

The mysterious North Russian nominative singular ending *-e* and the problem of the reflex of Proto-Indo-European **-os* in Slavic

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[Note on the 2009 version. Originally *Die Welt der Slaven* 36/1-2, 1991, 271-295. Matters of layout apart, the text is identical to the printed version, but one or two obvious typos and two minor inaccuracies in the references section have been tacitly corrected, as have a few potentially confusing infelicities of punctuation or usage. A regrettable mistake in note 7 has been rectified. The page numbers of the original edition are indicated as in the following example: “the |274| neuter”, meaning that “the” is the last word on p. 273 and “neuter” the first on p. 274. However, where words were originally printed partly on one and partly on another page, page numbers have been put after them rather than in the middle, as in “solution), |278|” instead of **“solu-|278|tion),”*.]

1. Introduction¹

As is well-known, in North Russian the nominative singular of both the nominal and the pronominal masculine *o*-stems originally ended in *-e*, contrasting strikingly with the ending *-ъ* (or its later reflex: zero) found everywhere else in Slavic.² A few examples: *zamъke* ‘lock’ (birchbark letter Novgorod 247), *deševe* ‘cheap’ (id. 424), *same* ‘(him-)self’ (birchbark letter Staraja Russa 6), *keto* ‘who’ (id. 12), *vъdale* ‘give’ (*l*-participle) (birchbark letters Novgorod 238, 119, 509; parchment charter 1192).³ The ending *-e* seems to be strictly limited to the nominative singular of *o*-stems; the *o*-stem accusative singular always takes *-ъ*, as do both the nominative and the accusative of the *u*-stems; strangest of all, the ending is not attested in the *jo*-stems, which consistently take *-ъ* in both the nominative and the accusative singular, the way they do in all other Slavic dialects. For more examples and a detailed discussion of the evidence

¹ This article has benefited from written and oral comments by Rob Beekes, Henrik Birnbaum, Carl Ebeling, Frederik Kortlandt, and Jos Schaeken.

² Two practical matters: (1) for the sake of convenience the term “North Russian” is used here to refer to the early East Slavic dialect area that has recently come to be called “Severnokrivičskij” (e.g. Zaliznjak 1988: 165); (2) in the sequel the symbols *-ъ* and *-ь* will represent not only the jers in word-final position, but also their later reflexes, in particular zero.

³ Unless otherwise indicated, numbers of birchbark documents refer to the “Academy Edition”: Arcixovskij and Tixomirov (1953, Novgorod 1-10), Arcixovskij (1954, Novgorod 11-83), Arcixovskij and Borkovskij (1958a, Novgorod 84-136; 1958b, Novgorod 137-194; 1963, Novgorod 195-318), Arcixovskij (1963, Novgorod 319-405), Arcixovskij and Janin (1978, Novgorod 406-539, Staraja Russa 1-13), Janin and Zaliznjak (1986, Novgorod 540-614; Staraja Russa 14). On the parchment charter of 1192 see now the important analysis by Zaliznjak (1987).

I refer to Zaliznjak (1986a: 129-134). A convincing explanation will have to account not only for the phonetic shape of the ending, but also for its distribution.

Although it is only recently that it has become possible to formulate with some degree of precision the rules determining the distribution of the ending *-e* (thanks to the growing corpus of North Russian birchbark documents), the ending itself has been known for a very long time and has always been regarded as something of a mystery. Most of the numerous explanations that have been advanced clearly betray the desperation of the scholars involved [272] (see the startling survey by Filin 1964). Recent years have witnessed at least two new attempts:

- V. V. Ivanov (1985) interprets the ending as a reflex not of the Proto-Indo-European nominative singular **-os*, but of a non-sigmatic “absolutive” ending in **-o/-e*. I agree with Zaliznjak (1988: 170) that this idea is in two important respects unattractive. First, since from an Indo-European point of view Slavic is very homogeneous it is difficult to accept (at least without strong reasons) retention of a Proto-Indo-European form merely in order to explain a puzzling morphological feature found in a single Slavic dialect area. Second, the fact that the *jo*-stems have *-ь* (rather than **-e*) remains a mystery.
- Zaliznjak, Dybo and Nikolaev (as reported in Zaliznjak 1988: 170) posit a special Proto-Slavic Auslautgesetz to account for the ending *-e*. They assume that word-final *-os* turned into a shwa-like vowel, which subsequently merged with *-ь* everywhere in Slavic except in North Russian, where it merged with *-e* at some stage after the first palatalization of velars (cf. Nikolaev and Xelimskij 1990: 42); they further assume that word-final **-ios* yielded *-ь* everywhere (even in North Russian). Although this hypothesis does produce the attested endings, Zaliznjak clearly realizes that it is not supported by any facts other than the ones it is designed to account for.

The only explanation that has some claim to being classical is the one that was put forward more than a century ago by Sobolevskij (e.g. 1888: 137). He assumed that in North Russian the Common Slavic nominative ending **-ь* was replaced analogically with the vocative ending *-e*. Scholars have always had misgivings about the fact that the change posited by Sobolevskij is not exactly a very natural one and I find it difficult not to agree. Spread of the vocative ending to the nominative may be conceivable in the case of nouns referring to persons, but is rather difficult to credit in the case of nouns and adjectives referring to other entities, not to speak of adjectives and participles in predicative constructions (cf. Ivanov 1985: 327-328). Yet Sobolevskij’s is just about the only explanation to have found its way into introductory handbooks on Old Russian, e.g. Jakubinskij (1953: 186), Matthews (1975: 194-195). Other authors, however, follow Sobolevskij in the case of nouns only, preferring to treat the examples of *-e* in verbs (*вьdale*) as an unsolved problem (Kiparsky 1967: 40-41, 251, Isačenko 1980: 50-51, 1983: 372). Yet others leave the matter completely open (Kuznecov 1953: 122-123).

