The Sound Change e > o in the Birchbark Letters of Novgorod and T. Fenne's "Manual", and the N.sg m. Ending -e

Author(s): CLAIRE LE FEUVRE

Source: *Harvard Ukrainian Studies*, December 1993, Vol. 17, No. 3/4 (December 1993), pp. 219–250

Published by: Harvard Ukrainian Research Institute

Stable URL: https://www.jstor.org/stable/41036527

The Sound Change *e* > *o* in the Birchbark Letters of Novgorod and T. Fenne's *Manual*, and the N.sg m. Ending -*e**

CLAIRE LE FEUVRE

One of the characteristic features of East Slavic dialects is that an etymological **e*, or strong **ь*, is in certain conditions reflected as [o] in the modern languages. The usual formulation of the rule is: *e* > *o* before hard consonant, and also word-finally in some dialects. The largest scope of the *e* > *o* change seems to be in the northern dialects of Russian, which have many cases of [o] from **e* where modern literary Russian has [e]. This change did not affect **ě* in most dialects, but did in some northern areas. Since the change is well established in the north, W. Vermeer[1] has proposed that the N.sg m. of hard stems -*e*, typical of Old Novgorodian texts, was pronounced ['o], undergoing a "retraction of **-e* (> -*o*, with softening, if possible, of a preceding consonant), in word-final position." The purpose of this paper is to examine what the Birchbark Letters of Novgorod (hereafter BBLs) tell us about this *e* > *o* change, and whether the data fit with Vermeer's hypothesis. We shall first examine the conditions of the change in the old dialects of northern Russian, as they are attested in two kinds of documents: the birchbark letters, found mainly in Novgorod, but also in other cities, which encompass a period extending from the eleventh to the fifteenth century, and a later document, T. Fenne's *Low German Manual of Spoken Russian* (Pskov, 1607). Then we shall apply the conclusions to the case of the N.sg ending.

The BBLs are the only documents from the north largely exempt from the influence of the "literary" language, or of Church Slavonic. Unlike the Novgorodian chronicles, which have the same geographic origin, but reflect a literary norm with fewer dialectal features, the BBLs have no literary pretension. They are short documents, restricted to local use, dealing with material facts of everyday life, written on a cheap and perishable material. The chronicles, by contrast, are lasting monuments, dealing with the nobler events of history. Hence the clear linguistic differences between contemporaneous documents written on the same territory.

1. Vermeer 1991, 288 and 1994, 154, followed by Birnbaum 1991, 206.

Tönnies Fenne's *Manual* is a very important source of documentation on the neighboring dialect of Pskov.[2] Though later (1607), it is nevertheless precious because Fenne transcribed for his German fellow countrymen sentences he learned from his informants in Pskov. He, too, is dealing with a matter not subject to any literary or religious influence—trade. "His basic purpose was 'to write in the Russian tongue how the Germans should speak with the Russians in Russian when conversing of domestic and daily affairs and of all kinds of business' (p.188)."[3] Thus, he uses many dialectal forms. Above all, what is precious is that he is transcribing Russian into a Roman alphabet, which means that the influence of the orthographic norm (Fenne was familiar with Cyrillic writing, which he uses himself occasionally) is even weaker than in the BBLs. A transcription focuses on the phonetic value, not on graphic conventions. Therefore Fenne and the BBLs are good sources for our knowledge of the earlier dialectal reality.

PART ONE: THE *E* > *O* CHANGE

The first attestations of this change in the literary texts date to the twelfth century, with maybe isolated instances as early as the end of the eleventh century, and are found mainly after palatal consonants: this restricted *e* > *o* change represents the situation found in the southern East Slavic dialects (Ukrainian). But should it be generalized to all of the Early Rusian dialects?

A. THE BIRCHBARKS

Denoting graphically the reflex of *e* > *o* is a difficult problem for a Cyrillic writing system, which allows ‹e›[4] only after a soft consonant (hereafter [C']) and ‹o› only after a hard one. But *e* > *o* yields a new combination ['o], that is, [o] after [C'][5]: the consonant was automatically soft before [e], and this softness was retained when the quality of the vowel changed.[6] Literary

---

2. Pskov was an important commercial center, and Fenne, himself a German merchant, must have met there many merchants from other parts of Russia. Some non-Pskovian dialectal features are occasionally reflected in the *Manual*, as Fenne's informants changed. But these are the exception rather than the rule.

3. Jakobson's translation, in the Introduction to his edition of Fenne's *Manual*, p. ix.

4. The angle brackets indicate graphic representation.

5. We use the notation ['o] as a convention, although it is inaccurate, for it represents in fact a combination of features belonging to two different phonemes: the consonant (softness) and the vowel.

6. It should be noted here that Vermeer's formulation "retraction of *-e* (> -o, with softening, if possible, of a preceding consonant)" is inaccurate: softening is not a corollary of *e* > *o*; the consonant was already soft before [e]. All *e* > *o* can do is contribute to make softening phonemic, since it allows [C'] before back vowel.

Russian did not indicate this change graphically until recently, and even now does not always use ‹ё›, which consists of a diacritic mark on ‹е›. Another solution is found in Ukrainian: the modern writing system uses a digraph ‹ьо›.[7] The people who wrote the BBLs did not use any diacritic mark or digraph. Their graphic inventory is the Church Slavonic one. Therefore they could use either ‹е›, and continue to indicate the quality of the consonant at the expense of that of the vowel, or ‹о›, and indicate the quality of the vowel at the expense of that of the consonant. The adoption of a new spelling ‹о› had to overcome graphic conservatism and the influence of Church Slavonic, which kept the spelling ‹е›.

