

# ON FINAL SYLLABLES IN SLAVIC

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There is no evidence for timbre differences which are due to stress or tone in early Slavic. The concord between Slavic, Lithuanian and Prussian shows that the raising of PIE *\*-om* to *\*-um* must be dated to the Balto-Slavic period. There is no reason to assume tonal distinctions for Proto-Germanic.

1. Since the publication of my article on the Slavic nasal vowels (1979d), where I presented a detailed chronology of the prehistoric development of the phonological system, two major articles on final syllables in Slavic have come to my attention, viz. Holzer's (1980) and Jasanoff's (1982). Here I shall clarify my position in relation to the views which are expressed in these papers. I shall first discuss the points treated by Jasanoff, adopting his order of presentation and taking Schmalstieg's comments on them into consideration, and then add a few words on other points where I find myself in disagreement with Holzer or others.

It may be expedient to let a short but fundamental observation precede the treatment of the separate developments. As Schmalstieg puts it in his comment: "It is, of course, always easier to presuppose a maximum number of contrasts in one's proto-forms and then remove these contrasts by the application of ordered rules." I still see no evidence for a divergent development of acute and circumflex vowels, upon which Jasanoff heavily relies, in either Slavic or Germanic. Nor do I see any reason to assume a divergent development of stressed and unstressed syllables, as Schmalstieg does, for the earlier stages of Slavic. As long as we can account for the attested developments in a satisfactory way without reference to prosodic features in explaining the timbre distinctions and without reference to timbre distinctions in explaining the prosodic features, I think that we should do so. Of course, prosodic features may yield quantitative differences, which may in their turn yield timbre differences, but the connection is hardly ever a direct one.

The discussion between Jasanoff and Schmalstieg is strongly reminiscent of the one between Streitberg (1892) and Hirt (1893), the former author insisting upon tonal distinctions and the latter upon the place of the stress for the explanation of

timbre distinctions in final syllables. The views of these authors held the ground for over half a century in a variety of modifications. Since those days our knowledge of the Slavic accentual systems has grown enormously, especially as a result of the study of dialects and accentuated manuscripts. The main breakthrough in our understanding of the Proto-Slavic prosodic system is marked by the work of Stang (1957), Dybo (1962, 1968), and Illič-Svityč (1963). Unfortunately, the work of these authors has not adequately been studied by a large number of scholars, partly because the subject is an extremely complex one, and partly because most of the fundamental publications were not available in a western language until quite recently. Dybo's work has now been made accessible by Garde (1976, cf. Kortlandt 1978a), and Illič-Svityč's book has been translated (1979, cf. Kortlandt 1980).

According to Jasanoff, circumflex  $*\bar{o}$  was raised to  $*\bar{u}$  in early Slavic final syllables, and this rule explains four case endings: nom.sg.  $-y < *-\bar{o}$ , gen.pl.  $-\bar{z} < *-\bar{o}m$ , inst.pl.  $-y < *-\bar{o}is$ , and dat.sg.  $-u < *-\bar{o}i$ , e.g. *kamy*, *rabъ*, *raby*, *rabu*. The same view was put forward almost 80 years earlier by Holger Pedersen in an article which Jasanoff has evidently not seen (1905: 325f). Pedersen connected this development not only with the raising of  $*\bar{e}$  to  $*\bar{i}$  in *mati*, as Jasanoff does and Streitberg had done earlier (1892: 295), but also with the one in nom.pl. *rabi* and impv.sg. *nesi*, both with  $i < *\bar{e} < *oi$ . Though Jasanoff mentions the twofold reflex of  $*oi$  in his last footnote, he does not seem to have considered this possibility in any detail.

2. For the *n*-stems Jasanoff reconstructs nom.sg.  $*-\bar{o}$  rather than  $*-\bar{o}n$  or  $*-\bar{o}ns$ . Unlike Holzer (1980: 10), I agree that the assumption of a sigmatic nom.sg. ending must be rejected. Jasanoff's objections against  $*-\bar{o}n$  cannot be maintained, however. The 1sg. present ending  $-\rho$  must not be derived from  $*-\bar{o}m$  because there is simply no evidence for such a reconstruction. The addition of the nasal to the thematic ending  $*-\bar{o}$  can be dated between stages 1 and 3 of my chronology (1979d: 264) if it occurred at all. Elsewhere I have argued that the rise of the ending must rather be connected with the decline of the perfect (1979a: 57). The gen.pl. ending  $-\bar{z}$  cannot, of course, be used as evidence against the derivation of  $-y$  from  $*-\bar{o}n$ : indeed, the latter correspondence proves that the gen.pl. ending cannot be derived from  $*-\bar{o}m$ . Jasanoff's morphological argument does not hold either because it is not clear that the final nasal is due to

restoration. I prefer the view that the original PIE ending  $*-\bar{o}n$  was preserved in Greek, Germanic, Balto-Slavic, Armenian, and Tocharian, and that the loss of the final  $*n$  is a secondary development of Indo-Iranian and Italo-Celtic. If the final nasal was restored in the former languages, it must have been a dialectal Indo-European development already. There is no reason to reject the view that Lith.  $-u\tilde{o}$  developed phonetically from PIE  $*-\bar{o}n$ .

The derivation of the nom.sg. ending  $-y$  from  $*-\bar{o}$  leads into difficulties because  $*-\bar{o}$  is reflected as  $-a$  in the dual ending of the  $o$ -stems. Pedersen and Jasanoff follow Streitberg in attributing the divergent development to an original tonal difference. This creates a difficulty with the gen.sg. ending of the  $o$ -stems  $-a < *-\bar{o}d$ , cf. Latin abl.sg.  $-\bar{o}d$ , where Lithuanian points to a circumflex tone and which Jasanoff does not mention. As Hirt observed (1893: 363), the difficulty can be solved in two ways: either one posits a Balto-Slavic ending  $*-\bar{a}d$  in spite of the Latin evidence, or one assumes that the final  $*d$  had not yet been lost at the time of the Slavic raising. I agree with Hirt that  $*-d$  was lost in Balto-Slavic times, so that the latter assumption cannot be maintained. Pedersen posited an original ending  $*-\bar{a}d$  precisely because of the absence of raising to  $*\bar{u}$  in Slavic and concluded that Latin  $-\bar{o}d$  was of analogical origin (1905: 404). Since Pedersen's theory of an alternation between  $*\bar{e}$  and  $*\bar{a}$  can no longer be maintained, the reason for assuming an analogical development in Latin has disappeared. We must therefore identify the Latin and Balto-Slavic endings as PIE  $*-\bar{o}d$  and regard this ending as a genuine counter-example against the raising of circumflex  $*-\bar{o}$  to  $*-\bar{u}$  in early Slavic. The Lith. ending  $-o$  is the phonetic reflex of unstressed  $*-\bar{o}$  (cf. Kortlandt 1977: 323).