I would like to show in this article that there exists a simple morphological explanation which resembles Sobolevskij’s in only involving phonetic developments that

are independently motivated, but which differs from it in presupposing morphological processes that are natural given the system in which they must have occurred and the sociolinguistic realities that accompanied the rise of North Russian as a distinct dialect of Common Slavic. |273|

However, a preliminary issue has to be faced first. The problem of the origin of the *o*-stem nominative singular is obviously bound up with that of the reflex of Proto-Indo-European **-os* in Slavic. Apart from Zaliznjak, Dybo and Nikolaev's recent hypothesis, three basically different views of the latter problem have been current at one time or other: (1) **-os* yields *-o*; (2) **-os* yields *-ь*; (3) **-os* yields both *-o* and *-ь*, depending on circumstances. The number of different solutions is so small that it would seem to be a straightforward matter to compare the merits of each and reach some kind of conclusion, if necessary a draw. Yet as soon as one starts reading the relevant literature it turns out that there is a strange lack of consensus among investigators, apparently due much more to misunderstandings about what others are trying to say than to substantive theoretical differences that may have caused preferences to diverge in more legitimate and comprehensible fashion. For this reason it will be necessary to take a close look at the problem of the Slavic reflex of **-os* before the North Russian *-e* can be tackled with any hope of success.⁴

2. The problem of the reflex of PIE **-os* in Slavic I: Leskien

The solution that has dominated the field for the past 115 years (with a brief interruption between 1893 and 1910) was first clearly formulated by Leskien (1876: 3-5). According to Leskien, Proto-Indo-European **-os* and **-om* developed into *-o* and *-ь* respectively, yielding nominative **orbo* vs. accusative **orbь*. He attributed the attested nominative singular ending *-ь* (OChSl. *rabь*) to a morphological process: the accusative ending was substituted for the nominative, in other words: the phonetically regular form **orbo* was analogically replaced with **orbь*. He argued that the *u*-stems, where *-ь* was phonetically regular in both the accusative and the nominative singular (**sūnus* and **sūnum* both > *synь*), furnished the model for the replacement. As for motivation, it was provided by the fact that the ending *-o* risked being perceived as a mark of the neuter gender: in the accusative the neuter *o*- and *s*-stems both had *-o* (*lěto*, *slovo*), whereas the masculine *o*- and *u*-stems had *-ь* (**orbь*, *synь*); hence in the accusative the endings *-o* and *-ь* signalled the |274| neuter and masculine gender respectively. In the nominative this transparent pattern was disrupted by the existence of masculine nouns with a nominative in *-o* (**orbo*). Since in the neuter the nominative and accusative are not differentiated anyhow it must have been diffi-

⁴ A comprehensive treatment of existing solutions to the problem of the reflexes of Proto-Indo-European **-os* and **-om* in Slavic would require a book. For the purposes of this article I have concentrated on two areas: (1) the major solutions that have been proposed to answer the question as to what was the Slavic reflex of **-os* and the factual issues that have determined the outcome of the debate; (2) the historical factors that may explain the widespread conviction among slavists that the reflex of **-os* is known to be *-ь*. Proposed solutions that have not gained a foothold among specialists will be briefly mentioned in the footnotes. Those readers who are not interested in all of this can skip the sections 2 through 4.

cult for speakers to come to terms with the fact that the *-o* of *lěto* signalled the neuter gender in the accusative, but not in the nominative. Given these facts, pressures favouring the elimination of the masculine ending *-o* must have been quite strong.

Like most other solutions, Leskien's hypothesis attributes the neuter *o*-stem nominative/accusative singular ending *-o* (instead of the expected ending **-ǔ*) primarily to analogical replacement of the phonetically regular ending **-ǔ* with the pronominal ending **-od* (or its reflex).⁵

The history of the reception of Leskien's view is not only instructive in itself, but also relevant today because of the way it has shaped the consciousness of modern slavists.

Initially, Leskien's hypothesis was widely accepted and Brugmann enshrined it in the first edition of the *Grundriss* (1886: 80, 1892: 532, 565-566). Nevertheless most mainstream scholars temporarily abandoned it for other solutions around the turn of the century. It is not easy to understand why this happened, especially because after 1910 Leskien's solution returned to fairly general favour. Misunderstandings about the morphological processes involved seem to have played a crucial role. It was felt that replacement of the nominative by the accusative ending, however natural a change in itself, would in this case have been impossible, first because the *u*-stems were felt to be insufficiently numerous and second because an analogical change which obliterated the distinction between nominative and accusative was felt to be incompatible with the tendency to differentiate the two cases as testified to by the (more or less contemporaneous) incipient rise of the use of the genitive as a marker of the accusative in the case of persons. The most explicit formulation of this criticism is by Meillet (1897: 109). |275|

A moment's thought suffices to show that this feeling is misguided:

- (1) Spread of *u*-stem endings is in fact quite a commonplace phenomenon. The late Common Slavic period saw the replacement of the original *o*-stem instrumental singular **-a* (still attested in *vbčera*) with *-ǔmь* or *(-o)mь* and the replacement of the *jo*-stem vocative singular **-e* with the *u*-stem ending (*końu*). Later developments along similar lines are numerous, for example the spread of the *u*-stem genitive plural ending in most Slavic languages, the locative singular in many

⁵ A minority view first expressed by Agrell (1926: 19-20) maintains that the Slavic neuter ending *-o/-e* reflects a Proto-Indo-European prototype that ended not in **-om* but in **-o*. Considering the popularity of this idea (cf. Milewski 1932: 17n., Rosenkranz 1955: 76, Mareš 1963: 55, Mažiulis 1970: 84-87, Feinberg 1978: 108, Ivanov 1985: 331) it is striking that it has never been explicitly evaluated through comparison with the merits of the traditional view, in particular in the light of the possibility that the Hittite forms always adduced as parallels (neuters in *-a*) are not old (Pedersen 1938: 21-22) and Illič-Svityč's demonstration that originally barytone neuters have become masculine in Slavic, whereas originally oxytone neuters have remained neuter (1963: 131-133 = 1979: 114-116). Yet another view holds that the final **-m* of the inherited ending **-om* was analogically eliminated at an early stage under the influence of declension types in which the neuter nominative/accusative singular did not end in *-m* (Szober 1927: 570). The point is, I think, irrelevant to the problem at hand. On the idea that the phonetic reflex of **-om* was *-o* (rather than *-ǔ*, as is usually assumed) see note 7.

Slavic languages (most spectacularly in Serbo-Croat), the genitive singular almost everywhere, the dative singular in Czech, Polish and various other languages, etc. These examples show that given sufficient motivation, it was perfectly possible for *u*-stem endings to spread to the *o*-stems. So the idea that in the case of the nominative singular, spread of the *u*-stem ending would for some reason have been impossible is not cogent until the motivation for the change is shown to have been insufficiently strong. Curiously enough, the motivation for the replacement (so carefully argued by Leskien) was not brought into the discussion at all. Meillet argues as if Leskien thought the change was motivated by a tendency to eliminate the distinction between nominative and accusative.

