša*[i] 'write') and Slovene *na-pisati*[p] 'write' (< *pisati*[i] 'write [imp]), in which the prefix is not felt to add anything but the meaning of the pf aspect. Further examples are easy to adduce, cf., e.g., Bulgarian *pri-bliža*[p] *se* 'approach', in which the

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[12] The initial establishment of the IMPERFECTIVE : PERFECTIVE opposition as a grammatical category in Slavic languages occurred in the Common Slavic period. Therefore, it only makes sense to speak in terms of increases in the grammatical status of aspect in the historical Slavic languages such as Russian, i.e., the aspect opposition has become more grammaticalized in them.

meaning of *pri-* 'toward, to' overlaps with the meaning of the impf source verb *bliža^i se* 'draw near'; the same applies to Croatian *pri-bliziti^p se* Slovene *pri-bližati^p se* 'approach'. Therefore, subsumption is assumed to be characteristic of all three languages and is discussed only as it becomes relevant to the differences between the South Slavic languages.

2.1. *Bulgarian*

Bulgarian is characterized by a well developed system of perfectivizing prefixation, which has been described in detail by Ivanova (1966, 1974) and others. Ivanova (1966) examines the "desemantization" (*desemantizacija*), i.e., semantic bleaching, of individual perfectivizing prefixes in Bulgarian on the basis of dictionary counts of prefixed verbs, and concludes that *iz-* is statistically its most frequent *préverbe vide*. She observes that this prefix functions as a pure perfectivizer in almost 9.44% (i.e., 61 verbs) of her corpus of 646 verbs prefixed with *iz-*, which is the highest percentage for any of the prefixes she examines (the second highest percentage was 7.17% for *o-*; the third highest was 6.5% for *na-* and the fourth was 5.11% for *s-*; for details, see Ivanova 1966: 131–133). In other words, these prefixes contribute no meaning other than perfectivity for these percentages of the compounds they form.

Bulgarian verbs in which the prefix is purely perfectivizing are characterized by a functional restriction on their derived impf correlates. Recall that Bulgarian (and Macedonian) prefixed pf verbs almost without exception derive suffixed impf correlates (cf., e.g., *napiša^p* 'write' > *napisvam^i* 'write'), to a much greater extent than other Slavic languages. If the prefix involved retains its original spatial meaning in the pf and impf compounds, the derived impf verb may be employed in any context requiring an impf verb. If, however, the prefix really only expresses some abstract (i.e., non-spatial) meaning, the derived impf correlate cannot be used in the actual present. For example, in the case of *piša^i/napisvam^i* 'write'—*napiša^p* 'write' example (1a) is possible, but not (1b):

(1) a. *Točno sega **piše**^{i} pismoto.*
'Right now he <u>is writing</u> the letter.'

b. **Točno sega **napisva**^{i} pismoto.*
'Right now he <u>is on-writing</u> the letter.'

The 61 pf partner verbs in *iz-* that comprise the 9.44% Ivanova's total of 646 pf verbs prefixed with *iz-* have impf correlates that cannot be used in the actual present, e.g., *izcerjavam^i—izcerja^p* 'heal' and *izpivam^i—izpija^p* 'drink'.

The aforementioned pf partner verbs are not the only pf verbs that have derived impf correlates with this usage restriction. In the case of *iz-*, Ivanova (1974) identifies the following such *Aktionsart* types: general-resultative verbs (*obšterezultativni glagoli*; these are pf partner verbs, and note that Ivanova's 1966 pf partners in *iz-* are included in this category in Ivanova 1974), e.g., *izkonsumiram^p—izkonsumirvam^i* 'consume'; inchoative verbs (*efektivni glagoli*), e.g., *izblednja^p—izblednjavam^i* 'turn pale'; factitive verbs (*efektivno–komunikativni glagoli*) *izgladnja^p—izgladnjavam^i* 'smooth out'; semelfactive verbs (*ednoaktni glagoli*) *izlaja^p—izlajvam^i* 'bark'; object-resultative verbs (*rezultativno-pankursivni glagoli*), i.e., verbs that express that an action encompasses the entire object (often its surface), e.g., *izkârpja^p—izkârpvam^i* 'darn, mend'; distributive verbs (*rezultativno-pankursivno-distributivni glagoli*), e.g., *izkrada^p—izkradvam^i* 'steal [all of]'; secondary resultative verbs (*konsekutivno-rezultativni glagoli*), e.g., *izleža^p—izležavam^i* 'serve out [a prison term]'. Table 1 gives the total numbers, i.e., Ivanova's (1974) numbers for these *Aktionsart* verbs:

Table 1. Ivanova's (1974) Resultative *Aktionsart* Types for *iz-*.

General-resultative verbs:	227
Inchoative verbs:	22
Factitive verbs:	13
Semelfactive verbs:	115
Object-resultative verbs:	83
Distributive verbs:	159
Secondary resultative verbs:	19
Total:	638

Ivanova (1966, 1974) points out that her numbers cannot be considered comprehensive; in any case, they reveal the overall relationships of the various meanings/senses of the prefix. Based on the fact that *iz-* is the prefix with the highest percentage of verbs in which it functions as a *préverbe vide*, one is justified in concluding that *iz-* is the perfectivizing prefix in Bulgarian that has been grammaticalized to the highest degree. There are reasons to do so, but also reasons to qualify such a statement. In what follows I elaborate on both.

As regards reasons for considering *iz-* the primary grammaticalized prefix in Bulgarian, the high number of telic, resultative verbs containing this prefix is certainly a reason to consider it a grammaticalized perfectivizing prefix. Again, as stipulated in section 1.2. the term GRAMMATICALIZED here simply means that the prefix has become a grammatical marker of perfectivity. Indeed, the numbers indicate that it is used more than any other prefix to create telic, resultative verbs that are the pf partners of their source verbs. Another reason to

consider *iz-* to be a highly grammaticalized prefix is the diversity of predicate types for which it functions as a resultative/perfectivizing prefix: telic predicates, inchoatives, factitives, and atelic predicates (in the case of secondary resultative verbs). In Dickey (2005) I have argued that productivity with inchoatives is particularly indicative of the importance of a perfectivizing prefix in Slavic, as changes of state have no inherent predilection for any one kind of perfectivizer over another. Note also that *iz-* has been productive with loan verbs to some degree, cf., e.g., *izkonsumiram^p* 'consume', *izkorigiram^p* 'correct'. Lastly, another indication that *iz-* has become a grammatical marker of perfectivity is that it appears to be in the process of becoming an orphan prefix, though in a manner different than was described in section 1. Namely, the corresponding preposition *iz*, which has historically meant 'out of' in Bulgarian, has been replaced in this meaning by *ot* 'from', cf. Šaur (1964). For instance 'to go out of the room' is now *izlizam ot stajata*, lit. 'out-go from room.' This leaves a situation where the prefix *iz-* has no productive semantic connection with a cognate preposition in its elative meaning, which is in fact expressed by the prefix in only a minority of the verbs in which it occurs (48, according to Ivanova 1974).