Jasanoff assumes that the IE daughter languages inherited both acute and circumflex  $*-\bar{o}$  in the nom.sg. of the  $n$ -stems, the circumflex ending arising in cases where a suffix  $*(H)on-$  was applied to thematic adjectives, e.g. OCS. *graždane*  $< *ghordh\bar{i}o-$ , and that the circumflex ending was generalized in Balto-Slavic. These assumptions exemplify the principle mentioned above that it is "always easier to presuppose a maximum number of contrasts in one's proto-forms and then remove these contrasts by the application of ordered rules." They also exemplify the dangers inherent in deductive reasoning on the basis of theoretical constructs as well as the necessity of taking the prosodic

evidence of the Slavic material into account. It is evident from the short medial vowel of SCr. *gràdanin* that the suffix was \*-*Hn-*, not \*-*Hon-*, so that a generalization of the circumflex tone in the nom.sg. ending would be most unlikely. Actually, the circumflex tone is the phonetic reflex of a PIE long vowel. Since the discovery of Winter's law there can hardly be any doubt that the Balto-Slavic acute tone was a glottalic feature which continued the PIE laryngeals and the glottalization of the PIE "voiced" obstruents, while the Balto-Slavic circumflex continued early contractions and lengthened grade (cf. Kortlandt 1977: 319-325 and 1978c: 277-280). This conception also eliminates the objection raised by Schmalstieg and others against the assumption of tonal distinctions in unstressed syllables. It is evident that such a distinction must have existed in Lithuanian before the operation of de Saussure's law. If the acute "tone" was a glottalic feature, comparable to the Danish *stød* or the Latvian broken tone, its presence or absence did not necessarily imply any specific pitch movements. Incidentally, the Old Saxon nom.sg. form *gumo*, which Jasanoff adduces as evidence for a circumflex ending in Germanic, is easily explained as an innovation on the basis of the other case forms (cf. Lane 1963: 161). There is no reason to assume tonal distinctions for Proto-Germanic.

According to Schmalstieg, final unstressed \*-*ē* and \*-*ō* were raised to \*-*ī* and \*-*ū* in early Slavic. His rule is disproved by the dual ending -*a*, which was always unstressed in early Slavic, as it was in Lithuanian before de Saussure's law operated, and also by the gen.sg. ending -*a*. End-stressed forms like Russ. *dvorá* originated from Dybo's law, which was posterior to the rise of -*y* < \*-*ū* (cf. Kortlandt 1978c: 276f and 1979d: 263).

3. Elsewhere I have argued that the original form of the gen. pl. ending was \*-*om*, not only in the consonant stems, but also in the *o-* and *ā-*stems, and that this form, like the Italo-Celtic gen.sg. in -*ī*, did not originally belong to the flexional paradigm (1978b: 294). The ending which is attested in Gr. -*ōn* and Skt. -*ām* arose from the secondary introduction of -*o-* and -*aH-* before the earlier ending in the paradigms of the *o-* and *ā-*stems. The original situation has been preserved in Latin *mēī, nostrum*, ON. *vár*, Skt. *asmákam*. In the nominal flexion, the ending \*-*om* was certainly preserved in Italic, Celtic, Germanic, Baltic, and Slavic, and probably in Tocharian, Armenian, Iranian, and

Anatolian. The only language which offers no trace of the short ending is Greek.

The Old Irish gen.pl. *fer n-* < \**wirom* points to a short ending. I agree with Jasanoff that the long ending of acc.sg. *tuaiθ n-* < \**tōθen* < \**teutām* was shortened in Old Irish, but I think that this shortening cannot be separated from the one in dat.sg. *túaiθ* < \**tōθi* < \**teutāi* and *fiur* < \**wiru* < \**wirōi*. The latter example shows that the shortening was posterior to the rising of \**ō* to \**ū* in final syllables (cf. Kortlandt 1979b: 39f). If the gen.pl. ending had been \**-ōm*, the resulting form would have been \*\**fiur n-*, not *fer n-*, so that the Old Irish evidence is unambiguous. So is the Umbrian evidence, for which I refer to Meillet (1922: 259). The Latin and Oscan evidence is ambiguous.

Of course, Jasanoff's apodictic statement that "the Gothic gen.pl. in *-e* cannot continue IE \**-eḡom*" does not invalidate the argumentation which I have given for that reconstruction (1978b, sections 22-26). Let me repeat the basic points here:

(1) Phonetically, the lowering of *ei/i:/* to *ē* in \**-eiom* can be compared with the lowering of \**ē* to *ai/ε:/* in *saian* and *waian*.

(2) The distribution of masc. *-ē* and fem. *-ō* is apparently recent and suggests that the ending *-ē* originated from one of the flexion classes where it characterizes both masc. and fem. nouns.

(3) The ending *-ē* can hardly be analogical in the *i*-stems because there is no formative element before the ending in *gastē*, *mahtē*.

(4) Germanic inherited from Proto-Indo-European two types of *i*-flexion, a proterodynamic paradigm with a gen.pl. in \**-eiom* and a hysterodynamic paradigm with a gen.pl. in \**-iom*, the latter of which was preserved in Gothic *prijē* (with secondary *-ē*).

(5) The absence of the ending *-ē* from the West and North Germanic languages is explained by the generalization of the hysterodynamic flexion type which can be inferred from the correspondence of Gothic barytona with oxytona in the other languages (Verner alternation).