- (2) The reintroduction of a formal difference between nominative and accusative by extending the use of the genitive involves a small subset of the *o*-stems. It is inadmissible to adduce the development as if it is relevant to the *o*-stems as a whole. It should not be forgotten that in the earliest attested forms of Slavic the genitive/accusative is only in its initial stages.
- (3) The later history of the masculine plural in Russian suggests that given the presence of suitable morphological pressures a tendency to replace the nominative with the accusative ending can coexist with a tendency to reintroduce a differentiation between nominative and accusative by extending the use of the genitive as a case for the direct object.

It has to be concluded that the argumentation used to refute Leskien's approach was largely beside the point, first because it failed to take into account well-attested parallels and, second, because the motivation for the replacement of the masculine nominative singular ending was consistently ignored.

All this does not diminish the fact that between 1893 and 1910 Leskien's hypothesis was temporarily abandoned for other views, at least by those scholars whose opinion mattered most. It was only in work by less fashionable investigators that Leskien's hypothesis lived on (e.g. Gebauer 1894: 20, 56, 320, 1896: 7, Bogorodickij 1895: 226 and later publications, Mikkola 1896, 1908: 10-11, Brückner 1907: 113).
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3. The problem of the reflex of PIE **-os* in Slavic II: 1893-1910

In 1893 Hirt argued that both **-os* and **-om* yield *-o* when stressed and *-ъ* when unstressed (1893: 345). This idea was enthusiastically received, despite the fact that some important flaws (in particular its poor fit with the observable distributions) were soon pointed out by Jagić (1893) and Mikkola (1896). But Pedersen characterized it as "überzeugend" (1895: 73-74) and it was accepted with insignificant modifications by Meillet (1897: 102-111) and Vondrák (1898: 332-336). In the second edition of the first volume of the *Grundriss* Brugmann changed over from Leskien's to Hirt's explanation (Brugmann and Delbrück 1897: 255).

In 1904 Berneker published an article in which he sharply criticized Hirt's solution and drew attention to an explanation which had been widespread in pre-Neogrammarian days (e.g. Schleicher 1852: 39, 1871: 127) and which had been most explicitly

formulated in print by Fortunatov in a footnote (1895: 266n = 1897: 164n). According to the Fortunatov hypothesis, *-os developed regularly into -ъ (as did *-om), so that the o-stem nominative singular ending -ъ is phonetically regular. Berneker's article swept Hirt's view away and put Fortunatov's in its place. Brugmann hastily switched over in the final stages of his *Kurze vergleichende Grammatik* (1904): on page 279 he follows Hirt, but in a footnote on page 376 he jumps onto the Fortunatov bandwagon. Pedersen started talking about the "definitive victory" of Fortunatov's idea, dismissing Leskien's solution without bothering to give arguments (1905: 321). Vondrák also changed over to Fortunatov in his influential *Vergleichende slavische Grammatik* (1906: 89, 1908: 2), the first comprehensive historical grammar of Slavic to incorporate the results of the Neogrammarian paradigm shift.⁶ |277|

At this point the story has to be interrupted in order to introduce a problem that concerns the *jo*-stems and that has to be faced within any approach that operates with raising or reduction of *o to ɔ in at least one of the relevant endings (-os and/or -om), in other words: within both major approaches to the problem of the reflex of *-os in Slavic (Leskien's and Fortunatov's).⁷ At first sight it seems reasonable to identify the raising with the rather similar development that must have taken place in the accusative plural *-ons > -y. Unfortunately this identification gives rise to a chronological dilemma. Since the outcome of the latter development is not found in the *jo*-stems (which have a mid vowel: -ɛ or -ě depending on dialect), it seems obvious that the raising cannot have taken place before the "Umlaut" of *-jons to *-jens caused by the preceding *j. If the chronology implied by the accusative plural is also to be assumed

⁶ Hirt's solution has hardly been heard of since. Rozwadowski's (1914-1915: 18) call to return to it fell on deaf ears. A limited version of it (applicable to *-om only, with *-os being treated according to Leskien) was revived by Illič-Svityč in order to account for the transition of barytone neuters to the masculine gender (cf. note 5, see for discussion Ebeling 1967: 581). A refinement of Hirt's hypothesis devised by Agrell (1913: 52-53) makes the reflexes of *-os and *-om dependent not only on the place of the stress, but also on the prosodic properties of the immediately preceding syllable (if stressed); Agrell's idea was generally rejected. Meillet responded to Berneker's onslaught by replacing Hirt's hypothesis with one of his own making (1916, 1922), according to which both *-os and *-om yielded phonetically both -o and -ъ, depending on different degrees of sentence stress. This produced doublets of the type *vьlko/vьlkъ, *igo/igъ, *slovo/slovъ (1916: 288). Subsequently the masculine and neuter o-stems generalized -ъ and -o respectively under the influence of the pronominal flexion, where *-od had developed into non-alternating -o, whereas the masculine endings *-os and *-om had both yielded alternating -ъ/-o, as a consequence of which -ъ and -o were reinterpreted as marks of the masculine and neuter gender respectively. Meillet's solution has never caught on. Mańczak (1977: 240-242) maintains that both *-os and *-om are reflected as -o or -ъ depending on the relative frequency of the formations involved.

⁷ The idea that not only *-os, but also *-om yielded *-o in Slavic enjoys some popularity among investigators who reject as a matter of principle the assumption of phonetic developments limited to word-final position (e.g. Lüdtkke 1966: 132-140, Georgiev 1969: 16, 37-40, 53-54, cf. also Panzer 1978: 86, who however allows for the possibility of Leskien's solution). [The original text wrongly lists Orr 1986: 174 here, too.] This view leads to serious morphological problems which have not so far been properly faced by its adherents, e.g. that of explaining how it was possible that the masculine o-stems adopted the u-stem endings in the nominative and accusative singular and why the thematic aorist has -ъ (rather than *-o) in the first person singular (Gălăbov 1978: 8; on the aorist cf. more explicitly Andersen 1971: 952).

for **-om*, then what we expect in the accusative singular of the *jo*-stems is ***-e*: ***końe*. This does not resemble anything in the attested facts. In the course of time three ways of dealing with this problem have been put forward:

- (a) The *jo*-stem endings did in fact develop exactly as theory demands (e.g. accusative singular **końe*), but were subsequently removed by morphological processes (e.g. Ferrell 1965, in particular p. 107).
- (b) The *jo*-stem endings do not reflect **-ios* and **-iom*, but **-is* and **-im*, both of which yield phonetically *-b* in accordance with the attested forms (e.g. Leskien 1891: 327-328).
- (c) The raising in **-om* > *-b* has to be separated from that in **-ons* and to be assigned to a stage preceding the Umlaut.