Shull's (2003) theory outlined in section 1 is very well suited to explain how a source prefix such as Bulgarian *iz-* becomes such a highly productive perfectivizing and resultative prefix: the meaning of the TRANSITION FROM S^1 TO S^2 in its original spatial (elative) meaning has developed into an independent, abstract resultative meaning. This development is a consequence of the overall goal-orientation of language itself. It is interesting that many of the productive perfectivizing prefixes in Slavic are originally source prefixes (e.g., Bulgarian *iz-*, Croatian, *iz-*, Russian *ot-*); I would speculate that the combination of the original source meaning combined with a new abstract goal meaning produces a semantic potential including both the beginning of an action and its endpoint, i.e., the complete profile of an action. This increased semantic potential in turn gives source prefixes a wider applicability than goal prefixes, and thus results in their high productivity as perfectivizing/resultative prefixes. I would further speculate that the change inherent in the TRANSITION FROM S^1 TO S^2 ensures that the original spatial meaning of source and goal prefixes will always be reconstructable, that is to say that speakers are always able to construct a metaphoric link between the original spatial profile of a goal or source prefix and the abstract meaning TRANSITION FROM S^1 TO S^2, even if the link is not ordinarily made in everyday usage.[13]

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[13] In the case of *iz-* this means that Bulgarian speakers can reconstruct a metaphorical link between spatial elative *iz-* and abstract perfectivizing/resultative *iz-*. This idea, along with many mentioned here, can only be confirmed by psycholinguistic experimentation, which is unfortunately beyond the scope of this article.

Let us now turn to the reasons against considering *iz-* to be the most grammaticalized perfectivizing prefix in Bulgarian. If Ivanova's (1966) figures for the productivity of prefixes as *préverbes vides* indicate that *iz-* is the most productive, this is in part because she has "stacked the deck" by limiting the counts to include only telic prefixation, i.e., telic pf verbs. But the numbers change drastically if one accepts some meanings of atelic *po-* as cases of purely perfectivizing prefixation, primarily its delimitative meaning. In a previous analysis (Dickey 2006), I have argued that the strong goal-orientation in human cognition and language is the reason why ordinarily only telic pf verbs are considered to be pf partner verbs of their impf source verbs; once one recognizes the effect of this bias, there is no reason not to consider *po-* delimitatives derived from atelic impf verbs (and ordinarily telic impf verbs when construed as profiling atelic processes, cf. Russian telic *pisat^i pis′mo* 'write a letter' versus atelic *pisat^i* 'write, be engaged in writing, be a writer') to be the pf partner verbs of their impf source verbs. Thus, prefixed telic pf verbs are the prototypical pf partner verb, whereas *po-* delimitatives, which only limit a predicate indefinitely in time, are also pf partner verbs, if non-prototypical ones. This line of reasoning has met with approval in a recent native examination of the issue of Russian aspectual pairs, Zaliznjak, Mikaèljan and Šmelev (2010).

If we may consider *po-* delimitatives in Russian to be pf partners of their source verbs when the predicates are construed atelically, there seems little to prevent one from doing the same for Bulgarian. That is to say, in Bulgarian 'write' is expressed by two aspectual pairs, *piša^i—napiša^p* 'write$_{TELIC}$' and *piša^i—popiša^p* 'write$_{ATELIC}$'. If one accepts this line of reasoning, then the numbers for *iz-* become less impressive when compared to Ivanova's (1974) numbers for perfectivizing *po-*, which are given in Table 2.

Of course, it is the number of attenuative verbs, e.g., *poizstina^p* 'cool down [a little]' that increases the overall number of *po-* pf verbs in Bulgarian to relatively astronomic proportions. The next largest group consists of the delimitatives. A case can be made for a conceptual connection between attenuatives and delimitatives in that both profile the limitation of a situation only with respect to different cognitive domains: attenuatives profile the limitation of a situation with respect to its intensity or result, whereas delimitatives profile the limitation of a situation in time (cf. Ivanova 1974: 79). However, I will leave the attenuatives aside for the purpose of this discussion and focus on delimitatives and the other classes.[14]

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[14] The huge number of *po-* attenuatives is a very interesting, distinct feature of Bulgarian, and one that has received no attention as far as I am aware beyond the laconic treatment in

Table 2. Ivanova's (1974) *Aktionsart* Types for *po-*.

Attenuative verbs:	1721
Delimitative verbs:	460
Inchoative verbs:[15]	31
Factitive verbs:	32
Ingressive verbs:	41
General-resultative verbs:	128
Total:	2413

An anonymous reviewer rejects this idea as "far-fetched, [because] if this is so, *dopiša^p* 'finish writing' can also be considered [to be a] perfective partner of *piša* 'write'." I agree with the reviewer that this is a consequence of the approach taken here, but would point out that it is also not catastrophic for a principled account of aspectual pairs—it simply requires a more flexible approach to aspectual pairing, along the lines of Lehmann's (1988) functional aspectual pairs. In Dickey (2006) I argue, based on Langacker (1999: 103), for a cognitive approach to aspectual pairhood. According to this approach, in a network of verbs expressing a single lexical meaning, aspectual pairhood is A CATEGORIZING RELATIONSHIP BETWEEN A PAIR OF IMPF AND PF VERBS THAT HAS A HIGH DEGREE OF ENTRENCHMENT AND EASE OF ACTIVATION. Thus, aspectual pairhood is to be considered the probability of a pf verb being activated by an impf verb and vice-versa, or as the categorizing relationship obtaining between the two verbs most easily activated by some verbal notion. Given the activation of the notion WRITE and the corresponding network of Bulgarian verbs containing the root -*pis-* 'write', the two verbs that are most likely to be activated are *piša^i—napiša^p*, and they will each have a very high probability of activating the other as the context of the discourse changes requiring a switch in aspect. However, other pf verbs in a network do have lower probabilities of being activated, so that there is in fact a kind of continuum of aspectual pairhood, ranging from very entrenched (*piša^i—napiša^p*) to moderately so (*piša^i* 'write'—*popiša^p* 'write for a while'), to an extremely low level of entrenchment (e.g., *piša^i* 'write'—*dopiša^p* 'finish writing'). Recall in this regard Holden's (1990: 134) objection mentioned in section

Ivanova (1974). My chief informant considers them to have a certain emotive characteristic; unfortunately they must await further investigation.