We shall start with internal or initial position,[8] the clearest case: in endings and grammatical morphemes, there can always be morphological pressure responsible for an analogy. Since many of these documents show a confusion between ‹е› (and ‹ѣ›) and ‹ь›, and ‹о› and ‹ъ›,[9] cases of unexpected ‹ъ› must be examined too.[10]

I. *e* > *o* in the Root Morpheme

I.1. Under stress: 14 stems (6 after palatal or [c']^[11])

з беро̱стомъ 40; жо̱лтого 288; жо̱нку 402, жо̱нкою 703; зело̱ного 288 (twice); но̱бомъ 10 (R. небо is a Church Slavonicism, the phonetic form is preserved in нёбо "palate"); цетво̱рты 169; шо̱лкоу 288; въ Торжо̱къ 358; уро̱клъ 724

у ѳо̱дора 153, Смо̱на 413, оу Горегѧ 228; might be mistakes for ѳеодора (ѳеодоро 559), Смеона (Сьмьона 602), Георгъ (Георегиѧ 506); but R. has ['o] (Фёдор, Семён), and the BBLs have the stems Герг- 545, 551, Смен- 534, 622, 689, Фед- 96, 251, 289^[12]

---

7. Only for new [o] after soft consonant (dental) other than palatal, cf. Shevelov 1979, 647ff. The BBL's Смьона 551, Сьмьона 602 have ‹мьо› for [m'eo], not for [m'o].

8. Cases of absolute initial [o], such as къ Офросение 717, Оводокиѧ 506, will not be discussed, for they are not cases of *e* > *o*, but belong to the ѥдинъ / одинъ type, which is not considered here.

9. Zaliznjak 1982, passim.

10. This discussion is based on the word index established by Zaliznjak, NGB 1986 and 1993, and the temporary publication of texts 710–752. It is clear that further discoveries in Novgorod will bring new elements ; I hope they will not change altogether the picture given by the first 752 documents.

11. The dialects of Novgorod and Pskov have only one affricate /c'/, corresponding to both /č'/ and /c'/ of other East Slavic dialects (*cokan'e*). The scribes use indiscriminately the spellings ‹ч› and ‹ц› for this phoneme.

12. These names are a different case: they were borrowed from Greek with an [o], and are not strictly speaking cases of *e* > *o*: от Сьмьюна 198, spelling also found in the chronicles, parallel to Гюргии, shows the difficulties of rendering the Greek sequence [eo], which was achieved

чоронами (черенъ) 167; it cannot be read *чёрён-, because the first [e] could not undergo $e > o$ before [C'][13], so that the [r] is necessarily hard: if the second ‹o› cannot represent ['o], or a real [o], which is etymologically impossible, it can only be a graphic equivalent for ‹ъ›[14]; the form is чёрънами with only the first [e] undergoing the change.

Here must be added ещо 494: it is in final position, but isolated; it is not a grammatical morpheme, and cannot be subject to any morphological analogy.

I.2. Unstressed: 13 stems (4 after palatal or [c'])

I.2.a) First pretonic position

жона, жоны 474; к Олоскадру 528 = Олександръ; от Потра 53; серобро 420; Стопане 169, 413, 528; чоломъ 243, 301, 307, 362, 370, 413, 467, 491, 610, 694

from Февроньа: ѡ Фовронее 415, Фъвърънию 560,[15] ѳъворониа 559, ѳоврониа 545; no form with ‹e›; but [e] is in a labializing environment, before [v] (cf. PIE *newos > novŭ), and this may not be a case of $e > o$ strictly speaking.

перостави (переставити, imperative) 283; may be a mistake: there is no other instance of перо-; the preposition передъ is never written with ‹o›.

на Кнажоосторови 324: cf. кнажоостровьчовъ (Dvina, 15th c.); linking vowel *o reflected as [e] after [C'], and then possibly undergoing $e > o$. This case is isolated: [e] is before a vowel. Either we assume that $e > o$ took place also before back vowel, or we posit a strong morpheme boundary between the two members of the compound, which would allow the same treatment for the first member as in absolute auslaut.[16] It could also be an assimilation to the following [o] (for ‹o› in ‹сто›, see below, I.4.a).

---

through the use of the only rounded back vowel admitted after soft consonant, hence ‹ю›. However, the fact that we find both spellings, ‹e› and ‹o›, shows that they have been integrated into the $e \sim o$ pattern: only the existence of [C'o] from [C'e] can allow the rendition of [C'eo] as [C'o]. In this sense they can be used as indirect evidence for [C'o].

13. Zaliznjak, NGB 1993, 137; mod. Russian чёрен (short adj.) is analogical.

14. The paradigm would be N. чёренъ / G. черна, as dialectal верёхъ / верха.

15. The second ‹ъ› is a non-etymological one and is merely graphic: the same text has Варъвароу, Олькъсоу with the same graphic ‹ъ›, which cannot be an anaptyctic vowel; the same applies to 559.

16. Cf. чужоземских "foreign," in a Ukrainian text of 1599 (Shevelov 1979, 153), before [C']: either the compound boundary is strong and the first member treated as if in absolute auslaut, or the form is patterned on other compounds like чужоложство "adultery" (Černihiv 17th c.), where the following consonant is hard.

I.2.b) First posttonic position

черосъ 474 = через (cf. черосъ, *Uspenskij Sbornik*, 12th c.); шестора луди
374

from гривьна: гриво̱нъ S.R.2, грив[о]но 349, and maybe also грѣво̱ну, трѣ
грѣвоны 366, довѣ гривъ̱нѣ (Svin.); the G.pl, with a strong jer, could be
the source of a secondary stem гривен- / гривён-; the prominence of this
case form is not inconceivable in the case of a monetary unit, which occurs
mainly after numerals governing the G.pl. One can compare гривена in
Fenne's *Manual* (209). But ‹о› / ‹ъ› may also indicate a hardening of the
[v], and have no vocalic value, except in the G.pl.

The position of stress is not known in the case of Терехъ: Терохъ, от
Теро̱ха 300 / на Терехѣ 162; possessive adjective (unfinished) въ
Теро̱хо[] 300.

I.2.c) Second pretonic position

Фо̱дорку 417: analogy of the base (Федоръ) on the derived hypocoristic.
чо̱лобитие, цъ̱ло-: analogy of the simple (челомь бити) on the compound.
чо̱ловѣкъ 24, 43, 99, 167[17]; may be a labialization before [ło][18];
чоловѣкъ is also attested in the *Izbornik* of 1073, earlier than the first
reliable cases of *e > o*. There is probably an attraction to the pleophonic
pattern [oło]. We have a parallel case with цѣловати: Fenne has a form
potzolovat, поцоловать (179), which is also found in the second chronicle
of Pskov: поцоловаша крестъ (223), and in several Novgorodian
documents= по хрѣстному чолованью (1412, Zaliznjak 1995, 574), в
хрестное цолование (1392, Valk n⁰ 46). Since *ě* is never changed to ['o]
either in Pskov or in Novgorod, this stem can only be explained by a
secondary attraction to the pleophonic pattern.