In view of the evidently complex consequences of (a) and (b), solution (c) has to be considered very seriously. In a visionary, but brief and inconclusive article on the subject published in 1907 Leskien drew attention to some other facts that indicate an early date for the raising in **-om*. His reasoning, which he puts before the reader in the form of rhetorical questions about the Fortunatov hypothesis (although they are equally relevant to his own solution), [278] can be reconstructed as follows: the thematic secondary ending of the third person plural **-ont* is reflected as *-q* in Slavic, e.g. *mogq* ‘they could’. The difference between this ending and **-om* (> *-b*) can hardly be due to anything else than the final **-t*, which therefore must have been present as a conditioning factor until after the raising of *o* in **-om*. Since the loss of final dental stops was a development Slavic shared with Baltic, a choice has to be made between two alternatives, both of which contain unpleasant elements: either the raising of *o* testified to by the Slavic reflex *-b* is Balto-Slavic (in which case the instances of raising exemplified by *-om* > *-b* and *-ons* > *-y* have to be recognized as two distinct processes), or the loss of final dental stops in Slavic postdates the Umlaut (in which case Slavic and Baltic have to be separated from an early date on).

Mainly in view of all unsolved difficulties connected with the development of the *jo*-stems (difficulties caused by an understandable unwillingness to separate the raising in *-om* from that in *-ons*), Leskien himself concluded that both his own and Fortunatov’s solutions were fundamentally flawed and that a better solution would have to await the establishment of relative chronologies, “weil das hier vorliegende Problem zu denen gehört, die ohne eine sichere relative Zeitbestimmung der lautlichen Entwicklungsstadien überhaupt nicht zu lösen sind” (1907: 337).

However, it was not long before Hujer (1910: 12-36), in the most detailed analysis devoted to the problem to date, showed that even if one pays no attention to relative chronology, a rational comparison of the merits of Leskien’s and Fortunatov’s solutions automatically leads to a preference for the former. Following Jagić (1906: 118-119) and Leskien (1907: 335) he showed in considerable detail that Fortunatov’s hypothesis is ad hoc in the sense that there are no plausible supporting instances of **-os* yielding **-b*, whereas Leskien’s hypothesis is supported by instances of *-o* < **-os* in

the *s*-stems (*slovo* < *-os) and adverbs like *tamo* (cf. epic Greek *tēmos* ‘then, thereupon’), which had been drawn into the discussion by Kozlovskij (1887).⁸ He further argued that if *-os yielded -b (as maintained by Fortunatov), it is difficult to devise a plausible analogy to account for the attested final -o in the *s*-stems (*slovo*).

Largely under the impact of Hujer’s evaluation, Leskien’s view emerged in 1910 from the underground existence it had led for seventeen years. Vondrák shifted over to it in the second edition of his *Altkirchenslavische Grammatik* (1912: 104, with discussion) and stuck to it in the second edition of his *Vergleichende slavische Grammatik* (1924: 107). |279|

4. The problem of the reflex of PIE *-os in Slavic III: 1910-1990

Since 1910 hardly even a single scholar who has explicitly discussed the problem has come down on the side of Fortunatov. Milewski (1932: 16-18) limits himself to merely repeating comparisons Hujer had shown to be inconclusive, a fact of which he must have been aware (he quotes Hujer abundantly elsewhere), but which he does not acknowledge. Ferrell (1965: 97-101), looking for independent evidence for Fortunatov’s *-os > -b, argues that the dative plural ending -mъ reflects earlier *-mos, but his attempt to show that Old Lithuanian -mus has to be derived from *-mos fails not only because it is a clear instance of *obscurum per obscurius* but also because there are no corroborating instances of the developments he has to posit. Gălăbov (1973: 6-9) and Čekman (1979: 136-137) understandably prefer Fortunatov over the Lüdtke/Georgiev hypothesis that both *-os and *-om yielded -o (see note 7), but seem to be unaware of the very existence of Leskien’s view.

It is hardly an exaggeration to state that as far as investigators actively interested in the phonological history of Proto-Slavic are concerned, the Fortunatov hypothesis has been dead for more than three quarters of a century. Yet even today non-specialists tend to assume unthinkingly that it embodies established truth. It has most often been adopted without even a semblance of discussion or argumentation, in all likelihood because the scholars involved have not been aware of the fact that there is a problem. This has happened particularly often in introductory handbooks (where Fortunatov’s view has evident didactic advantages) and in publications not specifically dealing with the Slavic treatment of *-os, for instance other endings, typological issues, or Baltic. I have found the following examples: Porzeziński (1914: 98), Šaxmatov (1915: 59), Lehr-Splawiński (1923: 19-20, 38), Ułaszyn (1928), Seliščev (1951: 230; 1952: 90), Kondrašov (1956: 37 and later editions), Kuznecov (1958/1961, section 10), Schröpfer (1962: 360), Stang (1966: 186), Kazlauskas (1970: 88-89), Žuravlev (1974: 38), Prinz (1977: 267), Bartula (1981: 131, 142). It is characteristic of the fate of the Fortunatov hypothesis that Mareš still followed it in the earliest version of his reconstruction of Proto-Slavic phonological history (1956: 467, 494 = 1965: 40, 82), only to change his mind later in favour of Leskien’s solution. Even in-

⁸ Meillet’s rejection of a link between Slavic *tamo* and Greek *tēmos* is built on his misleadingly glossing the Greek word as ‘autant que’ (1934: 469).

troductory handbooks that presuppose the correctness of the Fortunatov view nowadays tend to add that the matter is controversial, e.g. Rosenkranz (1955: 66), Bräuer (1969: 21), cf. already Leskien (1919: 49-50).