(6) In the Old Norse paradigm of the *n*-stems, the gen.pl. ending *-a* < \**-an* < \**-anan* may have provided the model for the analogical introduction of the nom. and acc.pl. endings of the *o*-stems into the paradigm of the *n*-stems in view of the fact

that the two flexion classes have no singular case forms in common.

(7) The distribution of  $-\bar{e}$  and  $-\bar{o}$  in Gothic shows that the origin of the latter ending must be sought in the  $\bar{a}$ -stems.

(8) Phonetically, the ending  $-\bar{o}$  can be derived from  $*-\bar{o}an$   $< *-\bar{a}-om$ , cf. *saisō* 'I sowed'  $< *sesōa$ , not from PIE  $*-\bar{o}m$ , which would undoubtedly have merged with  $*-\bar{o}n$  and  $*-\bar{a}m$ . There is no reason to assume tonal distinctions for Proto-Germanic. Here I shall list my rules for the phonetic development of final syllables in Germanic without going into a discussion of the details:

PGe.	Go.	ON.	OE.	OS.	OHG.
$*-\bar{o}$	-a	zero	-(u)	-(u)	-(u)
$*-\bar{o}n$	-a	zero	-e	-a	-a
$*-\bar{o}ns$	<sup>t</sup> -ōs	-ar	-e	-a	-ā
$*-\bar{o}s$	-ōs	-ar	-a	-o	-o
$*-\bar{o}t$	-ō	-a	-a	-o	-o
$*-\bar{o}a(n)$	-ō	-a	-a	-o	-o

Apart from the compensatory lengthening in Old High German, Proto-Germanic  $*-\bar{o}ns$  merged with  $*-\bar{o}s$  in the north and the east, and with  $*-\bar{o}n$  in the west. This divergence must evidently be connected with the different chronology of the rise of nasal vowels on the one hand and the loss of  $*-s$  on the other. For all forms which do not conform to the above rules both a model and a motivation for analogic replacement can be found, as was partly seen by Lane (1963: 159-164). The OHG. nom.acc.pl. forms *taga* and *gebā* represent the PGe. accusatives in  $*-ans$ ,  $*-\bar{o}ns$ . The gen.sg. ending of the  $\bar{a}$ -stems was replaced with the acc.sg. ending in West Germanic because it became homophonous with the gen.pl. ending when  $*-s$  was lost. The difference between  $*-\bar{o}$  and  $*-\bar{o}t$  is paralleled by the difference between Gothic  $-a < *-\bar{a}i$  in the middle and  $-\bar{a}i < *-\bar{a}it$  in the optative. I do not share the usual view that the Old Norse acc.sg. ending of the  $\bar{a}$ -stems was replaced with the nom.sg. ending, e.g. *giōf*  $< *gebō$ , *\*gebōn*. I fail to see the motivation for such a replacement because the nom. and acc.sg. forms are distinct in the other flexion classes of this language. The fem. acc.sg. form of the adjective *spaka* has a pronominal ending. Like the introduction of the pronominal ending in the neuter form *spakt*,

this is an innovation of Old Norse. The nonzero nom.sg. ending of ON. *hane* was taken from the *ion*-stems (cf. Lid 1952). The reconstructed gen.pl. ending *\*-ōan* was evidently a Proto-Germanic innovation of the same type as Gr. *-ōn*. It replaced earlier *\*-an* < PIE *\*-om*, which was preserved in Celtic, Baltic, and Slavic.

The main difficulty with the use of Baltic material in comparative grammar is that its evaluation requires a correct assessment of the synchronic linguistic relationships. Even a superficial comparison of the morphological systems of Lithuanian and Slavic shows that the former language is much more regular than the latter. This is undoubtedly the result of extensive analogical levelling, which has in a series of instances produced a deceptive resemblance between modern forms and their reconstructed origins. An example is the substitution of *s* for *š* after *i*, *u*, *r*, *k*, which has led a number of scholars to believe that the dialectal Indo-European retraction of *\*s* in this environment did not affect Baltic to the same extent as Indo-Iranian and Slavic, in spite of the presence of such obvious relics as *aušrà*, *jūšė*, *vėtušas*, *māšas*, *riėšutas*, suffix *-iėkas*. Another example is the acc.sg. ending of the *o*-stems *-q*, which has generally been equated with the PIE ending *\*-om*, in spite of the Prussian counter-evidence. The ending *-q* can easily have arisen on the analogy of the *i*- and *u*-stems, e.g. *vagiš*, *sūnūs*, acc.sg. *vāgi*, *sūny*. A third example is Jasanoff's derivation of the Latvian gen. pl. form *tūo* from *\*tōm*. This form is obviously a Latvian innovation on the basis of the regular correspondence between short and long endings, as Schmalstieg has pointed out in his comment. The original form, which was preserved in OPr. *steison* and Slavic *těxǫ*, would have yielded *\*\*tiesu* in Latvian, cf. Skt. *tēsām*, ON. *peira*. As was pointed out above, the hypothesis that the Lithuanian gen. pl. ending *-y* can be derived from *\*-ōm* is contradicted by the development of *akmuō* < *\*-ōn*.

In his comment on Jasanoff's paper Schmalstieg continues his crusade against the use of Old Prussian evidence for comparative purposes. Leaving his suspicions about ivory towers and divine intervention aside, we are still faced with the observation that "the bulk of variants in the text are linguistically significant," as Levin puts it in his important article on the orthography of the Enchiridion (1976: 17), where he points out that the odds against a random distribution of spellings are astronomical, even

if it is not always possible to offer a satisfactory linguistic explanation for the variants (cf. also Hermann 1916 and 1952). The refutation of this point of view requires a serious analysis of the material rather than the use of strong language. In my article on the gen.pl. ending I have shown that OPr. *-on* is the phonetic reflex of PIE *\*-om* and *\*-um* and that the ending *-an* is due to restoration on the basis of the other case forms (1978b, sections 15-19). The original reflex has been preserved in pronominal endings, adverbialized forms, numerals, and uninflected predicative participles, while the stem vowel was restored in nominal paradigms. The Old Prussian evidence is unambiguous because PIE *\*-ōm* would have yielded *-an* after dentals, *-on* after *r*, and *-un* after velars and labials (cf. de Saussure 1892: 82). Like Berneker (1896: 149), I see no evidence against the merger of *\*ā* and *\*ō* in Prussian. Note that *rāms* 'sittig' is no counter-example to my rule because it contains a short *a* (cf. Būga 1922: 79fn).