I.3. Unclear cases

поцо̱стое S.R.17: Zaliznjak quotes the form with a question mark. He
suggests this could be a local variant of почестье. But the form would be
an absolute hapax. The text is damaged, and this is the end of the legible
portion. Thus the form is not reliable.

---

17. Since this word is often abbreviated, in many cases the quality of vowel cannot be
determined.
18. Cf. Eastern Slovak dialects, where *e > o* "after *č*, *c*, before *l* and before labials," Krajčovič
1975, 97.

възъмъ 246: past active participle; it could be read [vz'om], but it might be a misspelling.[19]

I.4. Cases where the change is only apparent[20]

I.4.a) Weak jer or zero

Cases with ‹o› where there is etymologically a weak jer, such as пошьниць 636 (= пъшеницѣ < *пьш-), у бороце 318, etc., do not have ['o]. These forms apparently show a neutralization of jers in weak position in favor of the back jer. Ко сестори 497 does not reflect *e > o*: the stem never had any jer, [t] is epenthetical in an original cluster [sr]; сестер- / сестёр- could be reshaped after the G.pl but, unlike for гривьна, there is no reason to assume a privileged position for this case form. The ‹o› is a cluster-breaking vowel, as in Кнѧжоосторови 324, with the same non-etymological ‹o› in the cluster [str].

I.4.b) Second pleophony

This phenomenon, typical of northern dialects, is characterized by the development in *Tъ/ьrT* groups of an anaptyctic vowel after the liquid, breaking the consonantal cluster: *TьrьT, TъrъT*. In the BBLs the second pleophony is consistent for *TьrT* groups in strong position, that is, before a weak jer, less in weak position.[21] It was preserved in modern dialects only in strong position. The same dialects show that the second vowel in strong position could undergo *e > o*: lit. R. верёвка, dial. [v'er'ox] (but G. [v'erxa] weak), [skat'er'otka] (from [skat'er'et'] / lit. R. скатёрка from скатерть). The change did not take place in weak position, because the anaptyctic vowel was regularly dropped.

All the instances we have of a spelling ‹ь(e)ръ(o)› are in weak position, where *e > o* did not occur. Thus смързда 247, жьлътое S.R.8, ц[ет]веръ[т]а 710 are not reflexes of the change. There is no reason to suppose for all three a levelling in favor of the strong stem. Therefore it is likely that the spelling ‹ъ› for expected ‹ь› indicates the hard quality of the liquid before hard consonant:[22] cf. чоронами 167, where only the first ‹o› is really a reflex of

---

19. Zaliznjak, NGB 1993, 149, 244, for whom this letter reflects another dialect.
20. Cases where ‹o› is obviously a mistake are not discussed here.
21. In weak position the second pleophony is more frequent in the older letters, cf. Zaliznjak, NGB 1986, 124–25 and NGB 1993, 267. "Strong" and "weak" apply to the position of the whole group before pleophony.
22. On this problem, cf. Zaliznjak 1991, 135; id., NGB 1993, 266; Malkova 1981, passim.

e > *o*, whereas the second one is an equivalent of ‹ъ›, indicating that the [r] is hard. The only case in strong position is цетверотка 521[23], which probably shows *e* > *o*.

I. 5. Conditions for the *e* > *o* change

The change affects: original **e* (нобомъ), linking vowel (на Кнджоосторови), original **ь* in strong position (жолтого, гривонъ), first pleophony (черосъ), second pleophony (цетверотка). In the BBLs **ě* never undergoes the change to [o].

Instances of the change after palatal or [c'] (6 out of 14 in stressed syllable, 4 out of 13 in unstressed position) are neither the majority, nor earlier than others (see IV, below), and it is not legitimate to establish a privileged link between the *e* > *o* change and the palatal feature in the preceding consonant. Therefore the hypothesis that *e* > *o* had two phases, a first one, common East Slavic, after palatal consonant only, and a second one, unknown in Ukrainian, after other consonants, is to be rejected.[24] Thus in root-internal position the *e* > *o* change occurs if the following conditions are present together:

1. [e] must not be followed by a soft consonant.

2. [e] > [o] after any soft consonant; whether the latter is a palatal is not a relevant factor.

3. [e] must be under stress or in the immediately adjacent syllable: of the three instances in second pretonic position, two are clearly analogized after their respective bases, and the attraction to the pleophonic pattern probably accounts for the [o] in чоловѣкъ.

---

23. Another form, [че]вт[еро]ткѣ 492, was not taken into account because the reading is not certain.
24. If this is the situation in Ukrainian, it is because Ukr. does not have soft, but hard dentals and labials before [e], and the palatals are the only consonants that are soft in this position; but this is not the case in Russian dialects: the presence of *e* > *o* after consonants other than palatals in the BBLs shows that these consonants were soft before [e], as in other Russian dialects.

II. Non-root morphemes with *e > o*

II.1. Suffixes

There is no instance in stressed syllable,[25] but only examples in first posttonic position:

- past passive participle: (и)[з]обиж<u>о</u>на 474; окрад<u>о</u>ни 370, before [C']: levelling; in the other cases the consonant is hard.
- Possessive suffix: оу Аръш<u>ъ</u>виц[] 219 (unfinished); before [C']: analogy with the possessive adj. in -овъ.[26]

II.2. Nominal endings

- I.sg: грабьж<u>ъ</u>мъ 252; с зат<u>о</u>мъ 568; с плац<u>о</u>мо 415; с племенъмъ 417.[27]

There is one instance under stress (грабьжъмъ), and three in unstressed syllable: two in first posttonic, and one in second posttonic (с племенъмъ), where the change has not been observed so far. But it is quite possible that we have here, not a reflex of *e > o*, but a morphological confusion of the hard and soft paradigms: the I.sg is -омь in the hard stems, -емь in the soft stems and the consonantal stems. There is a general tendency to eliminate the consonantal declension. It is true, though, that *n*-neuters have been very well preserved down to mod.R., but cf. D.sg племеню in a parchment text from 1359, which is clearly in analogy with the *o*-stems. And analogy is even easier in the I.sg than in the D.sg, for in the I.sg the ending *-em* is common to *jo*-stems and *n*-stems. Finally, this morphological confusion was backed by cases of *e > o* in tonic or first posttonic syllable, such as плацомо, which fall together with the hard-stem ending. The fact that *e > o* is otherwise attested in this letter (Фодорку, itself analogical) does not preclude morphological analogy.