It turns out to be the case that since 1910 it has most often been the Leskien view that has been adopted by investigators, a trend that has been increasing in recent decades. Examples: Endzelins (1911: 155v.), Vondrák (1912: 104, 1924: 107), Mikko-la (1913 by implication, 1950: 29), van Wijk |280| (1915: 39n.), Il'inskij (1916: 178, 181), Nahtigal (1938: 51-52), Kořínek (1948: 66-67), Koschmieder (1956), Bernštejn (1961: 184-185), Mareš (1962: 20, 1963: 52-53, 65, 1969: 113), Illič-Svityč (1963: 132n = 1979: 166; in the case of *-om Illič-Svityč opts for Hirt's solution, cf. note 6), Shevelov (1964: 157), Arumaa (1964: 113-114, 1985: 130-132), Schelesniker (1964: 52-56), Rudnyc'kyj (1966), Kiparsky (1967: 25-26), Ivšić (1970: 185), Stieber (1971: 22), Gasparov and Sigalov (1974: 288), Kortlandt (1975: 46, 1983: 181-182), Aitzetmüller (1978: 76), Feinberg (1978: 113), Holzer (1980: 9, 12), Moszyński (1984: 224).

The reason why Leskien's view has tended to become more popular is not difficult to understand: developments since Hujer have strengthened the case for it in several respects. Most importantly, it has become clear that the -o reconstructed by Leskien in the *o*-stem nominative singular has actually survived in several types of cases:

The endings -o and -e in names like Old Polish *Boglo*, Russian *Sadko*, Serbo-Croat *Ivo*, *Dimitrije* and similar forms in the majority of Slavic languages can be interpreted as direct continuations of the Proto-Slavic nominative singular endings *-o and *-e (Rudnyc'kyj 1966: 657-658).

The suffix found in Serbo-Croat names like *Miloš* and similar forms in Czech, Sorbian, Polish, and Russian can be explained as the original nominative singular of the definite form of the adjective (< **milos-jъs*, corresponding to modern Lithuanian *mielàsis*), on which subsequently a new declension was built (Torbiörnsson 1925: 277-279). Shevelov (1964: 228) rejects Torbiörnsson's identification because "adding a suffix to an ending" would have been an unheard-of development. This rests on a strange misunderstanding: it is not being assumed that a suffix was added to an ending, but that a flexional ending was reinterpreted as a derivational suffix. It is important to realize that the shape of the ending *-ošъ was unlike anything else in the nominal declensions and, more importantly, that the ending *-o/-e was reinterpreted in a rather similar way, either as part of a suffix (-lo, -ko etc.) or as a component of derivational relationships usually involving truncation (*Ivan* > *Ivo*). Reinterpretation of the original nominative endings -oš and -o/-e in terms of derivational processes would have been a natural development at a stage when *-o had been replaced by -ъ in all nouns except names, where Leskien's original motivation for replacement was absent for semantic reasons.

The instances of *o* found in Old Church Slavonic examples like *rodosъ*, *narodotъ*, *to estъ* 'he is', *ko-žъdo*, which are usually attributed to vocalization of the jer, may very well reflect original *o, in particular because the same *o* is attested in Slavic dialects where vocalisation of a jer never yields *o*, e.g. modern East Bulgarian -ot, *toj*, *tozi* 'he', old or dialectal Polish *kóždy* (Rozwadowski 1914-1915: 14-18; on *rodosъ* etc. cf. al-

ready Mikkola 1896: 352). In order to make a more convincing case it would however be necessary for [281] the facts adduced by Rozwadowski (apart from *koždo*, the existence of which seems to be beyond doubt) to be put more firmly within the context of what is now known about Old Church Slavonic and East Bulgarian respectively.

Against the background of the evidence of retained *-o* (*Sadko*, *Miloš*, *koždo*), any solution that does not produce *-o* in the *o*-stem nominative singular is clearly at a disadvantage. Despite the importance of this point, it has never been systematically discussed from the point of view of the Fortunatov hypothesis.⁹

As for the problem of the *jo*-stems, later research has confirmed that the instances of raising in **-om* > *-ь* and **-ons* > *-y* in fact belong to two widely different chronological layers. If (as Leskien saw) the former development presupposes the persistence of the final **-t* in **-ont* and if the loss of final **-t* was Balto-Slavic, it has to be concluded that the raising in **-om* was Balto-Slavic, too. Several types of further evidence indicating a Balto-Slavic date have been brought to light by Kortlandt (1978: 287-290).

If **-os* yields *-o* in Slavic, it stands to reason that **-ios* yields **-e*. This is in itself an important result, which offers a basis for an explanation of yet another problem that is implicit in the declensions of Slavic: the fact that the *jo*-stems have a borrowed vocative singular ending: attested *koňu* (with the ending of the *u*-stems) instead of phonetically regular ***koňe* < **-ie*. It is an important advantage of all approaches to the Slavic reflex of **-os* that yield *-e* in the nominative singular of the *jo*-stems that they provide a motivation for the borrowing of the *u*-stem ending, which now can be understood as a reaction against the otherwise unusual coalescence of nominative and vocative singular (both **koňe*). Within the framework of approaches that do not yield a *jo*-stem nominative singular in **-e* the attested vocative ending remains essentially mysterious.

Thus, the best evidence available at present supports Leskien's view in the sense that the phonetically regular reflexes of Proto-Indo-European **-os*, **-om*, **-ios* and **-iom* in Slavic are *-o*, *-ь*, *-e* and *-ь* respectively. [282]

5. The Zaliznjak/Dybo/Nikolaev hypothesis as a solution of the problem of the Slavic reflex of **-os*

As we have seen, Zaliznjak, Dybo and Nikolaev assume that **-os* yielded a unique shwa-like segment which subsequently merged with (weak) *-ь* in most of Slavic and

⁹ Among solutions that have never found favor with historical linguists I have found two examples of this: (a) Vaillant (1950: 54, 210, 217, 1958: 29) assumes that at the Balto-Slavic stage the *o*-stem nominative singular ending **-os* was subject to "une réduction spéciale de la finale", which yielded a unique phoneme limited to this ending, which merged with Slavic *-ь* < **-u(s/m)* at a late stage in the development of Slavic; (b) Lunt (1981: 17, 22, 45, 67, 83) assumes that the ending **-os* was analogically replaced with **-ox* after the *ruki* rule had yielded word-final **-x* in **-is/*-us* > **-ix/*-ux*; subsequently **o* was raised when followed by word-final **-x*, but not when followed by **-s*, which correctly produces, say, OChSl. *rabь* and *slovo*. On Zaliznjak/Dybo/Nikolaev see below, section 5.

with *-e* in North Russian. If this really proves to be the only way to account for the nominative in *-e* it will have to be considered very seriously, but its unattractive features will somehow have to be faced, for example:

- (1) If Proto-Indo-European **-os* regularly yielded *-e* in North Russian, we expect the ending **-e* not only in the nominative singular of the *o*-stems, but also in the nominative/accusative singular of the neuter *s*-stems. In other words: the Zaliznjak/Dybo/Nikolaev hypothesis produces North Russian **slove*, contrasting both with **slovъ* according to Fortunatov and with the attested form *slovo* according to Leskien. On the basis of this, one expects to find in North Russian two things: first, attestations of *-e* in the *s*-stem nominative/accusative singular and, second, a clear-cut distinction between *s*-stems and neuter *o*-stems: if the *s*-stem nominative/accusative singular really ended in **-e*, the two paradigms did not have even a single ending in common, a fact that would seem to have prevented adoption of the *o*-stem pattern by *s*-stems as attested elsewhere in Slavic. Neither expectation is borne out by the evidence. The expected independence of the *s*-stems is not attested in North Russian. Indeed, in discussing the position of the *s*-stems Zaliznjak himself stresses that “kak raz v vostočnoslavjanskoj zone oni črezvyčajno rano perešli v tip *o*-neutra” (1988: 170). As for the ending itself, attestations of *-e* seem to be completely absent. The birchbark material, such as it is, has only *-o*. Not counting the transparently Church Slavonic form *drěvo* in 246 (1025-1096), the only early examples are three attestations of *slovo* (with *-o*) in 531 (1196-1213). All other examples are late, cf. the nominative/accusative singular in *-o* in *dělo* (317, 1340-1369), *slovo* (331, 1268-1299; 244, 1409-1422; 243, 1422-1429), also the fixed formula *slovo dobro* (122, 1409-1422; 14, 1422-1429), *telo* (521, 14th/15th century), *uxo* (25, 1396-1409). All attestations of the oblique cases follow the pattern of the *o*-stems: Gpl. *dělvъ* (43, 1396-1409), Isg. *nobomъ* ‘nebom’ (10, 1396-1409, a text with Church Slavonic colouring; the *o* for expected **e* in the first syllable of *nobomъ* is paralleled by *k nomu* ‘k nemu’ in the same text and similar forms elsewhere, see Zaliznjak 1986a: 126-127), Gsg. *slova* (345, 1340-1369; 183, 1369-1382; 17, 1409-1422), *solova* ‘slova’ (497, 1340-1385 twice; the insertion of *o* in the initial cluster is in accordance with the spelling system used by the writer of the text, cf. also *pokolono*, *ko Gorigori*, *ko sestori*, *osotavimo*), Dsg. *slovu* (101, 1340-1369), Gsg. *tela* (521, 14th/15th century). Compare also *liče* ‘lice’ (536, 2d half of 14th century; |283| the *č* for expected *c* is a normal expression of Novgorod *cokanie*), Isg. *liceme* (Vitebsk 1, 13th/14th century).¹⁰
- (2) The Zaliznjak/Dybo/Nikolaev hypothesis complicates the system of Common Slavic Auslautgesetze by introducing a difference between the treatment of **-os* (> shwa) and that of **-ios* (> *-b*). The difficulties this gives rise to are not limited to the fact that the posited development of **-os* to shwa is ad hoc; Zaliznjak is quite aware of that (and is even prepared to accept it). However, the assumption that

¹⁰ The attestations are given here on the basis of Zaliznjak’s dictionary (1986b), the dates on the basis of Janin’s list (1986).

*-ios yielded -ь is ad hoc, too, and we shall have to start worrying about when the implied raising (or reduction) of *e to *ь took place and why. So in actual fact not one, but two otherwise unsupported Proto-Slavic Auslautgesetze are posited to account for a single ending attested in a single dialect.

- (3) The Zaliznjak/Dybo/Nikolaev hypothesis does not explain the *o* of examples like *Sadko, Miloš, každo*.
- (4) The Zaliznjak/Dybo/Nikolaev hypothesis does not explain why the *jo*-stems have a borrowed ending in the vocative singular.

These are not the only difficulties the Zaliznjak/Dybo/Nikolaev hypothesis gives rise to. Some are not all that serious in themselves, but cannot help adding to the discomfort of the onlookers, for instance the way the phonological history of late Proto-Slavic is made more complicated by the introduction of an additional segment into an already overloaded vowel system. A solution that would avoid all these problems would surely be preferable.

6. Phonetically regular endings

As I see it, Leskien's view according to which the phonetically regular reflex of Proto-Indo-European *-os is -o, points the way towards a natural explanation of the North Russian ending -e. The morphological pressures that were crucial in bringing about the attested distributions involve at least the nominative, accusative and vocative singular of the masculine and neuter *o*- and *jo*-stems, and the masculine *u*- and *i*-stems, so these endings will have to be looked at somewhat closer. At the Proto-Indo-European stage, they had the shapes shown in System A: 284

SYSTEM A. Proto-Indo-European

| | Nsg. | Vsg. | Asg. |
|------------------------|------|--------|------|
| masc. <i>o</i> -stems | -os | -e | -om |
| neut. <i>o</i> -stems | -om | (-om) | -om |
| masc. <i>jo</i> -stems | -ios | -ie | -iom |
| neut. <i>jo</i> -stems | -iom | (-iom) | -iom |
| <i>u</i> -stems | -us | -eu | -um |
| <i>i</i> -stems | -is | -ei | -im |

At an early stage oxytone neuters replaced the ending *-om (or its reflex) with the pronominal ending *-od or its later reflex *-o. Barytone neuters did not share this development, their nominative/accusative singular ending *-om yielded regularly -ь and they eventually became masculine. This is Ebeling's modification of Illič-Svityč's explanation of the fact that barytone neuters have become masculine (Ebeling 1967: 581; on the motivation for this change see also Kortlandt 1975: 44-46). Henceforth the neuter *o*-stems were characterized by the nominative/accusative singular ending -o(d). (See further note 5.)