[15] Regarding the numbers for inchoatives and factitives in *po-*, I have subtracted from the total number of inchoatives listed the number of decausative verbs, e.g., *poevropejčvam^i se* 'become Europeanized', as these reflexive decausatives are not truly intransitive inchoatives. Likewise, I added to the number of factitives the transitive counterparts of decausatives listed under the inchoatives, provided they were not already listed under the factitives and are attested as transitive verbs in dictionaries.

1.2. to the *a priori* exclusion of certain kinds of aspectualities from the binary opposition.

Here I would point out that Bulgarian *po-* delimitatives in fact fare fairly well in two traditional tests for aspectual pairhood. The first is Maslov's (1948) the narrative-present test: a pf verb is substituted by its impf partner in the switch from the past tense to the narrative present. According to my informant, Bulgarian *po-* delimitatives pass this test when adverbials or the overall context strengthen the notion that the situation occurs for some limited duration, as in (2):

> (2) a. *Toj **počaka**ᵖ edin mig s prâst na zapântkata*. (Bulgarian; Ivan Vazov, *Pod igoto*)
> 'He <u>waited</u> a moment with his finger on the trigger.'

> b. *Toj **čaka**ⁱ edin mig s prâst na zapântkata*.
> 'He <u>waits</u> a moment with his finger on the trigger.'

The second test is Forsyth's (1970: 40) modal test, in which a negated modal construction with an impf verb will select its pf partner in a subsequent positive imperative. According to my Bulgarian informant *po-* delimitatives are acceptable in this construction for atelic verbs, as shown in (3) and (4):

> (3) *Ne e neobxodimo da **rabotiš**ⁱ, no ako ne možeš da izdâržiš, **poraboti**ᵖ.*
> (Bulgarian)
> 'You don't need to <u>work</u>, but if you must, <u>do some work</u>.'

> (4) *Ne trjabva da **spiš**ⁱ, no ako ne možeš da izdâržiš, **pospi**ᵖ.*   (Bulgarian)
> 'You shouldn't <u>sleep</u>, but if you must, <u>sleep some</u>.'

Thus, there is a case to be made for Bulgarian *po-* delimitatives as pf partner verbs of atelic verbs or ordinarily telic verbs when they are construed as atelic activities. Clearly, telic pf partner verbs, e.g., *napiša*ᵖ 'write [to completion]', are to be considered the prototypical kind of pf partner verb, as ordinarily humans undertake actions to bring them to completion and effect results. However, once we factor out the goal bias, then *po-* delimitatives seem very eligible as neutral pf partners of their atelic impf correlates, though due to the goal bias of human cognition *po-* delimitatives should be considered non-prototypical pf partner verbs.

Above I characterized Bulgarian *po-* delimitatives as limiting a predicate indefinitely in time, i.e., they express the indefinite duration of a situation in time. Regarding Russian, the emphasis on the nuance of the relative brevity of the sit-

situation in some descriptions is erroneous, as Isačenko (1962: 391) and Flier (1985: 50) point out. What Russian *po-* delimitatives really express is the indefinite duration of a situation, a view that is supported by the fact that *po-* delimitatives need not have a temporal adverbial. It seems that Bulgarian *po-* delimitatives likewise do not need to have an adverbial of duration, shown in (5a); nor do they necessarily express objectively short periods of time, which is shown in (5b).

(5) a. ***Porabotix*** *i sabrax pari da si kupja kola.* (Bulgarian; Internet)
'I <u>worked</u> a while and saved mony to buy a car.'

b. ***Porabotix*** *njakolko godini, vzexme si žilište i sega misâlta za vtoro dete sama uzrja.* (Bulgarian; Internet)
'I <u>worked</u> for a few years, we acquired a residence and now the thought of a second child has crystallized all on its own.'

As I have argued for Russian (Dickey 2006), I would suggest for Bulgarian as well that the frequent nuance of short duration is simply an interpretation that arises due to the fact that the foregrounding effect of the pf requires that the profiled situation be smaller than the background (temporal base); this facilitates the interpretation of short duration in the case of atelic verbs whose temporal profile is indefinite to begin with. Note also that, in most cases, there is in addition to a *po-* delimitative (e.g., *popiša*[p] 'write for a while') a telic pf partner verb available to express a given situation (e.g., *napiša*[p] 'write to completion'): if the telic pf is not appropriate in the context, then the situation can only be viewed as continuing for some time *less* than the time required to complete the action, and so the situation is naturally viewed as being of a *relatively* short duration. Of course, in a cognitive account such a conventionalized interpretation is entrenched as a node in the network of delimitative *po-*. However, even in this respect we should consider short duration a subordinate node derivative from a prototype (or schema) of indefinite duration.

Ivanova's (1974) statistics put the number of Bulgarian *po-* delimitatives at 460 (Dejanova 1976 puts it at 472). This number is higher than any of the numbers of the individual types of resultatives formed by *iz-*, which is not necessarily of great significance, but it is important in my view that the number of delimitatives is over two-thirds of the total number of resultatives in *iz-*. Here it should be pointed out that Bulgarian delimitative *po-* is productive with loan verbs, e.g., *pobalansiram*[p] 'balance [on a balance beam] for a while', *pomeditiram*[p] 'meditate for a while', *porelaksiram*[p] 'relax for a while', *posârfiram* 'surf [the Internet] for a while' and *povegetiram*[p] 'vegetate for a while'. Moreover, *po-* has been productive with a range of predicate types, including inchoatives,

factitives, ingressives and ordinary telic verbs (though I assume it is no longer productive in the derivation of resultative verbs). Recall from above that productivity with inchoatives is a hallmark of *préverbes vides*. In any case, the number of the non-attenuative verbs prefixed with *po-* according to Ivanova (1974) is 692, more than the total number for *iz-*. In addition to this statistical fact it must be stressed that *po-* currently has no spatial meaning at all, cf. Ivanova (1966: 124), who points out that Blg *po-* is "semantically markedly bleached" (she does not characterize any of the other Bulgarian perfectivizing prefixes in this way).