One can add the fragment []вич<u>о</u>мъ 302: the text is damaged, but this is probably an I.sg (or D.pl?). The position of [e] regarding stress is not known, but the syllable is either second or third posttonic. It could be, like

---

25. Оставльноиѥ 419 (Church Slavonic text) is not to be read *оставлѣние with an inversion of ‹н› and ‹о›, but оставльно, corrected to оставльниѥ without removal of the previously written ‹о› (similar fact in n°2, Zaliznjak, NGB 1993, 124), and is not a case of *e > o*.
26. The case is not isolated: cf. for instance Мосѣовиць in the first chronicle of Novgorod (NPL Syn. 10).
27. The editors' first reading згостомо for 61, a damaged text, has been emendated and the word is to be read (и)зростомо, so that the word does not belong here.

племенъмъ, by morphological analogy: influence of the hard paradigm, and of cases where *e > o* occurred in first posttonic position.

- G.pl: рублово 256 (stressed); оу вымолчовъ 248: second posttonic syllable, but this is because of the prefix вы-, otherwise the stem has final stress, so that this form can be influenced by the simple (or forms with other prefixes), or by other G.pl with -овъ.
- D.pl: людомъ 364; first posttonic.

II.3. Pronouns

от ного 370 (twice) / ѥ- 20 times; к ному 10 / ѥ- 11 times; цого 68 (twice) / че- 4 times. All three are in first pretonic position.

II.4. Verbs

There is only one form, поедъмъ 1pl 252, in first posttonic position.

To determine the part of morphological analogy in these forms is not easy, but in some of them it is possible to show that the form is not only phonetic. Cases with ['o] before [C'] are obviously analogical. Letters 219 (аръшъвиц[]) and 248 (вымолчовъ) fail to show *e > o* in other forms: дежекъ 219, G.pl of дѣжька (the fleeting vowel of the G.pl is subject to *e > o*: гривонъ S.R.2), приобижени, бѣють челомъ 248. But when a change occurs, it is consistent and allows for no exception; cf. 288, where *e > o* is reflected throughout the letter: if we have only one isolated instance in texts which otherwise do not show *e > o*, this unusual situation has to be explained. These could be phonetic spellings in letters otherwise respecting the orthographic norm ‹е›. But these forms have a striking common point: the change is attested in grammatical elements (suffix, ending), whereas stem-internal [e] is left unchanged. It cannot be mere chance that each time the supposed phonetic spelling is found precisely in grammatical elements, where analogy is always a factor, and not in stems, where analogy is much less active: these forms are at least partly morphologically conditioned. This is obvious for аръшъвиц[], where ‹о› is before [C']. Of course, morphological analogy presupposes that *e > o* has already occurred, since only the phonological change can allow [o] after [C']. Thus these forms are partly morphological, but are relevant even though they are not direct reflexes of the change. Morphology and phonological change work together and converge to merge the hard and soft paradigms. Therefore it is often impossible, in the case of grammatical elements, to determine whether a form is phonological or morphological.

III. Morphemes where $e > o$ is consistently absent

- 3sg with zero ending (present, aorist): блюдь (present) 411, вонидь (aorist)
  Zven. 2.
- neuter sg of *jo*-stems (after consonant or vowel): subst. Старо Поле, сртце
  (= сердце); verbal noun -ние; adj. твое, другое[28]; comparative люче,
  боле.
- V. sg m.: always ‹е› / ‹ь›: братьче 605, брате 414, 531, брать 68.
- N.sg m. -*e*: never ‹о›; Стопане 169 has $e > o$ in the stem, but not in the
  ending.
Does this mean that $e > o$ does not take place in absolute auslaut? The only
  example is ещо, which is isolated and not motivated like a grammatical
  morpheme.

IV. Chronology

12th[1] (1125–1150): 560: ѳъвърънию; 559: ѳъворониа
12th[2]: 724: уроклъ
end 12th–beg. 13th: 545: ѳоврониа; 228: оу Горегѧ
13th[1]: 153: у ѳодора; 219: оу аръшгъвиц[] (дежекъ)[29]
mid-13th: 413: Стопаномь, от Смона, цоломь, цолобитье (N.sg еси
  пересмотреле, послаль есмь = -ле)
13th[2]: 68: цого (N.sg Местиловь = -ве); 349: грив[о]но; 420: серобро
14th[1]: 53: от Потра (N.sg покосиле); 288: зелоного (twice), жолтого,
  шолкоу (N.sg золотнике); 324: на Кнѧжоосторови; 415: ѡ Фовронее,
  с плацомо (N.sg убиле мѧ пасынке и выгониле, самь)
mid-14th: 99: [цоловѣка] (N.sg недоборе); 358: въ Торжокъ; 417:
  Фодорку, с племенъмъ (N.sg Матвѣике)
14th[2]: 167: чоронами, чолобитьѥ, [чоловекъ]; 252: грабьжъмъ,
  поедъмъ; 256: рублово; 366: грѣвону, грѣвоны (N.sg аковь = -ве);
  370: окрадони, от ного, цоломъ (ѥму, N.sg ѥси даль = -ле); 283:
  перостави (?)
14th (without precise dating): 568: с зѧтомъ; 610: цоломъ
end 14th–beg. 15th: 10: нобомъ, к ному; 43: [цоловѣкъ] (N.sg забыле);
  129: цолобитьѥ; 169: цетворты, Стопане N.sg (N.sg Онтане, послале);
  362: цоло (N.sg Ондрике); 364: людомъ; 474: черосъ, жона, жоны,

---

28. The problem of denoting ['o] after a vowel is particularly difficult: the Cyrillic alphabet has
no letter for [j], and a spelling ‹своо› for [svojo] is unexpected, but cf. Мосѣовиць in the first
chronicle of Novgorod.
29. Forms of the same text which do not show the reflex of $e > o$ are given between brackets.