Starting from Leskien’s hypothesis that Proto-Indo-European **-os* yielded *-o* and assuming that the other sound laws operated without being interfered with by morphological processes, the endings we expect at a stage which phonetically corresponds with Old Church Slavonic are the following (apart from the problems surrounding the exact reflex of **-os* and **-ios* the sound laws involved are not controversial; the diacritic “ denotes the effects of earlier *j* on preceding consonants):

SYSTEM B. Reconstructed Late Common Slavic

| | Nsg. | Vsg. | Asg. |
|------------------------|------|-------|------|
| masc. <i>o</i> -stems | *-o | -e | -ъ |
| neut. <i>o</i> -stems | -o | (-o) | -o |
| masc. <i>jo</i> -stems | *-“e | *-“e | -“ъ |
| neut. <i>jo</i> -stems | -“e | (-“e) | -“e |
| <i>u</i> -stems | -ъ | *-“u | -ъ |
| <i>i</i> -stems | -ъ | -i | -ъ |

The asterisks mark the four points where this reconstruction clashes with what we find in the attested material:

- (1) In the masculine *o*-stems the nominative singular is of course *-e* in North Russian and *-ъ* elsewhere, rather than **-o* as expected on the basis of Leskien’s view of word-final **-os*. However, we have seen that the ending is attested in several types of cases, in particular in the pronoun *koždo* and in [285] names of the types *Sadko* and *Miloš*, where it has been reinterpreted in terms of derivational processes (see further the discussion in section 4).
- (2) In the nominative singular of the masculine *jo*-stems we find everywhere *-ъ* rather than **-e* as expected, even in North Russian. The analogy that was responsible for the substitution is similar to the one that caused the *o*-stem nominative *-o* to be replaced with *-ъ* (this time with the *i*-stems providing the model). The nominative singular in *-e* found in such cases as Serbo-Croat *Dimitrije* can be interpreted as a continuation of the original ending along the same lines as the *-o* of *Sadko*.
- (3) In the masculine *jo*-stems the vocative singular is *-“u* rather than **-e*. This ending is relevant for the problem of the North Russian nominative singular *-e* not only because it provides evidence for Leskien’s view of the reflex of **-os* in Slavic (see section 4, end), but also because it shows that at a certain stage the *o*- and *jo*-stems were subject to different analogical pressures, despite their common origin.
- (4) In the *u*-stems the vocative singular is *-u*, which is another way of saying that the alternations caused by the reconstructed ending **-“u* have been eliminated: *synu* has replaced ***synú*. If one prefers to reconstruct Proto-Indo-European **-ou* instead of **-eu* the point does not arise.

7. The spread of the ending *-e*

We now turn to North Russian. Examination of System B suggests that the independence of the ending *-o* was also threatened along lines different from those invoked by Leskien to explain the substitution of *-o* by *-ъ* in the *o*-stem nominative singular in non-North Russian Slavic. In the masculine *jo*-stems the nominative and vocative singular had merged phonetically in **-e* (**końe* = **końe* as opposed to **orbo* vs. **orbe* in the *o*-stems). It is evident that this merger must have exerted some pressure favouring substitution of the *o*-stem nominative singular ending *-o* with *-e*.

Most of Slavic resisted the pressure. Indeed, we have seen (section 4) that the analogical introduction of the *u*-stem vocative singular in the *jo*-stems (with *końu* replacing **końe*) can be understood as a response to the anomalous state of affairs whereby in the *jo*-stems the vocative was not formally differentiated from the nominative. North Russian, however, carried through the expected simplification: it replaced the regular *o*-stem nominative singular ending *-o* with *-e*, which was at the same time the *o*-stem vocative singular and the *jo*-stem nominative and vocative. I think this is the origin of the North Russian *o*-stem nominative singular in *-e*. In order to see why the Novgorod/Pskov area went a different way from the remainder of Slavic, it is essential to be aware of the sociolinguistic background of the rise of North Russian. |286|

It is not open to doubt that prior to the arrival of Slavic the Novgorod/Pskov area spoke Finnic and that the period of Slavic-Finnic bilingualism which must of necessity have accompanied the replacement of Finnic with Slavic has left numerous traces in the structure of North Russian.¹¹ Now the Finnic case system, though quite elaborate, lacks a formal distinction between nominative and vocative. Hence from the standpoint of speakers of Finnic struggling to speak Slavic, the (to them) non-functional difference between Nsg. **robo* and Vsg. **robe* must have been difficult to assimilate, all the more so because in the closely related *jo*-stems **końe* functioned as both nominative and vocative. The North Russian substitution of **-o* with *-e*, a fairly natural development on the basis of System B, but resisted by most speakers of Slavic, finds its explanation in the absence of a distinction between nominative and vocative in the Finnic case system.

It is evident that the substitution cannot have taken place prior to the loss of word-final *-s*, which caused the nominative and vocative singular to coalesce in the *jo*-stems and which also caused the merger of the masculine nominative singular with the neuter nominative/accusative in both *o*- and *jo*-stems. On the other hand it has to be assumed that the substitution took place before the Common Slavic analogical elimination of the *jo*-stem vocative in **-e* (**końe* > *końu*) reached North Russian. Indeed, the chances are that this innovation, which eliminated the only major declension type with identical nominative and vocative singular, and which enhanced the distance between the *o*- and *jo*-stem paradigms, was never adopted by North Russian, because it no longer made morphological sense. Instead the presence of two paradigms that

¹¹ There seems to exist no generally accepted English equivalent of *Ostseefinnisch*, *Itämerensuomalainen*, *Pribaltijsko-finskij*. In the sequel the term “Finnic” will be used.

lacked a formal distinction between nominative and vocative singular cannot but have contributed to the loss of the vocative elsewhere in the system.

8. The elimination of the *jo*-stem nominative singular ending *-e*

This brings us to the question why the attested Novgorod *jo*-stem nominative singular is *-ь* rather than *-e*. I think the answer is unexpectedly simple: it can be assumed that North Russian eliminated this ending at a somewhat later stage jointly with all other Slavic dialects, ultimately under the influence of the analogical pressures outlined by Leskien. At first sight this may seem inconsistent, or even perverse, but it turns out to be a natural development as soon as one looks more closely at what was going on.

In the final phase of Common Slavic the *jo*- and *o*-stems had evolved into almost completely separate paradigms. The fact that elsewhere in Slavic the [287] *jo*-stems took over the *u*-stem vocative singular, whereas nothing comparable happened in the *o*-stems shows that the two declension patterns could be subject to different morphological pressures. Moreover, it has to be realized that the substitution of *-e* for **-o* in the nominative singular of the *o*-stems, in addition to removing the (to speakers of Finnic) exotic formal distinction between vocative and nominative, had also put an end to the possibility of perceiving the masculine nominative singular ending as a marker of the neuter gender, because the corresponding neuter ending was of course *-o* (**orbe* with *-e* as opposed to *lěto* with *-o*). In the case of the *jo*-stems, on the other hand, Leskien's structural motivation for replacement of the phonetically regular nominative singular ending was still present, because, after all, neuter *jo*-stems have a nominative/accusative singular in *-e*.