As mentioned in section 1, Bulgarian *po-* is an example of an orphan prefix: the prefix *po-* has not retained the spatial meaning of the corresponding preposition *po*, 'on, over, along'. The few surface-contact verbs given by Ivanova (1974: 85), e.g., *pozlatjavam*[i] 'gild', are in my opinion to be considered relics of the original surface-contact meaning of *po-*; note that *po-* is not productive with loan verbs in this meaning.[16] One can only speculate on the reason why *po-* would lose its spatial meaning while the preposition retained it. I suggest that the reason was ultimately the subsumption of the spatial meaning in verbs of motion prefixed with *po-*, such as older *poida*[p] 'PO-go', which in Old Church Slavic in fact meant 'go along a surface'. As contact with some surface is inherent in a motion event, the spatial meaning of the prefix was "bleached" in verbs of motion. This is why modern Bulgarian dialectal *poida*[p] and standard *povârvja*[p] are delimitative, meaning 'go for a while', and in Dickey (2007) I argue that verbs of motion prefixed with *po-* were the source of the new delimitatives in Russian (the same would apply to Bulgarian).

Thus, there are also reasons for considering *po-* to be the most grammaticalized perfectivizing prefix in Bulgarian. Given the fact that the prototypical pf verb in Slavic languages is a telic, resultative verb, it would be a mistake in my view simply to place *po-* higher than *iz-* in some grammaticalization scale in Bulgarian. Rather, it makes more sense to take the view that in Bulgarian these two prefixes have both become grammatical markers of perfectivity, *iz-* as a per-

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[16] An anonymous reviewer claims that Bulg. *po-* has retained its spatial meaning, and cites verbs such as *polazja*[p] 'crawl upon', *posolja*[p] 'salt', *poleja*[p] 'pour on', *poseja*[p] 'sow [all over]', and *popârska*[p] 'bespatter', etc. As I suggested above, these verbs are relics: they very old, very limited in number, and are not representative of the current state of the language. Only one relatively recent loan verb, *pocinkovam*[p] 'galvanize', appears to contain SURFACE-CONTACT *po-* in Bulgarian. In this regard note that other loan verbs of covering a surface are biaspectual and not perfectivized with *po-*, e.g., *emajliram*[i/p] 'enamel', *lakiram*[i/p] 'laquer', etc. Further, my informant refuses to perfectivize nonce verbs of covering some surface with *po-*. In view of these facts, I remain by my view that Bulgarian *po-* currently has no spatial meaning, or if it does that this meaning is so moribund and marginal, i.e., unproductive, that it can be ignored in the present discussion.

fectivizer of telic verbs and *po-* as a perfectivizer of atelic verbs. In other words, Bulgarian is characterized by a split system of perfectivizing perfectivization that bears a strong (though not perfect) resemblance to the Russian system described in 1.2. In my view, however, *po-* as perfectivizer of atelic verbs is more significant in that it is essential for the full grammaticalization of the aspect category, as the regular perfectivization of atelic activity verbs expands the distribution of the PERFECTIVE : IMPERFECTIVE opposition to its maximum, to encompass not only telic predicates (achievements and accomplishments) but also atelic activities. Again, such a distribution of a Slavic aspectual system is the maximum possible, as state predicates can be limited in time only with difficulty and thus resist inclusion into the PERFECTIVE : IMPERFECTIVE opposition. As is shown in sections 2.2. and 2.3., the split system of Bulgarian situation differs considerably from that of Croatian and Slovene.

2.2. *Croatian*

Perfectivizing prefixation in Croatian differs from Bulgarian in two important ways. First, though *iz-* is productive in the derivation of resultative verbs in Croatian, e.g., *izrecitirati* 'recite', it does not seem as productive as the Bulgarian prefix.[17] Second, *po-* has not been grammaticalized to any significant degree as a perfectivizer of atelic verbs.

Let us consider *iz-* and telic prefixation first. An important difference between Croatian and Bulgarian related to perfectivizing prefixation is that contemporary Croatian has a high tolerance for biaspectual verbs, especially where loan verbs are concerned. Grickat (1957: 66, 104–105) observes not only that newer loans are quite resistant to prefixation in Croatian and Serbian (e.g., *denuncirati*[i/p] 'denounce') but also that Croatian and Serbian have a higher number of older biaspectual verbs (e.g., *krstiti*[i/p] 'baptize', *čestitati*[i/p] 'congratulate') than other Slavic languages.[18] It is true that many biaspectual loan verbs in Croatian derive pf re-

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[17] It would be interesting to confirm this impression with a word count, but I think it would be difficult to find a Croatian dictionary equivalent in size to Stojanski's (1955–59) three-volume dictionary of Bulgarian, the main source for Ivanova's (1974) counts.

[18] Ivančev (1971: 170, fn. 1) disputes Grickat's conclusion that biaspectual verbs are more numerous in Croatian and Serbian than in Bulgarian, claiming that Bulgarian occupies "first place" in this respect. I think there are several reasons for accepting Grickat's conclusion that biaspectuality is more prominent in the aspectual systems of Croatian and Serbian than in the Bulgarian system, but I will give three here. First, some very common Croatian and Serbian biaspectual verbs have aspectually distinct cognates in Bulgarian, cf., e.g. Croatian/Serbian *čestitati*[i/p] vs. Bulgarian *čestitja*[p] 'congratulate', Croatian/Serbian *jebati*[i/p] vs. Bulgarian *eba*[i] 'fuck', and Croatian/Serbian *vidjeti*[i/p] vs. Bulgarian *vidja*[p] 'see'. Second, Bulgarian does pre-

sultatives prefixed with *iz-*, e.g., *istrenirati*[p] *se* 'train', *istuširati*[p] 'shower', *iz-manevrirati*[p] 'maneuver', *izmanipulirati*[p] 'manipulate'. Indicative of the productivity of *iz-* as a resultative perfectivizer is the fact that many are colloquial and not listed in dictionaries, e.g., Croatian *izlifrati*[p]/Serbian *izliferovati*[p] 'deliver', *izluftati*[p] 'ventilate', *izorganizirati*[p] 'organize', etc. Note however that such loan verbs prefixed with *iz-* are not pf partner verbs but specifically resultatives, often with a distributive nuance. Though it is significant that *iz-* is the default prefix in the derivation of resultative verbs in Croatian, it appears to be far from fully grammaticalized as a perfectivizing prefix.