изобижона; 491: цолом; 521: цетверотка; 528: СтопанA, к Олоскадру;
694: цоломъ

15th: 24: [цоловѣкомъ] (N.sg Недѣлекине); 40: з беростомъ; 243:
цоломъ (N.sg пришле); 248: оу вымолчовъ (приобижени, челомъ);
300: Терох- (N.sg возилесь быле); 301: цоло, цоломи; 302: []вичомъ;
310: цѣлобитиѥ (N.sg Нестерке); 307: чоломъ, цоломъ (N.sg
печатале); 374: шестора; 402: жонку; 465: цолобитье; 467: цол-; 494:
ещо (Еремкинское); S.R.2: гривонъ

These data show that *e* > *o* is scarcely attested before the thirteenth century,
and develops really only in the fourteenth–fifteenth centuries. One might
object that the distribution may be due to other, non-linguistic factors, such as
a greater number of preserved documents for a given period, and that these data
should be put in terms of proportion of the number of texts found in each
layer, and not be viewed in absolute terms. The total number of letters found
in the layer 1396–1409 is equivalent to that found in the layer 1197–1224,[30]
and yet the latter has only two letters with *e* > *o* for a period of twenty-seven
years, whereas the former has eleven in thirteen years. Layers 1238–1268 and
1422–1429 are equivalent for the number of texts, and the latter has five
instances of *e* > *o* in seven years, whereas the former has only one in thirty
years. Therefore there is no denying that the situation is not uniform over the
five centuries covered by the BBLs.

The traditional dating for the change in the southern dialects of East Slavic
is the end of the eleventh–beginning of the twelfth century. For the northern
dialects, the change would date back to the mid-twelfth century.[31] The BBLs
confirm this date, with one instance shortly before 1150 (Фъвърънию, twice,
though it probably does not reflect only *e* > *o*), and one in the second half of
the century (уроклъ).[32] It is not reflected earlier in stressed than in unstressed
syllable: the first of the two forms has the change in pretonic position, the
second one has it under stress. But why are the attestations so unevenly
distributed chronologically?

Along with the possibility that we are witnessing the progression of the
sound change, there might be another explanation: the conservatism of the
written norm. Although this was not as important a factor as in the parchment
documents, it must have played some role. Dean Worth has studied more

---

30. Based on the first 540 gramoty studied by Worth 1986.
31. Kiparsky, RHG I, 153.
32. This confirms that възъмъ 246 is probably not a case of *e* > *o*: the text dates back to a time
(third quarter of the 11th c.) much earlier than the first reliable instances of the change, even if
it can reflect a southern dialect, where the change is traditionally said to have happened earlier
than in northern dialects.

specifically the incipits of the BBLs, from which it can be clearly seen that these formulas evolved from a Church Slavonic-type formulation to a more secular one.[33] This change appears to be rather sudden, around the year 1300. This is precisely when the attestations of *e > o* become frequent. Is there a correlation? If the radical change shown by Worth is to be attributed, not to a linguistic evolution, which obviously cannot be the case, but to a socio-economic change, the result of which is that the "writing business" becomes more and more independent from the religious authorities, we could expect a secularization of the language as well as of the incipit formulas. If such is the case, we expect to find no instance of *e > o* in letters with a religious connection, because *e > o* does not belong to the language of the church, and this is what we find in the BBLs. As long as writing was more or less under the control of the church, the orthographic norm ‹e› was ever in the mind of a scribe who was a monk or a priest.

Conclusion

The change *e > o* is not attested before the mid–twelfth century. The phonetic process can be seen mainly in root-internal position: in grammatical elements, morphological analogy plays a very important role and the forms are not only phonetic. Clear instances of the phonetic change seem to be limited to three positions: tonic, first pretonic, first posttonic. All the cases in second or third pre- / posttonic can have another explanation.

B. FENNE

The *e > o* change is widely attested in Fenne's *Manual*, which consists of a short dictionary, arranged thematically, followed by a conversation handbook. It should be noted that ['o] is far more frequent in the second part, than in the first part: *vedro*, ведро (31, 98) but *vödro* (232, 259, 474);[34] pronominal stems almost always have the [e] variant in the first part, the ['o] variant in the second part (ero / ёro). Other facts confirm the difference between the two parts, the first of which is closer to the Muscovite literary norm, whereas the second one reflects more faithfully the local dialect: a conversation guide depends on the informants, therefore on a dialectal variant, but a dictionary does not, or does so to a much lesser extent, because other sources can be used, especially written ones.

---

33. Worth 1984.
34. Fenne uses both ‹o› and ‹ö› for ['o], and sometimes ‹ö› for [o]: there is no apparent distribution rule.

V.1. Other than in absolute final position

The relation of the *e > o* change to stress position is discussed below (V.4), but one can see from the examples provided hereafter that it is not restricted to stressed syllables.

- root-internal: *szoltoie*, жолтое = желтое (127), *sona* = жена (241) (*szona*, жона 40), *sonka* = женка (230) (*szonka*, жонка 40), *ttzornoie*, чорное = черное (127), *scholk*, шолк = шелк (126), *tzölloveck* = человек (202); BBLs have *e > o*.
- first pleophony: *berosa*, бероза = береза (62), *berög* = берег (427); BBLs have *e > o*.
- second pleophony: *veroffka* = веревка (213, 486); BBLs have *e > o*.
- fleeting vowel of the G.pl: *dennoch* = денег (325); BBLs have *e > o*.
- perfect: *prischoll* = пришел (198), *obumörl* = обумерл (241); BBLs have *e > o*.
- possessive suffix: *tzareoff syn* = царев сын (252); BBLs have *e > o*.
- Past Passive Part.: *pereplafflona*, переплавлона = переплавлена (119), *striszono*, стрижоно = стрижено (130), *vstafflona* = уставлена (278); BBLs have *e > o*.
- pronominal stems: *iogo* = его (203), *otzum*, ѡчомъ = очем (158); BBLs have *e > o*.
- nominal endings: I.sg *putum* = путем (207), *tzirtzum* = сердцем (244),[35] G.pl *rubloff* = рублев (395, 418), *obrutzoff* = обручев (356), D.pl *aspodarum* = осподарем (202), L.pl *ffludoch* = в людех (306, 357); BBLs have *e > o*.
- 1pl: *soidomsi* = сойдемси (247), *podom* = пойдем (394); BBLs have *e > o*.
- 3sg: *tzelom biott* = челом бьет (206), *dovetdotza* = доведется (197); BBLs do not have *e > o* (BBLs still have a soft [t']).