The concord between Slavic, Lithuanian, and Prussian shows that the raising of PIE *\*-om* to *\*-um* must be dated to the Balto-Slavic period. This analysis is supported by the internal chronological evidence. First, the raising was anterior to the barytonesis of the IE oxytone neuters, which was a result of the late Balto-Slavic retraction of the stress from final open syllables. Second, it was anterior to the loss of final *\*t/d* because the 3pl. ending of the Slavic thematic aorist *-ŏ* < *\*-ont* remained distinct from the 1sg. ending *-ŏ* < *\*-om*. The latter change was in its turn anterior both to the late Balto-Slavic retraction of the stress and to Winter's law. These arguments were put forward in my article on the gen.pl. ending already (1978b: 287). There is no evidence for Jasanoff's ad hoc rule that *\*-ūn* was shortened to *\*\*-un* in early Slavic.

Schmalstieg's hypothesis that all non-front vowels merged before word-final nasals and that the choice between *-ŏ* and *-ŏ* is determined by the position of the stress is not supported by the facts. The endings which appear in 1sg. *vedŏ* and acc.sg. *roko* were never stressed in early Slavic, while the pre-forms of gen.pl. *gradŏ* and 1sg. *věsŏ* were stressed on the final syllable. The stress patterns were redistributed as a result of Dybo's law, which was posterior to the rise of the new timbre distinctions. Another piece of evidence is the isolated pronoun OCS. *azb*, SCr. *ja* < *\*eǵHóm*, cf. Skt. *ahám*.

4. Unlike Holzer and Schmalstieg, I agree with Pedersen,

Meillet, and Jasanoff that the dat.sg. ending *-u* and the inst.pl. ending *-y* must be derived from PIE *\*-ōi* and *\*-ōis*, respectively. Any other hypothesis must be rejected for morphological reasons, as Meillet has made quite clear (1914: 3 and 5). The palatal element was apparently assimilated to the rounding of the preceding *\*ō*, as Pedersen proposed (1905: 324f). I have dated this assimilation between stages 4 and 5 of my chronology (1979d: 265). If it had been earlier, the ending *\*-ōis* would not have been subject to the early raising at stage 4. If it had been later, the ending *\*-ōi* would have been subject to the delabialization at stage 5. The difference between dat.sg. *-u* and inst.pl. *-y* must evidently be attributed to the earlier presence of *\*-s* in the latter ending. I have therefore identified the raising before *\*-s* in this ending with the one in other endings, e.g. 2sg. impv. *nesi* < *\*-ois*, acc.pl. *ženy* < *\*-ons* < *\*-āns*, cf. loc.sg. *rabě* < *\*-oi*, acc.sg. *ženŏ* < *\*-ām* (ibidem). Jasanoff's identification of the raising in *-u* < *\*-ōi* with the one in *-y* < *\*-ōis* forces him to postpone the loss of the palatal element in the former ending to the period after the delabialization of the latter to *-y* (my stage 12). He does not seem to be aware of the difficulty which this creates in connection with his shortening of *\*-ūn* to *\*-un* before the delabialization of the latter to *-ŭ*. Since the delabialization was posterior to the rise of prothetic *v-* (my stage 11), which was apparently posterior to the monophthongization of diphthongs (my stage 8), it means that *\*-ūi* must have been the only Slavic diphthong during a considerable period of time. I prefer the view that *\*-ōi* became *\*-ōu* at an early stage and subsequently underwent the monophthongization. Moreover, I find it difficult to separate the raising in *\*-ōis* from the one in *\*-ois* and *\*-ons*. Note that Jasanoff's alternative treatment in footnote 14 renders the raising in *\*-ōi* superfluous and necessitates a second raising in *\*-ōis* in order to avoid the merger with the *u*-diphthongs.

Summarizing, I conclude that the cases where the alleged raising of circumflex *\*ō* to *\*ū* is supposed to have operated either can or must be explained differently. The additional hypotheses which Jasanoff's approach requires outnumber the case endings to be explained.

5. Streitberg already proposed to compare the raising of *\*ō* to *\*ū* in *kamy* with the raising of *\*ē* to *\*ī* in *mati* (1892: 295). Jasanoff adduces *tŏdě*, which can be compared with Gothic *þandē*, as a counter-example against the hypothesis that the

raising can be attributed to the circumflex tone of the ending. His own solution is that the raising of  $*\bar{e}$  to  $*\bar{i}$  was limited to the position after a soft consonant. This yields the correct ending in *dbšti*, but not in *mati*, which must in that case have adopted the ending of the former word. The ad hoc character of this reasoning is obvious. As an alternative, Jasanoff suggests in his last footnote that the ending of *mati* may have arisen phonetically in the same way as the ones of nom.pl. *rabi* and impv.sg. *nesi*. Since he does not account for the latter endings, however, it is clear that his rule does not explain anything at all.

In my view, the ending of *mati* is the phonetic reflex of the PIE ending  $*\bar{e}r$  which is attested in Germanic, Greek, Armenian, Tocharian, and Italo-Celtic. The secondary loss of the final  $*r$  in Baltic does not seem to pose a serious problem. There is no reason to assume a sigmatic nom.sg. ending, as Holzer does (1980: 11). Jasanoff's objection that, from a typological point of view,  $r$  characteristically lowers a preceding vowel does not hold precisely because the preceding vowel was long in  $*\bar{e}r$ . A typological parallel can be found in modern Dutch, where the vowel of *meer* 'more' differs from the one of *meest* 'most' not only in the lowering vs. raising toward the end of its articulation, but also in the raising at the beginning (e.g., Cohen et al. 1961: 14). As a consequence of this raising, the distinction between *mier* 'ant' and *meer* is extremely difficult for a foreigner.