Thus, while perfectivizing prefixation of telic verbs in Croatian resembles that of Bulgarian, overall it is characterized by a lower degree of grammaticalization in that it seems to lack a clearly grammaticalized perfectivizing prefix. It is interesting that Grickat (1957: 116) attributes the high level of biaspectuality in Croatian and Serbian to the lack of sufficiently abstract perfectivizing prefixes in these languages, and recognizes this as an archaic feature of Croatian and Serbian (Grickat 1957: 128). I think that Grickat is correct in her first suggestion, and think that the latter is a very astute observation of something that is part of a larger phenomenon. Namely, despite the development of *iz-* as a productive resultative prefix, my impression of Croatian is that it is aspectually a very conservative language, both in terms of aspectual usage and the morphology of its aspectual opposition. In observing that Croatian and Serbian have no abstract perfectivizing prefixes, Grickat is basically describing a system based entirely on subsumption as a way of perfectivizing impf verbs: the prefix that overlaps the most with the meaning of the source verb is chosen as the perfectivizing prefix, on a case by case basis. The claim that the aspectual system of Croatian is relatively archaic may seem counterintuitive, inasmuch as Bulgarian gives the impression of having an archaic aspectual system by virtue of its retention of the Common Slavic synthetic preterits (the aorist and imperfect). However, the Bulgarian system has undergone significant developments since the time of Common Slavic both in terms of its aspectual morphology and usage (cf. section 2.1. above and Dickey and Hutcheson 2003 regarding the former, and Dickey 2000: 282–286 regarding the latter).

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fix loan verbs to a limited extent, e.g., *otreagiram*[p] 'react', as do Croatian and Serbian, e.g., *izorganizirati*[p] 'organize', but it also shows a tendency to suffix loan verbs in order to create derived impf verbs, e.g., Bulgarian *ekranizirvam*[i] 'produce for the screen', *registrirvam*[i] 'register', *remontirvam*[i] 'repair' and *servirvam*[i] 'serve'. Third, it is worth pointing out that since Bulgarian retains the aorist/imperfect distinction for biaspectual verbs, such verbs are arguably less consequential for an assessment of the Bulgarian aspectual system than they are for Croatian and Serbian, where most contemporary urban speakers have reduced the past tense system to a single preterit.

Let us now turn to the status of *po-* in Croatian. Unlike in Bulgarian, where as mentioned above this prefix has lost its spatial meaning, the spatial meaning of SURFACE CONTACT is alive and well in this prefix in Croatian. By my count there are 90 verbs prefixed with *po-* in which the prefix expresses SURFACE CONTACT in Anić (2000) and Bujas (1999).[19] Representative examples are *pocinčati*[p] 'galvanize,' *poplijesniti*[p]—*poplješnjivati*[p] 'become mouldy,' *pošumiti*[p]—*pošumljivati*[i] 'afforest'; in these verbs, *po-* profiles the complete covering of a surface with the action in question (galvanizing, becoming mouldy, and afforestation, respectively). Another spatial meaning that has been retained by Croatian *po-* is the ABLATIVE meaning, which according to my count occurs in 21 verbs. The following are representative examples: *polaziti*[i]—*poći*[p] 'depart,' *pobirati*[i]—*pobrati*[p] 'take,' *potjecati*[i]—*poteći*[p] 'originate.'

A very productive abstract meaning of *po-* in Croatian is that of distributivity, which refers to the encompassing of all of the relevant set of objects (or subjects) by the action expressed by the verb. There are 114 *po-* distributives in Anić (2000) and Bujas (1999), more than any other type of verb except factitives (concerning which, see below). Representative examples are *pobacati*[p] 'throw [all of],' *pogubiti*[p] 'lose [all of],' *posjedati*[p] 'sit down [of all of a group].' I have argued in Dickey (2002) that the distributive meaning of Croatian *po-* is a direct metaphorical transfer of its surface-contact meaning, whereby the "surface" to which the action applies is the abstract space occupied by all of the relevant set of objects (or subjects). Inasmuch as this is true, SURFACE CONTACT (90 verbs) + DISTRIBUTIVITY (114 verbs) accounts for 204 of the 603 Croatian verbs in *po-*, the largest overall semantic group of verbs containing the prefix.

The single largest group of Croatian verbs in *po-* is that of the factitives, of which there are 119. Representative examples are *počovječiti*[p] 'humanize', *podebljati*[p] 'make fat,' *poružniti*[p]—*poružnjivati*[i] 'make ugly.' One might object that if the verb is suffixed with *-i-*, an old factitive suffix, the prefix expresses only CHANGE OF STATE. The problem with this view, in my opinion, is that the old opposition between factitive *-i-* and inchoative *-ě-* has been considerably degraded in Croatian (cf. Svane 1981), and *po-* occurs in far more factitives (119, as pointed out) than inchoatives (only 31). In this respect, one might compare *oslabiti*[p], both 'make weak' and 'become weak', and *otežati*[p], both 'make difficult' and 'become difficult', with deadjectivals in *po-*, e.g., *poružniti*[p] 'make ugly' and *podebljati*[p] 'make fat', which are always factitive.

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[19] These two dictionaries are also the sources for my figures for other meanings of Croatian *po-* given below.

The case can be made for an underlying semantic connection between surface-contact *po-*, distributive *po-* and factitive *po-*. The great bulk of verbs with surface-contact *po-* are transitive (82 out of 90), as are the great bulk of *po-* distributives (100 out of 114), and all of the factitives. Thus, it appears that there is a cluster of types of verbs in *po-* in Croatian that are or tend to be transitive. Though transitivity is correlated with perfectivity (cf. Hopper and Thompson 1980), the two cannot be simply equated, and in the case of Croatian *po-* factitives, 81 of the 119 verbs contain *po-* in both the impf and pf correlates, e.g., *pobuditi*[p]—*pobuđivati*[i] 'arouse, inspire', *poružniti*[p]—*poružnjivati*[i] 'make ugly', etc. The distributive function of *po-* itself, which is probably the most productive abstract meaning expressed by a Croatian prefix, is also not central to the PERFECTIVE : IMPERFECTIVE opposition. The abstract meaning of distributivity does not belong primarily to verbal aspect but to quantification as such, as Dolinina (1999: 202) has suggested. Inasmuch as Dolinina's view is accurate, it comports well with the idea that Croatian aspect is characterized by a relatively low level of grammaticalization compared to other Slavic languages.