V.2. Absolute final position

- *jo*-neuters N.Acc.sg: adj. *virnoio* = вѣрное (331); subst. *more* = море (414), but *solnszo*, солънъцо = солнце (31) (but also *solnsa*, солнца (32) with *jakan'e*[36]), *pletzo*, плечо = плечо (87); BBLs do not have *e > o*, so far.

---

35. The spelling <u> for [o] is frequent in Fenne.
36. These forms can reflect the merger of [a] and [e] after soft consonant, and it is not necessary to suppose an intermediate stage ['o].

suff. -ие / -ье: *bielie*, *бѣлье* = бѣлье (123) "white lead", but *nakovalio*,
наковалио = наковалье "anvil" (103), *orudio* = орудье (211, 398), *orudiu*
= id. (398)

suff. -ище: *toporitza*, *топорицо* = топорище "axe handle" (103); *stanovistzo*,
становицо = становище "harbor" (106)

suff. -ние / -нье: *korenie*, *коренье* = коренье "roots" (121), *sproszenia* =
спрошенье "request" (214) with *jakan'e*, *sosdanie* = созданье "creation"
(479)[37]

NB: Whereas the change is attested for the forms built with the old suffix *-
jo-*, the complex suffix -ние seems exempt from it and always has the ‹e›
variant (or the form with *jakan'e*); it must be because the abstract suffix
-ние is a frequent one in Church Slavonic (where there is no *e > o*),
whereas the concrete suffix -ище, for instance, is not susceptible to being
influenced by this type of register and therefore shows *e > o*.

- adverbs and particles: *iestzo* = еще (301, 441), *vszo* = уже (191, 301), *takso*
= так же (202); BBLs have *e > o* for еще, but never for же and related
forms.

- 3sg with zero ending: always *-e*.[38] BBLs do not have *e > o*.

- V.sg m.: always *-e*: *druske* = дружке (324, 375), *batszke* = бачке (196).
There are only a few forms. BBLs do not have *e > o*.

- N.sg m. : always *-e*: *vinovate* (225, 233, 253). BBLs do not have *e > o*.

V.3. Stress and the e > o change in Fenne

V.3.a) Pretonic positions

There is no case of ‹o› for expected ‹e› in second or third pretonic syllable,
other than человѣкъ and its derivatives, cf. *duschu tzolovetziu* = душу
человѣчью (255), *potzolovat*, *поцоловать* = поцѣловать (179), the G.
sotiroch = четырех (457),[39] and *iupansa*, *юпанса* "feltcoat" (92) if it is to be
read with Jakobson епанча.[40] If the first [e] in *sotiroch* is in second pretonic

37. These forms always have the [e] variant also when they are inflected: *sveetzeniem* = с
вѣщеньем (264), *sradeniem* = с радѣньем (264).
38. The only apparent exception is *berodam* (251), but it must be read not бере да(нь), but
берё(т) дань with regular simplification of the geminate consonant resulting from a sandhi
assimilation: cf. *peretoboi* = перед тобой (210, 356), *spoticha* = (и)спод тиха (415). Though
the two words are not as closely linked as a group preposition (clitic) + noun, брать дань is a
ready-made phrase, hence the close sandhi treatment.
39. As opposed to *tzetiroch* (418). But the form may be irrelevant, cf. Stankiewicz 1986, 417:
the "oblique cases admitted a stem stress as late as the seventeenth century." If so, *e > o* in first
pretonic is regular.
40. Fenne has other instances of ‹iu› for [jo]: *smetyu*, *сметю* = смстьё (102), *iuß*, ж (the name
of the letter is *ius*) = ёж (76).

position, the *e* > *o* change here can be readily explained by the analogy of *sotiri* = четыри, where the spelling ‹o› is consistent in first pretonic position. The [o] in чоловѣкъ and поцоловать has been explained above. The position before a labial consonant might account for *iupansa*.[41] But the form has to be compared with *iupa*, юпа "coat" (90) (Ukr. юпка, Cz. *jupka*), and *iupansa* is likely to be a contamination of юпа and епанча, so that it may not be an instance of *e* > *o* at all, but the spelling ‹iu› probably represents [ju]. The other instances of [e] in second pretonic syllable are all spelled with ‹e›. For the pretonic position, the restriction in Fenne is the same as in the BBLs: only the first pretonic syllable can undergo *e* > *o*. The only exception in both cases is the position before [ło], where there is clearly an attraction to the pleophonic pattern [ało]: *e* > *o* cannot explain [o] from *ě* in поцѣловать, since *ě* is not subject to *e* > *o* otherwise in Fenne; only a secondary reshaping after the forms with pleophonic [oło] can do so.

V.3.b) Posttonic positions

The few instances of ‹o› for [e] in second posttonic syllable are found in endings, a category most subject to analogical levelling, as we have already seen for the BBLs.

- N.Acc.sg n. of soft stems: because [a] and [e] merge after soft consonant (*jakan'e*), the forms with final ‹a› do not imply an underlying /o/.
adjectives: *rosnolitznoio* = розноличное (215), *virnoio* = вѣрное, *tainoio* = тайное (331); 331 in particular has *virnoio slovo tainoie*, but *virnoie slovu tainoio*; this means that Fenne considered the two n. sg endings -*e* and -*o* to be equivalent, and used them interchangeably. In these conditions he could easily have replaced a form with -*e* by a form with -*o*,[42] under the influence of forms where *e* > *o* occurred in first posttonic or tonic syllable, such as the pronominal adjectives, cf. *suoio* = свое (342).