The identification of the raising in  $*\bar{e}r$  with the raising in  $*\bar{o}n$  is not contradicted by the absence of raising in nouns like *imę*, for which Holzer and Jasanoff reconstruct  $*\bar{e}n$ , because there is no evidence for a long vowel in this category. Here I find myself in partial agreement with Schmalstieg, assuming that Slavic introduced an ending  $*-en$  into the nom.acc.sg. of the neuter on the basis of the other case forms. The ending replaced earlier  $*-in < *n$  after a consonant, which must be reconstructed for Proto-Indo-European, cf. Skt. *nāma*, Gr. *ónoma*. The postulation of  $*\bar{e}n$  on the basis of the accentuation, which is often found in the older literature (e.g., Vaillant 1950: 214 and 1958: 205), can no longer be maintained (cf. Stang 1957: 91f). Schmalstieg's view that  $-ę$  represents stressed  $*-en$  cannot be correct because the ending was never stressed in early Slavic. End-stressed forms like  $*plemę$  arose as a result of Dybo's law. There is no evidence for a long vowel in acc. *mę*, *tę*, which represent the PIE acc. forms  $*H_1me$ ,  $*tue$ , which received a secondary  $*-m$  in Slavic (cf. Meillet 1964: 334).

There is no reason to assume that the loc.sg. ending of the consonant stems *-e* must be derived from *\*-en*. I think that it represents the gen.sg. ending *\*-es*, which was adopted on the analogy of the *i*- and *u*-stems after the loss of final *\*s* because the original ending *\*-i* had merged with the masc. and fem. acc.sg. ending. Note that the gen.sg. ending of the *i*-stems had originally the same accent (Stang 1957: 87f) and quantity as the loc.sg. ending, but not necessarily the same as the dat.sg. and acc.pl. endings. The 3pl. ending of the sigmatic aorist *-ę* represents the full grade athematic ending *\*-ent*, which replaced the original zero grade ending *\*-nt* when the latter merged with the 1sg. ending *\*-m* as a result of the loss of *\*-t*.

Hirt derived OCS. *bratъ* and *sestra* from earlier *\*brātōr* and *\*sesō*, respectively (1893: 360 and 363). I agree with Pedersen (1905: 322) that such a reconstruction is ad hoc and that *bratъ* is a recent development of *bratrъ*, which has been preserved in Sorbian, Czech, Old Slovene (FrFr II 21), and Old Bulgarian. Holzer now derives the different endings of *mati* and *sestra* from a distinction between sigmatic and asigmatic nom. sg. forms. (1980: 11). He assumes *-i* < *\*-br* < *\*-ers* in the former word and *-ra* < *\*-ār* < *\*-ōr* in the latter. This reconstruction is not only purely arbitrary, but also leads into major phonetic difficulties. The raising of *\*-er* to *\*-br* is phonetically improbable, as Jasanoff has pointed out. The assumption of a metathesis in word-final position is both arbitrary and phonetically improbable. The words *bratrъ* and *sestra* are apparently the result of a simple restructuring on the basis of the oblique stem forms *\*brātr-* and *\*sesr-*.

6. In Holzer's conception, *\*oi* and *\*ai* yielded *i* in final syllables, whereas final *\*-āi* and *\*-ōi* became *-ě*. This rule offers a pleasant solution for nom.pl. *rabi*, impv.sg. *nesi*, and dat.sg. *ženě*, but is contradicted by loc.sg. *rabě*, nom.acc.du. *lětě*, 1sg. *vědě*, and dat.sg. *rabu*. In order to overcome the difficulties Holzer assumes that the loc.sg. ending *-ě* represents the original dat.sg. ending *\*-ōi*, that the neuter dual ending *-ě* arose from a contamination with the corresponding masc. ending *\*-ō*, that *vědě* represents an original subjunctive form in *\*-āi* rather than the perfect form in *\*-a* with an added *\*-i*, and that the dat.sg. ending *-u* of the *o*-stems may represent the loc.sg. ending of the *u*-stems. But the dative is a dative and the locative is a locative in Slavic (cf. Meillet 1914: 3), and there is no trace of an old perfect subjunctive in any Indo-European language. I think that

loc.sg. *rabě*, dual *lětě*, and 1sg. *vědě* show conclusively that *\*-oi* and *\*-ai* became *-ě* in Slavic. The 2sg. imperative *nesi* shows that *\*-ois* yielded *-i*, which was apparently adopted in the 3sg. form. The raising in *-i* < *\*-ois* as compared with *-ě* < *\*-oi* has a parallel in the raising in inst.pl. *-y* < *\*-ūs* < *\*-ōis* as compared with dat. sg. *-u* < *\*-ō* < *\*-ōi*. I therefore conclude that nom.pl. *rabi* must also be derived from *\*-ois*, where *\*-s* was taken from the other flexion classes. The clitic dat. forms *mi* and *ti* must be derived from *\*mei* and *\*tei*, which have been preserved in the Old Latin gen. forms *mīs* and *tīs*, which received an additional *-s*, and in Lat. *mihī*, *tibī* and OPr. *mennei*, *tebbei*, where the stem contains the same extension as in Skt. *máhyam*, *túbhyam*, Av. gen. *mana*. The Greek enclitics *moi* and *toi* represent a locative ending *\*-oi* which is also found in ORuss. *měně*, *tobě*, cf. Skt. *tvé* < *\*tuoi*, *asmé*, *yusmé*. Since *\*-eis* and *\*-ois* merged phonetically in Slavic, the gen.sg. ending of the *i*-stems is ambiguous, as it is in Baltić and Indo-Iranian. The vowel of the OCS. 2sg. present ending *-si/-ši* continues the PIE thematic ending *\*-eH<sub>1</sub>i* (cf. Kortlandt 1979a: 58).