The delimitative meaning of *po-*, so productive in Bulgarian, is marginal in Croatian. In my Croatian sources there are only 15 *po-* delimitatives. Dejanova (1976: 464–465) also observes a sharp difference between the number of delimitative verbs in Bulgarian on the one hand and Croatian and Serbian on the other: 472 *po-* delimitatives in Bulgarian versus only 35 in Croatian and Serbian. In my experience with written and spoken Croatian, *po-* delimitatives occur rarely, save for a few verbs such as *posjediti* 'sit a while' and *popričati* 'converse a while'. A comparison of Bulgarian and Croatian shows that there is an inverse correlation between the spatial surface-contact meaning of *po-* and its delimitative meaning. (This is true across Slavic, the only exception being Polish, which has both.)

To conclude this section, a comparison of Croatian and Bulgarian perfectivizing prefixation shows that Bulgarian has both a telic perfectivizing prefix (*iz-*) and an atelic one (*po-*) that have become grammaticalized to varying extents, as evidence by the fact that *iz-* has developed salient abstract (non-spatial) meanings and *po-* has lost its spatial meaning altogether. In contrast, Croatian relies on subsumption as the manner in which it perfectivizes verbs. It does have *iz-* and *po-* as perfectivizing prefixes, but they have not become grammaticalized as markers of the pf aspect (*préverbes vides*) nearly to the extent that they have in Bulgarian. It should come as no surprise that Croatian has no orphan prefixes among its perfectivizing prefixes. Again, the lack of an orphan prefix in Croatian is an indication of the relative conservatism of its derivational aspect system.

2.3. *Slovene*

Slovene presents yet another picture. Like Croatian, it does not have productive delimitative *po-*. However, it has by an accident of sound change developed a highly grammaticalized telic prefix, *s-/z-*. In what follows, I first briefly describe Slovene *po-* and then discuss *s-/z-*.

Slovene *po-* bears a close resemblance to Croatian *po-*. Like Croatian, Slovene *po-* has a salient SURFACE-CONTACT meaning; representative examples are *pocinkati^p* 'galvanize,' *pokromati^p* 'chrome,' *popisati^p* 'cover with writing'; if anything, Slovene SURFACE-CONTACT *po-* is more productive than in Croatian. It also has many *po-* distributives, though my superficial impression is that Slovene does not have as many as Croatian; representative examples are *pobiti^p* 'kill [all of],' *poščipati^p* 'pinch off [all of],' *popokati^p* 'burst [of all of a group].' Further, Slovene has relatively few *po-* delimitatives. A search in Bajec, et al. (1970–1991) yielded 108 delimitatives in *po-*. This number is indeed higher than the number in Croatian, but lower than the number in Bulgarian. Slovene delimitatives are largely limited to a stative verbs and few other lexical classes, such as verbs of sound phenomena, cf., e.g., *pozvoniti* 'ring a while,' and a few verbs of intellectual activity, cf., e.g., *pofilozofirati* 'philosophize a while.' Further, Slovene attests no *po-* delimitatives for many basic notions such as 'work' or 'read.' Thus, Slovene *po-* cannot be characterized as productive in its delimitative meaning. One way in which Slovene *po-* differs from Croatian *po-* is that Slovene *po-* no longer has a spatial ablative meaning. Only relics remain, such as *pobrati^p se* 'leave', and *pohajati^i—poiti^p* has only a metaphorically ablative meaning 'disappear.'

Slovene is unique among the standard South Slavic languages for having developed the hybrid prefix *s-/z-*. The coalescence of *sъ(n)-* 'with' and *jьz-* 'out' into *s-/z-* occurred throughout West Slavic as well as Ukrainian and Belarusian, and the same development took place in Slovene, the westernmost South Slavic language, cf., e.g., Bajec (1959: 112). In contrast to the West Slavic languages, standard Slovene has also kept the prefix *iz-*, so that it disposes of both *iz-* and *z-* (< *jьz-*). The morphological details of *s-/z-* in Slovene are quite complex. Many verbs would indicate an unmarked allomorph of *z-* cf., e.g., *zediniti^p* 'unite' and *zožiti^p* 'make narrow', where *z-* is in prevocalic position. However, if the jer in *sъ(n)-* produced a modern fill vowel, *se-* is common, e.g., *segniti^p* 'rot'. Note that *sn-* is common in verbs where the initial vowel of the source verb resulted in the preservation of the nasal variant *sъn-*, either in the old centripetal meaning of the prefix (e.g., *sniti^p se* 'come together'), or in its abstract resultative meaning (e.g., *snesti^p* 'eat up'). In contrast, verbs of a more recent origin show *z-* as the unmarked allomorph before vowels and resonants, cf., e.g., *zindustrializ-*

irati[p] 'industrialize' and *zromantizirati*[p] 'romanticize.'[20] Otherwise, the allomorphs of *s-/z-* occur strictly according to voicing, cf., e.g., *spiti*[p] 'drink' (< *iz-piti*[p]) and *zbrati*[p] 'collect together' (< **sъ(n)-*).

The prefix *s-/z-* stands out in the Slovene aspectual system for several reasons. One is its productivity with loan verbs, a good indicator of the overall productivity of a perfectivizing prefix. Although in Slovene the situation is complicated by the fact that unprefixed loan verbs are as a rule biaspectual, they are occasionally prefixed when the need is felt for their perfectivity to be morphologically marked.[21] In the following example, a loan verb prefixed with *z-* occurs in the very same text as the biaspectual simplex source verb:

(6) Drugi skušajo svoja dejanja **relativizirati**[i/p]. […] Ker se ji računica ni izšla, je nakup skušala **zrelativizirati**[p] z argumenti, češ da letala ne bo uporabljala le sama, ampak go bodo uporabljali tudi predsednik republike in poslanci, poleg tega pa bo na voljo še za prevoze ranjencev.[*Mladina*]
'Others try to <u>relativize</u> their activities. […] When its calculation did not pan out, [the government] tried to <u>relativize</u> the purchase by saying that it would not be the only user of the aircraft; rather, it would be used by the republican president and the delegates, and in addition it would also be used for the transport of the injured.'