---

41. Cf. Eastern Slovak dialects, where *e* > *o* "after *č*, *c*, before *l* and before labials," Krajčovič 1975, 97.

42. Previously he used the form with *jakan'e vernoia sloua tainoia* (257); this provides another possible key: when he has *slova* = слово with *akan'e*, he uses the form with *jakan'e* for the adjectives; that is, he follows a well-known tendency among students of a foreign language to have the same ending for all the components of a noun phrase. There are other instances of that (cf. *kakim dielim* = каким дѣл(о)м 210). Thus Fenne could use one of two possible variants to obtain this homogenization of the noun phrase. The letters ‹o› and ‹a› are for him equivalent in endings. Cf. also *slasna korienia* = сластно коренье (124), where the *jakan'e* form in the noun favors the *akan'e* form in the adjective. Such could be the case for *vernoio slovo tainoio*: the [o] variant for the noun triggers the [o] variant for the adjectives, although it is not correct. Cf. also *dirsi ty suoie slove virnoie* = держи ты свое слов(о) вѣрное (328), where the -*e* in *slove* (only form of its kind) cannot be explained otherwise.

substantive: *stanovistzo* = становище (106): this word in mod.R. can have either penultimate or antepenultimate stress. Fenne could have either of these two forms. At any rate, this is not a reliable instance of *e > o* in second posttonic syllable: even with antepenultimate stress, analogy with other words in -ище, most of which have penultimate stress, and regularly *e > o* in first posttonic syllable, was easy.

- I.sg f. *пословицою* (469) cannot be a case of *e > o*: the [e] is before [C'] ([j]); it is in analogy with the feminine hard stems; cf. also *sadnoi nogoi*, *саднои ногои* = задней ногой (78), *goretzoe, горяцое* = горячее (84).

- G.pl: *tovariszoff* = товарищев (316), *obrutzoff* = обручев (356); analogy with the hard stems and the cases where *e > o* in first posttonic or tonic syllable, like *rubloff* = рублев (418). There is not a single instance of G.pl -*ev*, which shows that, for Fenne at least, the G.pl was -*ov*, be it after hard or soft consonant.

- I.sg: *tovariszum* = товарищем (363, 435): same explanation.

- 1pl *vuikinum* = выкинем (262): but вы- is the only prefix attracting stress; накинуть, покинуть (both attested in Fenne) have stem stress, so that the 1pl would be накинём, regular in first posttonic syllable. Thus this one is analogical too.

- *tetieroff* = тетерев(ь) "grouse" (67), *iasvetzovy, ѣзвецовы* (111) = язвецовы: the suffix -*ev*- is only a variant of -*ov*-, and analogical reshaping after the latter is easy. Though *tetieroff* does not etymologically contain the possessive suffix,[43] it can be analyzed as a derivative in -*ev*- / -*ov*-. It is also possible that it must be read тетеров with a hard [r] (and an [o] not from [e]), attested in other northern dialects: [tet'ora], [tet'orka] in Arkhangelsk (*vs* lit. R. тетеря, тетерька, both with penultimate stress).[44]

Thus the few instances of ‹o› for [e] in second posttonic position are analogical. The [e] not subject to any morphological analogy remains [e] in second posttonic syllable, *e.g. gol(l)oden* = голоден (77, 139). In the same sentence we find *buitt veszoll: rodosten: da poteszon* = будь весел / радостен да потѣшен (226), where *e > o* affects the tonic syllable (*veszoll, poteszon*), but not the second posttonic (*rodosten*); ‹o› is consistent where we know the change occurred, so that the ‹e› in *rodosten* cannot be attributed to an influence

---

43. It is originally an *i*-stem, and the *i*-inflection was still found in the 16th c., cf. Unbegaun 1935, 69, 189.
44. Vasmer, REW, s.v.

of Cyrillic spelling.[45] The distribution of [e] and ['o] variants for the Past Passive Participle is: ‹o› or ‹e› in tonic or first posttonic, but only ‹e› in second posttonic syllable. Verbal endings in second posttonic syllable are always spelled with ‹e› or ‹i› (*ikan'e*), never ‹o› (except *vuikinum* 262, cf. above), whereas the change is attested in tonic (*biott* = бьет 206), or first posttonic syllable (*torguiut* = торгует 358, with ‹u› for ‹o›).

Conclusion

The data from Fenne's *Manual* confirm those of the BBLs. The role of morphological analogy is as important. In endings particularly, the spellings cannot be trusted, because Fenne did not master perfectly the case system of Russian and his confusions are numerous. Even so, it seems the change is limited to the same three positions—tonic, first pretonic, first posttonic—as in the BBLs: the few instances in second or third posttonic syllable can all be explained by a plausible analogy; otherwise [e] is preserved in these positions.

C. THE *e* > *o* CHANGE AND VOWEL LENGTH

VI.1. Following consonant

The traditional formulation of the *e* > *o* rule states that the conditioning factors are two at least: after soft consonant, before hard consonant or zero, and sometimes the position of stress. If the environment to the left, "after soft consonant," is the same for all dialects, the environment to the right is different. In fact, the only common point is a negative one: the change does not occur if [e] is before a soft consonant.[46] Thus BBLs' на Княжоосторови (324) can be a case of *e* > *o*, though [e] is not before hard consonant.

---

45. The first ‹o› represents an [a] under stress, either mistake due to Fenne's generalization of the equivalence ‹o› / ‹a› in unstressed position (*akan'e*), or graphic anticipation of the following ‹o›.

46. Wexler 1977, 111, Shevelov 1979, 143, Andersen 1978, 12.

VI. 2. Prosodic conditions

If the conditioning factor is not a following hard consonant, what is it?[47]
Andersen 1978 assumes a diphthongization of lax vowels, and states that this
diphthong, after soft consonant, had its first element reanalyzed as part of the
preceding palatalized consonant: [C'εo] > [C'jo] > [C'o].[48] Only a following
sharp consonant (non-grave) could prevent the reidentification of the second
element as /o/ (grave). He explains the fact that only some of the original *e's
in these conditions underwent the change by a prosodic factor, the length of
the diphthong. But diphthongization is intimately linked in itself with vowel
duration. German or English had it for long vowels. Romance languages,
which Andersen quotes as a parallel, had diphthongization only under stress,
that is, only for long vowels, new or old.[49] It seems more adequate to assume
that in Slavic, too, it occurred only when the vowel was long. This avoids the
problem of an unlikely diphthongization of short unstressed vowels. Thus,
length appears to be the real conditioning factor, and the rule can be
reformulated as: "e > o after [C'] in certain prosodic conditions (length), unless
followed by [C']."