Elsewhere I have argued that PIE *\*eu* yielded *\*iou* before a consonant in Balto-Slavic (1979c: 57, cf. already Pedersen 1935), and that this development was posterior to the labialization of *\*eu* to *\*ou* before a vowel, e.g. in dat.sg. *synovi* < *\*euei* and nom.pl. *synove* < *\*eues*. Note that Lith. *naũjas* and *kraũjas* are no counter-examples to this rule because *\*u* was consonantal and *\*i* was vocalic in the pre-forms *\*néuios* and *\*kreuióm*, cf. Skt. *návyah*, *kravyám*, OIr. *nuè* < *\*nowios*. The expected voc.sg. ending of the *u*-stems in Slavic is *-ju* < *\*-eu*, and this is indeed the attested ending of the *jo*-stems. The palatalizing effect of this ending on the preceding consonant accounts for its absence from the hard *o*-stems. There is no reason to look for original *ju*-stems (Meillet 1918), for which there is no evidence. In the paradigm of the *u*-stems, the hard consonant was evidently restored on the basis of the other case forms in both Lith. *sūnaũ* and Slavic *synu*. I also assume restoration in loc.sg. *synu*, where OHG. *suniu* and Runic *magiu* point to *\*-ēu*, but not in gen.sg. *synu*, Lith. *sūnaũs*, where OHG. *fridō* and Runic *magōR* point to *\*-ous*. For the *i*-stems I reconstruct gen.sg. *\*-ois* on the basis of Gothic *-ais* and ON. *-ar*. The hypothesis that the *o*-vocalism of the gen.sg. ending distinguished it from all other case forms accounts for the otherwise mysterious substitution of *\*-ous* for *\*-ois* in the gen.sg. ending of the *i*-stems

in Old Irish, where *\*eu* became *\*ou* at an early stage. The ending of Oscan *aeteis* and its West Germanic equivalent show the vocalism of the other case endings.

Holzer assumes that *\*-nts* merged with *\*-ns* in Slavic at an early stage (1980: 14). This assumption leads him to reconstruct *\*-eints* for the masc. nom.sg. ending of the active present participle of the *i*-flexion and to posit a rule for the reduction of the triphthong to *\*-ents* before other developments took place. The same rule accounts for the reduction of the alleged 3pl. optative ending *\*-oint* to *\*-ont* in *bqđq* and *bq*. Unfortunately, there is no evidence either for the reconstructions *\*-eints* and *\*-oint* or for the rule which eliminates the medial element of a triphthong. Moreover, a pre-form *\*-eints* does not yield the attested North Slavic endings according to Holzer's rules, as the author admits himself (1980: 22f). In order to remedy the difficulties, Holzer introduces the additional hypotheses that *\*-onts* and *\*-ons* yielded North Slavic *-a* under the stress, but *-y* in unstressed syllables, that *-y* replaced *-a* in the acc.pl. ending of the *o*-stems, the nom.acc.pl. and gen.sg. endings of the *ā*-stems, and the pronominal acc. forms *ny* and *vy*, i.e. in all cases where he posits a pre-form in *\*-ons* or *\*-āns*, that *-a* replaced *-y* in the unstressed participial ending *\*-onts*, that *-a* replaced *\*\*-ě* from *\*-ioints* and *\*-eints* in Russian and Czech, and that the Old Polish ending *-ę* represents the neuter form *\*-ont* or *\*-eint* which was adopted in the masc. paradigm. This complicated chain of analogic changes is not only inherently improbable, but impossible because the ending *\*-onts* was apparently never stressed before the rise of the new timbre distinctions. If we take the evidence at face value, we have to conclude that *\*-ons* yielded *-y* while *\*-onts* yielded *-a* in North Slavic, just as the former yielded *-ān* and the latter *-an* in Sanskrit. Holzer's suggestion that the original acc.pl. ending was preserved in Ru. *gorodá*, *lesá*, Cz. *lesa*, *hora* cannot be maintained because the ending was never stressed before Dybo's law operated. The ending was undoubtedly borrowed from the neuter paradigm, as is generally assumed. In Russian it did not become common until the 18th century. There is no evidence for timbre differences which are due to stress or tone in early Slavic.

Since I have dealt with the history of the nasal vowels in detail elsewhere (1979d), I shall limit myself here to giving a chronological survey of the main developments. For a discussion of the separate stages I refer to the article mentioned here.

For typographical reasons I write the nasal vowels as the corresponding oral vowels followed by *N*.

PIE	<i>-im</i>	<i>-um</i>	<i>-om</i>	<i>-iom</i>	<i>-eH<sub>2</sub>m</i>	<i>-ieH<sub>2</sub>m</i>	<i>-iont</i>	<i>-ent</i>
Late BS.	<i>-im</i>	<i>-um</i>	<i>-um</i>	<i>-ium</i>	<i>-ām</i>	<i>-iām</i>	<i>-on</i>	<i>-en</i>
S. 1	<i>-im</i>	<i>-um</i>	<i>-um</i>	<i>-jum</i>	<i>-am</i>	<i>-jam</i>	<i>-on</i>	<i>-en</i>
S. 2	<i>-in</i>	<i>-un</i>	<i>-un</i>	<i>-jun</i>	<i>-on</i>	<i>-jon</i>	<i>-on</i>	<i>-en</i>
S. 3	<i>-i</i>	<i>-u</i>	<i>-u</i>	<i>-ju</i>	<i>-oN</i>	<i>-joN</i>	<i>-oN</i>	<i>-eN</i>
S. 12	<i>-i</i>	<i>-y</i>	<i>-y</i>	<i>-ji</i>	<i>-oN</i>	<i>-joN</i>	<i>-oN</i>	<i>-eN</i>
S. 14	<i>-b</i>	<i>-ḃ</i>	<i>-ḃ</i>	<i>-jb</i>	<i>-oN</i>	<i>-joN</i>	<i>-oN</i>	<i>-eN</i>
S. 15	<i>-b</i>	<i>-ḃ</i>	<i>-ḃ</i>	<i>-b</i>	<i>-oN</i>	<i>-oN</i>	<i>-oN</i>	<i>-aN</i>
OCS	<i>-b</i>	<i>-ḃ</i>	<i>-ḃ</i>	<i>-b</i>	<i>-oN</i>	<i>-joN</i>	<i>-oN</i>	<i>-eN</i>
ORu.	<i>-b</i>	<i>-ḃ</i>	<i>-ḃ</i>	<i>-b</i>	<i>-u</i>	<i>-ju</i>	<i>-u</i>	<i>-ja</i>