As for the sociolinguistic background, it stands to reason that North Russian, as soon as it had arisen as a distinct entity owing to the not-quite-perfect substitution of Slavic for Finnic in the general area of Pskov and Novgorod, rejoined Common Slavic in the sense that it started sharing innovations with its southern neighbours as far as the (changed) system permitted. So when all of Slavic started to eliminate the masculine *o*-stem nominative singular endings *-o* and *-e*, North Russian just went along with the neighbouring dialects in eliminating the *jo*-stem ending, but retained the new *o*-stem ending *-e*, first because the structural motivation for replacement was absent and second because, whereas the elimination of the *jo*-stem ending in North Russian was a matter of imitating exactly what speakers of neighbouring dialects were doing, in the case of the *o*-stem ending North Russian differed from its neighbours because in their case the shape of the *o*-stem ending (*-e*) was not the same as the one found everywhere else (*-o*).

As elsewhere in Slavic the elimination of the ending did not take place in all personal names, where confusion with the neuter gender was excluded for semantic reasons (Zaliznjak 1986a: 133-134).

9. Old Novgorod: the attested facts

The Old Novgorod system as we find it attested on birchbark is the following (on the basis of Zaliznjak 1986a: 141, "tablica 6"):

SYSTEM C. Attested endings in Novgorod birchbark documents

| | Nsg. | Asg. | |
|------------------------|------|------|-----|
| masc. <i>o</i> -stems | -e | -ѣ | |
| neut. <i>o</i> -stems | -o | -o | |
| masc. <i>jo</i> -stems | -ѣ | -ѣ | |
| neut. <i>jo</i> -stems | -e | -e | 288 |
| <i>u</i> -stems | -ѣ | -ѣ | |
| <i>i</i> -stems | -ѣ | -ѣ | |

From a synchronic point of view this way of presenting the facts is of course misleading, first because a classification of declension patterns in terms of Proto-Indo-European stem classes is synchronically inappropriate for modern Slavic languages and, second, because the graphic system effectively conceals some of the principal Old Russian innovations, such as the rise of a distinction between “hard” and “soft” consonants and the retraction of **-e* (> *-o*, with softening, if possible, of a preceding consonant) in word-final position. The following is probably closer to linguistic reality:

SYSTEM D. Old Novgorod

| | Nsg. | Asg. |
|--|-----------|-------------------------|
| masc. nouns with stem ending in hard consonant | -’o | shwa/zero ¹² |
| masc. nouns with stem ending in soft consonant | shwa/zero | shwa/zero |
| neut. nouns | -o | -o |

The label “soft consonant” subsumes the “historically soft consonants” *š*, *ž*, *č/c* (the product of the North Russian merger of *č* and *c*), and *j*. The neuter nominative/accusative ending *-o* was merely added to the stem, whereas the masculine nominative/vocative ending *-o* (< **-e*) softened a preceding hard consonant, as did several other endings in the same paradigm: the nominative plural *-i* and both locatives: singular *-ě* and plural *-ѣхѣ* (note the symmetries). In three types of cases the choice between the two nominative endings was not automatically determined by the final stem consonant:

- The “soft” ending (shwa/zero) is also characteristic of a small group of nouns with a stem ending in a hard consonant, in particular *synѣ*, *polѣ*, *solodѣ* (Zaliznjak o.c.: 133) and probably a few others that happen not (yet) to have surfaced on birchbark (candidates: *darѣ*, *medѣ*, *rjadѣ*). These are the historical *u*-stems (which accordingly seem to have retained a measure of independence in North Russian).
- The “soft” ending (shwa/zero) is further favoured by words borrowed from the language of the church, in particular *bogѣ*, and optionally by any word, preferably

¹² Here “shwa” or “zero” should be read depending on whether one is thinking of the period before or after the loss of word-final jers.

if the style of an utterance renders the use of forms of strictly local colouring inappropriate (Zaliznjak o.c.: 131-132, see in particular “tablica 5”, which shows how with the passage of time the “soft” pattern gained ground even in Novgorod birchbark documents). |289|

- On the other hand the “hard” ending is found (optionally) in names with stems ending in *-ij-* and **-c-*, and, judging by a few late attestations, perhaps also in the word *knjaz* ‘prince’ (Zaliznjak o.c.: 133-134).

10. Conclusions: on analogical loss of analogical models

An objection an imaginary opponent might level at the above account runs along the following lines: the rise of the *o*-stem ending *-e* is attributed in essence to analogical spread of the *jo*-stem ending; yet at a later stage the very same *jo*-stem ending *-e* which at one time was capable of such impressive expansion is itself removed from its home base by a morphological substitution; since this chain of proposed developments lacks consistency it is unlikely to be a factually correct description of what actually happened.

This objection rests on the hidden assumption that speakers in whose language an innovation is going on have some kind of knowledge about what changes were carried out by earlier generations of speakers (knowledge that is essential for them if they are to maintain consistency over longer periods of time). A moment’s thought suffices to show that the assumption is fallacious: speakers have no direct access to the knowledge of their ancestors. They cannot know linguistic facts they do not know and the past exists for them only to the extent that it is reflected in the facts of the present.

In order to appreciate the reconstruction given above in the light of this objection it is essential to realize that the two stages it consists of were sociolinguistically very different.

The first stage presupposes the large-scale bilingualism that must have been a dominant feature of the period when speakers of Finnic were changing over to Slavic in the Novgorod/Pskov area. At that stage, changes were motivated by the fact that the speakers of Finnic were not in every single case able to adopt faultlessly those features of contemporary Slavic that did not correspond to their own linguistic reality. The spread of the ending *-e* was a logical consequence of the fact that Finnic lacked a formal distinction between nominative and vocative.

The second stage presupposes a community consisting of essentially monolingual native speakers of the type of Slavic that was produced by the Finnic-Slavic bilingualism characteristic of the first stage. Slavic had become the first or only language of these people and they may not even have been aware of the fact that their ancestors had spoken a different language. In their case, change was motivated primarily by internal factors and by contacts with speakers of less eccentric varieties of Slavic living more to the south along the navigable rivers on which the economy of the area came to depend more and more. The elimination of the *jo*-stem ending *-e* in North Russian was motivated internally by the same analogical |290| pressures that favoured the substitution of *-o* and *-e* with *-ъ* and *-ь* elsewhere in Slavic and externally

by daily contacts along the river road with speakers in whose Slavic dialects the very same substitution was being carried out at the very same time.

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