Though Plotnikova (1971: 35) considers *iz-* to be the most productive prefix in the explicit perfectivization of loan verbs in *-irati* (which, as pointed out above, are regularly biaspectual in the first place), a search of the OSSJ yields a high number of perfectivized loan verbs prefixed with *s-/z-*, such as *alarmirati*[i/p]—*zalarmirati*[p] 'alarm', *individualizirati*[i/p]—*zindividualizirati*[p] 'individualize', *manipulirati*[i/p]—*zmanipulirati*[p] 'manipulate', *pakirati*[i/p]—*spakirati*[p] 'pack', etc. In addition, *s-/z-* often competes with *iz-* as the perfectivizing prefix for the one and the same impf loan verb, cf., e.g., *balancirati*[i/p]—*izbalancirati*[p]/ *zbalancirati*[p] 'balance,' *diferencirati*[i/p]—*izdiferencirati*[p]/*zdiferencirati*[p] 'differentiate', *niveli-*

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[20] One might be tempted to see *z-* before vowels and resonants not as the voiced allomorph of *s-/z-*, but as a reduced form of *iz-*, as the SSKJ gives doublet forms of some recent loans, e.g., *znivelirati*[p]—*iznivelirati*[p]. But many such recent loans prefixed with *z-* have no doublet in *iz-*, e.g., *zindustrializirati*[p] 'industrialize'. Note also that the press tends to prefer forms in *z-*, as does the colloquial language. In view of these facts, I consider recent loans in *z-* to be evidence of the productivity of an innovative—though not really new—perfectivizing suffix *s-/z-*.

[21] Although Slovene grammars have maintained that Slovene prefixes loan verbs to a lesser extent than other Slavic languages, Korošec (1972: 205) observes that "recent Slovene linguistics does not resist such prefixation, and prefixed [loan] verbs naturally arise whenever the [source] verb is felt by Slovenes to be completely, or more or less imperfective."

rati[i/p]—*iznivelirati*[p]/*znivelirati*[p] 'level'. The OSSJ attests 105 pf loan verbs prefixed with *s-/z-* compared with only 19 prefixed with *iz-*. When loan verbs occur with a prefix in the contemporary press, I have found them to be prefixed with *z-* and not *iz-*, e.g., *zblanširati*[p] 'blanch', *ziritirati*[p] 'irritate', *zmiksati*[p] 'mix', etc. Moreover, I find that when doublets exist for native Slavic verbs, e.g., *izpiti*[p]/*spiti*[p] 'drink [up]' (< *piti*[i] 'drink'), the contemporary press prefers the variant in *s-/z-*, cf., e.g., the following headline from the newspaper *Novice*: *Spil*[p] *kiselino in si preprezal vrat* 'He drank hydrochloric acid and slit his own throat'.[22] These facts indicate that *s-/z-* is the most productive perfectivizing prefix in contemporary Slovene.

The status of *s-/z-* as the primary empty perfectivizer in contemporary Slovene appears to have been further increased by its spread to verbs prefixed with *vz-* and *raz-* as well, cf. Bajec (1959: 112). Evidence for this is the existence of doublets such as *razdrobiti*[p]/*zdrobiti*[p] 'crumble/break apart' and *vzrasti*[p]/*zrasti*[p] 'grow up' in sixteenth-century Slovene, cf. Merše (1995: 167–8; 192). The details as well as the time frame of this further coalescence are open to question. It is unclear to what extent the coalescence of these prefixes in Slovene was the result of the erosion of *raz-* and *vz-* as opposed to a spread of *z-* at the expense of the other prefixes. It was most likely a combination of the two.

A small piece of evidence in favor of the spread of *s-/z-* is its competition with the suffix *po-*, as in this case there can be no question of erosion. Certain change-of-state verbs have alternate forms prefixed with *po-* and *s-/z-* respectively, e.g., *poboljšati*[p]/*zboljšati*[p] 'improve', *podaljšati*[p]/*zdaljšati*[p] 'lengthen', and *pomanjšati*[p]/*zmanjšati*[p] 'reduce'. Further, *s-/z-* is the sole prefix perfectivizing many other inchoatives, e.g., *zboleti*[p] 'fall ill', *zvodeneti*[p] 'become watery', etc. Thus, the diversity of predicate types which utilize *s-/z-* as perfectivizer is noteworthy: *s-/z-* has not only expanded its sphere of productivity at the expense of other prefixes (*raz-* and *vz-*) in the class of transitive accomplishment predicates, but has also become established as an important perfectivizing prefix for change-of-state verbs. And as mentioned before, it is now the most productive prefix for the perfectivization of biaspectual loan verbs. In my view, these facts taken together indicate that Slovene has been taking steps towards grammaticalizing *s-/z-* as its marker of perfectivity.

One reason for the productivity of Slovene *s-/z-* as a perfectivizer is that it is a separate entity from *s-* 'together,' *s-* 'down from' and *iz-* 'out.' That is to say, *s-/z-* developed as a resultative and perfectivizing prefix without retaining the spa-

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[22] A search of the *Nova beseda* corpus (http://bos.zrc-sazu.si/a_beseda.html; on 5 January 2012) for the newspaper *Delo* confirms this impression for *izpiti*/*spiti*: *spiti* yielded 133 hits, *izpiti* 2; among past-tense forms, *spil* yielded 354 hits, *izpil* only 25.

tial meanings of its etymological source prefixes. This very peculiar development can be explained with Shull's (2003) theory of telic prefixation. Namely, when the fall of the jers created *s-* and *z-* as allomorphs of some new prefix, the semantic coalescence that occurred was that the meaning of the prefix became the common denominator of the GOAL notion 'together' as well as the SOURCE notions 'down from' and 'out', i.e., the TRANSITION FROM S^1 TO S^2. Evidence for this development is the fact that in standard Slovene the source meaning 'out' is expressed solely by *iz-*, e.g., *izhajati^i—iziti^p* 'go out.' Another indication that it is distinct from the aforementioned lexical prefixes is the fact that resultative/perfectivizing *s-/z-* never occurs in derived impf verbs.

Slovene *s-/z-* is in fact an orphan prefix. Evidence for this is the fact that speakers of standard Slovene regularly use *iz* as the SOURCE preposition 'out of' while using all manner of verbs prefixed with *s-/z-*. If the voiced allomorph *z-* were simply a reduced form of *iz-* 'out', the preposition should be phonetically reduced as well. Alongside Bulgarian *po-*, Slovene *s-/z-* is a striking example of an orphan prefix in South Slavic. The presence of productive *s-/z-* in Slovene versus its absence in Croatian is probably the biggest difference regarding perfectivizing prefixation in these two languages.