PIE	<i>-ins</i>	<i>-uns</i>	<i>-ons</i>	<i>-ions</i>	<i>-eH<sub>2</sub>ns</i>	<i>-onts</i>	<i>-ionts</i>	
Late BS.	<i>-ins</i>	<i>-uns</i>	<i>-ons</i>	<i>-ions</i>	<i>-aHns</i>	<i>-onts</i>	<i>-ionts</i>	<i>-ints</i>
S. 1	<i>-ins</i>	<i>-uns</i>	<i>-ons</i>	<i>-jons</i>	<i>-ans</i>	<i>-onts</i>	<i>-jonts</i>	<i>-ints</i>
S. 2	<i>-ins</i>	<i>-uns</i>	<i>-ons</i>	<i>-jons</i>	<i>-ons</i>	<i>-onts</i>	<i>-jonts</i>	<i>-ints</i>
S. 3	<i>-īs</i>	<i>-ūs</i>	<i>-oNs</i>	<i>-joNs</i>	<i>-oNs</i>	<i>-onts</i>	<i>-jonts</i>	<i>-ints</i>
S. 4	<i>-īs</i>	<i>-ūs</i>	<i>-uNs</i>	<i>-juNs</i>	<i>-uNs</i>	<i>-onts</i>	<i>-jonts</i>	<i>-ints</i>
S. 5	<i>-īs'</i>	<i>-ūs</i>	<i>-uNs</i>	<i>-juNs</i>	<i>-uNs</i>	<i>-ants</i>	<i>-jants</i>	<i>-ints</i>
S. 8	<i>-īs</i>	<i>-ūs</i>	<i>-uNs</i>	<i>-juNs</i>	<i>-uNs</i>	<i>-aNs</i>	<i>-jaNs</i>	<i>-iNs</i>
S. 10	<i>-ī</i>	<i>-ū</i>	<i>-uN</i>	<i>-juN</i>	<i>-uN</i>	<i>-aN</i>	<i>-jaN</i>	<i>-iN</i>
S. 12	<i>-ī</i>	<i>-ȳ</i>	<i>-yN</i>	<i>-jiN</i>	<i>-yN</i>	<i>-aN</i>	<i>-jaN</i>	<i>-eN</i>
S. 13	<i>-ī</i>	<i>-ȳ</i>	<i>-ȳ</i>	<i>-jēN</i>	<i>-ȳ</i>	<i>-aN</i>	<i>-jaN</i>	<i>-eN</i>
S. 14	<i>-i</i>	<i>-y</i>	<i>-y</i>	<i>-jēN</i>	<i>-y</i>	<i>-aN</i>	<i>-jaN</i>	<i>-eN</i>
S. 15	<i>-i</i>	<i>-y</i>	<i>-y</i>	<i>-ēN</i>	<i>-y</i>	<i>-aN</i>	<i>-aN</i>	<i>-aN</i>
OCS.	<i>-i</i>	<i>-y</i>	<i>-y</i>	<i>-eN</i>	<i>-y</i>	<i>-y(N)</i>	<i>-eN</i>	<i>-eN</i>
ORu.	<i>-i</i>	<i>-y</i>	<i>-y</i>	<i>-ě</i>	<i>-y</i>	<i>-a</i>	<i>-ja</i>	<i>-ja</i>

There is at no stage reason to assume ten different sequences of vowel plus tautosyllabic nasal, as Holzer does (1980: 16). There is no reason to assume a development of *jō* < \**jen* < \**jon* (ibidem: 18).

7. Finally we must pose the question if the raising in \**-ois*, \**-ōis*, and \**-ons* affected \**-os* and \**-ōs* as well. I think that it did not. For \**-ōs* there is counter-evidence in SCr. aor. 2/3sg. *dā* < \**dōs*, where the vowel cannot be due to restoration because it was different in the other persons, e.g. 1sg. *dāh*. Meillet's derivation of gen.sg. and nom.pl. *-y* from \**-ās* (1914: 6) is disproved by the corresponding soft ending OCS. *-ę* ORu. *-ě*. If there had been an ending \*\**-i* in the soft inflection, as Meillet suggests, it would certainly not have been eliminated in view of the fact that the same ending subsisted in the same case forms of the *i*-stems. The substitution of the acc.pl. ending for the nom.pl. and gen.sg. endings of the *ā*-stems cannot be understood if one does not take the accentual evidence into consideration. As I have pointed out on various occasions, trisyllabic word forms

which received medial stress as a result of Dybo's law have neo-circumflex tone before originally acute endings in Slovene because the glottalization which continued the PIE laryngeals was lost in early Slavic post-posttonic syllables but preserved in the first posttonic syllable until the rise of the new timbre distinctions (1978c: 277), e.g. *zabáva* < \*zābāvā < \*zābavā versus *kráva* < \*krāva. When \*-s was lost at stage 10 of my chronology (1979d: 267), the nom.pl. and gen.sg. endings \*-ā < \*-ās merged with the nom.sg. ending in trisyllabic words with initial stress, but not in disyllabic words, e.g. \*zābaʔvā < \*-aʔ, \*-ās, but \*kārʔvaʔ versus \*kārʔvā < \*-ās. The same development caused the merger of the nom. and acc.sg. forms of the *i*- and *u*-stems, which had important syntactic consequences. The loss of the glottalization in the first posttonic syllable gave rise to the new timbre distinctions at stage 14 (ibidem: 269), e.g. \*zābavā, \*kraʔva, -ā (South Slavic and Czech-Slovak), \*korʔva, -ā (Russian, Polish, Sorbian). When \*j was lost in consonant clusters at stage 15, the following vowel was lengthened (ibidem: 270), e.g. \*pīšē < \*pīsje, \*vòlā < \*vòlja < \*vāljaʔ, SCr. *pīšē*, *vòlja*. As a result of this lengthening, the nom.sg. ending of the *jā*-stems merged with the gen.sg. and nom.pl. endings. Different vowel quantities in the same ending were subsequently levelled out to a certain extent in the separate dialectal areas. I therefore think that the substitution of the acc.pl. ending for the nom.pl. and gen.sg. endings was a gradual process which affected first polysyllabic words, then the other soft stems, and finally the remaining hard stems. It is probable that the endings \*-ā and \*-y/-e existed side by side for a considerable period of time. It is precisely the coexistence of the two endings in the nom.pl. form which entailed their coexistence in the gen.sg. form. The introduction of the acc.pl. ending into the gen.sg. form was facilitated by the merger of gen.sg. -i < \*-ū < \*-ois with acc.pl. -i < \*-ins in the paradigm of the *i*-stems as a result of the delabialization at stage 12 (ibidem: 268, cf. Vaillant 1950: 211 and 1958: 81).

The fundamental article on \*-os is by Leskien (1907). As he points out, the only piece of evidence which can be adduced for a development of -b < \*-os is the nom.sg. ending of the masc. *o*-stems, which is easily explained as an innovation on the basis of the *i*- and *u*-stems. The dat.pl. ending -m̃ must be derived from \*-mus, as the Old Lithuanian material shows unambiguously. The 1pl. ending -m̃ represents the PIE primary thematic

ending *\*-mom*, as I have argued elsewhere (1979a: 64). This reconstruction explains not only the Greek ending *-men* (with *e*-vocalism from the athematic ending *-mes*), but also the loss of *\*m* in the Armenian aor.subj. ending *-uk<sup>c</sup>* (Kortlandt 1981: 30) and the absence of *-s* in the ending of the Indo-Iranian subjunctive (Beekes 1981: 24). The alleged raising in *\*-os* is disproved by the nom.acc.sg. ending of the neuter *s*-stems, e.g. *slovo*, where the ending can hardly be analogical, and by the adverbial forms *kamo*, *tamo*, Gr. *tēmos*, *ēmos*. Berneker's main objection against the hypothesis that *\*-os* yielded *-o* is nom. *kъ-* in *kъto* and *kъžtdo*, where the acc. form is *kogo* (1904: 371). It is probable, however, that the substitution of gen. *kogo* for the original acc. form is comparatively recent, as Berneker argues himself (ibidem: 376). Moreover, Rozwadowski has shown that the oldest form is *kožtdo*, not *kъžtdo*, and that the same form is attested in Old Polish *koždy* and Upper Sorbian *kóždy* (1914: 15f). As he points out, the ending *-o* < *\*-os* was preserved not only in *ko-*, but also in OCS. *rodosъ*, *narodotъ*, *to estъ*, Old Czech *večeros*, modern Bulgarian *tozi*. Before the enclitic article the ending *\*-os* has been preserved in the suffix *-oš*, e.g. Czech *hnědoš*, *křivoš*, *dlouhoš*, *běloš*, *hrdoš* (Torbiörnsson 1925: 278).

The main reason why the alleged raising of *\*-os* is found time and again in the literature is that earlier scholars have not realized that the raising of *\*-om* to *\*-um* must be dated to the Balto-Slavic period and cannot therefore be compared with the Slavic raising of *\*-ons* to *\*-uns*. It has led a series of investigators to date the raising of *\*o* to *\*u* in final syllables after the Slavic umlaut of *\*jo* to *\*je* (e.g. Streitberg 1892: 285, Leskien 1907: 336, Illič-Svityč 1963: 134 = 1979: 117, Holzer 1980: 14-17). Troubetzkoy saw correctly that the umlaut must be dated between the raising in *\*-ons* and the delabialization of *\*ū* (1922: 224). Van Wijk has seen that the umlaut must be dated between the delabialization of *\*ō* and the delabialization of *\*u* and *\*ū* (1950: 301f), and that the raising of *\*-om* to *\*-um* was probably anterior to the merger of *\*ā* and *\*ō* (ibidem: 298), which was a very early development. Since the raising in *\*-ons* affected the acc.pl. form of the *ā*-stems, it was posterior to the merger of *\*ā* and *\*ō*, but anterior to the delabialization of the latter. Thus, the chronological evidence alone suffices to show that the raising in *\*-om* cannot be identified with the one in *\*-ons*.

The raising of *\*-om* to *\*-um* must be dated to the Balto-

Slavic period, as has been pointed out in section 3 of the present article. This eliminates Szober's objection that the substitution of the pronominal ending *-o* in the nom.acc.sg. form of the neuter *o*-stems did not affect the neuter *u*-stems, e.g. *medь*, *obь* (1927: 566). The substitution was apparently anterior to the loss of *\*-m*. It was part of the general equalization of the neuter nom.acc.sg. form to the bare stem which gave rise to *\*-en* for earlier *\*-in* in the *n*-stems, e.g. *ime̋*. Illič-Svityč has shown that the substitution of *-o* for *\*-um* was limited to originally oxytone neuters and that the barytone neuters joined the masc. gender (1963: 120-140 = 1979: 104-123). The latter development was apparently Balto-Slavic because all neuter *o*-stems which have been preserved in Old Prussian represent original oxytona: *assaran*, *dalptan*, *kelan*, *creslan*, *lunkan*, *maltan*, *mestan*, *prassan*, *schutuan*, *pedan*, *pirsten*, *scaytan*, diminutives *maldian*, *eristian*, *wosistian*, cf. Slavic *jezero*, *dlato*, *kolo*, *krěslo*, *lyko*, *mlato*, *město*, *proso*, *žitvo*, Skt. *padám*, *prsthám*, OHG. *scit*, OE. *scid* < *\*-óm*, Gr. *andríon*, *paidíon* < *\*ióm*. There are two seeming counter-examples: *saytan*, OHG. *seid* < *\*sóitom*, and *median*, Skt. *mádhyaṃ*. The former word belongs to the numerous class of derived neuters in *-tan*, cf. *anctan*, *baytan*, *buttan*, *meltan*, *mettan*, *saltan*, *spaustan*, *twaxtan*. In the case of *median* there is evidence for earlier final stress in Skt. *madhyá* and Lith. *medinis*. Illič-Svityč assumes the coexistence of Proto-Baltic masc. *\*mediās* 'tree' and neuter *\*mèdia* 'forest' (1963: 46 = 1979: 36).

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