3. Orphan prefixes, perfectivization and grammaticalization

The preceding sections have provided descriptions of the distinctive elements of the systems of perfectivizing prefixation in Bulgarian, Croatian and Slovene. Each language makes use of subsumption as a way of perfectivizing individual impf verbs. Beyond this, we may summarize the differences as follows. Bulgarian is characterized by a productive resultative/perfectivizing prefix *iz-*, which has been grammaticalized to a considerable extent as a perfectivizer of telic verbs; Bulgarian has also established *po-* as a perfectivizer of atelic verbs, as evidenced by its productivity as a delimitative prefix. Bulgarian *po-* is arguably highly grammaticalized in this role, as it has completely lost its original spatial meaning of SURFACE CONTACT. Croatian has developed *iz-* to a limited extent as a resultative prefix, and has established *po-* as a productive distributive prefix; however, no Croatian prefix has lost its original spatial meaning (*po-* retains its original spatial surface-contact and ablative meanings) and the Croatian system of perfectivization as such is largely limited to lexical prefixation and subsumption. Slovene also has productive distributive *po-* (and *po-* has retained its original spatial meaning of SURFACE CONTACT, just as in Croatian); it has grammaticalized the innovative hybrid prefix *s-/z-* as a marker of perfectivity in telic verbs.

As discussed in 2.1. and 2.3., the two clearest cases of orphan prefixes in South Slavic are Bulgarian *po-* and Slovene *s-/z-*. It is important to point out that although status as an orphan prefix may be taken to be indicative of a high level of grammaticalization of a prefix as a perfectivizer, these two prefixes did not lose their spatial meanings in the same manner. Though accounts of the semantic developments involved must remain speculation, particularly in the case of *po-*, I believe that I have identified plausible paths of development for each of them.

In the case of *po-*, the obvious hypothesis is that the affixation of surface-contact/ablative *po-* to Slavic determinate verbs of motion such as *iti* 'go' eventually resulted in the subsumption of the meaning of the prefix, inasmuch as all motion occurs on a path along some surface (cf. Shull 2003: 160–161) or has a starting point in space. The bleaching of its spatial meaning in turn resulted in a situation where *po-* was poised to develop abstract meanings of non-resultativity (delimitativity, attenuativity, etc.) based on the original atelic meaning of *poiti* '*PO*-go'. In East Slavic and Polish this probably occurred during the sixteenth century (cf. Dickey 2007: 346–347 and the sources cited there); I assume that it must have occurred around the same time in Bulgarian.

The case of *s-/z-* is perhaps ultimately simpler, if the cause was more exotic. As I suggested in section 2.3., the semantic coalescence of *sъ(n)-* 'together; down from' and *jьz-* 'out,' which ensued after the phonetic coalescence of these prefixes resulting from the fall of the jers in the tenth century, resulted in the emergence of a new prefix whose only meaning was the common denominator of telic prefixes, TRANSITION FROM S^1 TO S^2. It is difficult to know exactly when the semantic development of perfectivizing *s-/z-* was complete. Merše (1995: 168) observes that verbs prefixed with *s-/z-* entered into aspectual pair relationships in sixteenth century.

Of these two cases, the semantic bleaching of Bulgarian *po-* seems more "ordinary," in that it was a consequence of the familiar path of semantic bleaching that occurs in subsumption. In contrast, perfectivizing *s-/z-* only developed in Slovene as a by-product of a particular sound change (the fall of the jers). It may seem odd that the clearest case of telic *préverbe vide* in South Slavic (and Slavic) arose as the accidental result of a sound change. However, we can make sense of this oddity in light of the ubiquitous lexical process of subsumption to produce pf partner verbs, which, as it were, obviates the need for a single grammaticalized *préverbe vide*.

Accordingly, it is in fact the surprising grammaticalization of an atelic *préverbe vide* (*po-*) that seems to have "filled a gap" in some Slavic aspectual

systems, and in South Slavic only in Bulgarian. I say "surprising" because the great bulk of Slavic aspectology has focused on telic pf verbs as essential to an aspectual system, and stuffed atelic perfectivization in the cubbyhole of "procedural verbs" (Russian *sposoby dejstvija*, Bulgarian *načini na glagolnoto dejstvie*). But the significance of such atelic perfectivization cannot be overemphasized: inasmuch as maximal distribution is a criterion for the grammaticalization of a given category or semantic opposition, it is only the languages with atelic perfectivizing *po-* that come close to attaining such a maximal distribution of the PERFECTIVE : IMPERFECTIVE opposition across their inventories of verbs.

At this point, I would add that the increased productivity of *iz-* as a marker of productivity in Bulgarian in contrast with Croatian is most likely connected with the fact that in Bulgarian *iz-* is also in the process of becoming, or has perhaps already become an orphan prefix due to the replacement of the preposition *iz* 'out' with the source preposition *ot* 'from' (cf. the remarks in section 2.1). Thus, the South Slavic data ultimately provide three cases of verbal prefixes becoming orphan prefixes, and in each case the semantic development is different: Bulgarian *po-* became an orphan prefix due to the subsumption of the prefix in a salient verb of motion; Slovene *s-/z-* arose as a result of the fall of the jers; Bulgarian *iz-* has become/is becoming an orphan prefix due to the semantic development of the cognate preposition.

If in conclusion we may link status as an orphan prefix to status as a grammaticalized marker of perfectivity in South Slavic—and it seems to me that we can—the process of grammaticalization involved can only be understood in a very broad sense, as a cover term for processes that produce such orphan prefixes, i.e., the severing of the semantic common denominator shared by a prefix and its cognate spatial preposition. The individual South Slavic languages have grammaticalized orphan prefixes as markers of perfectivity in different ways, and in each case the development appears to have been completely accidental, at least in the initial stages. In other words, the data presented above suggest that there is no typical path whereby a prefix becomes a *préverbe vide*, other than subsumption in individual verbs (which is eminently uninteresting, as a *préverbe vide* in terms of an aspectual system is a prefix with a high level of productivity as a perfectivizing prefix). In this regard, the facts of the grammaticalization of South Slavic perfectivizing prefixes, provide clear support for the approach to grammaticalization advocated by Campbell (2001), Joseph (2001, 2004) and Newmeyer (2001) outlined in section 1.2., i.e., that grammaticalization is not a distinct process but an epiphenomenal result of other, independent linguistic processes.

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