The hypothesis that length is responsible for e > o is the most plausible
explanation for the restriction of e > o to the stressed syllable in some
dialects. It implies that these dialects had already replaced pitch by a dynamic
stress, as Andersen saw it. But what about other dialects? Either the change
occurred when the old prosodic system with pitch and independent vocalic
quantity was still alive, and in that case we expect the change to affect the
originally long vowels alone, or it occurred when this system had been
eliminated, and in that case there is no connection between e > o and old
length.[50] The first solution cannot be correct: e > o affects etymologically
short vowels (*e, *ь), and only in some dialects the etymologically long *ě.

---

47. Shevelov 1979, 159, assumes that e > o is "essentially an assimilative change. It was a
manifestation of the principle of vowel harmony, although on a limited scale, viz. within just
two contiguous syllables (disyllabic harmony)." This cannot be exact, for it does not account
for the cases of e > o in absolute auslaut, where [e] has nothing to assimilate to (word final e >
o is attested in some Ukrainian dialects, and of course in Russian and Belarusian). One cannot
dissociate the two cases and assume that e > o in absolute auslaut is to be explained differently
from e > o in internal position.

48. Presumably the palatal appendix of the preceding soft consonant, which could be
reinterpreted as the onset of a diphthong, was a key factor in this diphthongization process:
where the consonant was not sharp before /e/ (Ukr. for consonants other than palatals), the
diphthongization did not take place. This may be why there is no such diphthongization for [o]:
the preceding consonant is hard, that is to say, neutral, and has no labial appendix which could
lead to the same reinterpretation.

49. The old Latin system with independent quantity and stress was replaced in early Romance
by a system where all stressed vowels, and only these, were long.

50. It could also take place during a transitional phase, which is more difficult to determine.

Therefore these vowels must have been secondarily lengthened. Compensatory lengthening is not the cause: it is not reflected in Russian, and anyway it would account for only a fraction of the cases.

The *e* > *o* change in the BBLs and Fenne's *Manual* is clearly limited to three syllables: tonic, first pretonic, first posttonic. The BBLs in particular are precious for this inquiry, because they show no trace of vocalic reduction in unstressed position: this later phenomenon obscures the facts in many dialects. If *e* > *o* is linked with vocalic length, then not only the tonic vowel, but also the first pretonic and first posttonic must have been longer than the other ones. It is understandable that the two vowels closest to stress be longer than the other vowels of the word, if not as long as the tonic vowel itself: the more remote from stress a vowel is, the weaker, and also the shorter; the closer to stress, the stronger and the longer. This may be why the old pretonic length was preserved much better than length in other positions, and why northern dialects of Russian show a distinction of [o] and [a] (*okan'e*) in first pretonic syllable whereas they do not always in second pretonic position.[51]

But this presupposes a dynamic stress: pitch cannot have an effect on the relative duration of other vowels, whether lengthening of adjacent short vowels or shortening of remote long vowels; only a dynamic stress can do so. We are dealing here with a secondary, entirely predictable length, which has nothing to do with the old inherited length. These new long vowels are conditioned only by their vicinity to the stressed syllable. This situation is radically different from the earlier one, in which length was independent from accent, whereas this new length depends on stress. Even dialects where *e* > *o* is not restricted to the stressed syllable must already have had a dynamic stress when the change occurred.

VI. 3. Modern East Slavic languages and dialects

The hypothesis of a restriction to the tonic and immediately adjacent syllables finds some support in the modern data. The few cases of *e* > *o* in second pretonic syllable quoted by Shevelov for Ukrainian are analogical: *šoludyvyj* "scabby" (penultimate stress), is patterned on *šóludi* with initial stress; *čortenjá* "little devil" (final stress), on *čort*.[52] Once more, the only form resisting any explanation by analogy is *čolovík*, but this is probably not *e* > *o*, but a reshaping of the [eło] sequence after the pleophonic pattern [oło] (see above).

_____

51. Orlova 1970, 144.
52. Shevelov 1979, 144–47.

On the other hand, cases of [e] in second pretonic position with "an irregular *e*, while the phonetic conditions make us expect *o*"[53] are no longer "irregular" if *e* > *o* did not take place in second pretonic position. The situation in Russian and Belarusian is comparable. There does not seem to be any instance in second pretonic syllable that could not be reshaped after the base form. All the cases of *e* > *o* in second or third posttonic position are restricted to endings and suffixes, and are thus explainable by analogy. It is clear that the ['o] variant of endings was generalized:[54] these are not real cases of *e* > *o* but secondary developments.

It is therefore possible that the restriction that [e] not be distant from the tonic by more than one syllable was once effective in all East Slavic dialects, and that the original distribution was eliminated by analogy. The case of the shortening of *ě* > *e* in "pre-pretonic syllable" (i.e. second or third pretonic) in Ukrainian, whereas it was not shortened in first pretonic position,[55] supports the hypothesis of a particular status for the latter: it implies that length was eliminated first elsewhere than in those positions where an inherited long vowel could survive longer, protected by the vicinity of stress.

That some dialects do not show *e* > *o* in final position is probably to be explained with Andersen by the fact that they did not tolerate final long vowels, either original (hence shortening) or secondary (hence the absence of diphthongization), even under stress. This may go along with a better preservation of pretonic length than of posttonic length in general. The fact that some dialects apparently do not have *e* > *o* even under stress is not an objection. The situation here is not clear: in these dialects the number of cases of [e] preserved under stress is very small; they are exceptions among a large majority of [o] in the same environment.[56] Do they represent an archaism, in which case forms with *e* > *o*, which constitute the majority, are borrowings from other dialects or due to "analogical levelling"?[57] Analogy is obviously a factor, but explains [e], not ['o]: most of the instances of stressed [e] before hard consonant[58] can be related to a form where [e] is either unstressed or before soft consonant. There are comparable instances in literary Russian: the N.pl ветлы is reshaped after the G.pl ветел, dialectal G.pl [v'otel] after the

53. Shevelov 1979, 146.
54. The same development took place extensively in Ukrainian, cf. Shevelov 1979, 648–49.
55. Shevelov 1979, 112.
56. Orlova 1970, 22, who also points out that these are mainly peripheral dialects.
57. Andersen 1978, 4; but one wonders about the source of the analogy, if these dialects had no *e* > *o* at all.
58. Orlova 1970, 157; Filin 1972, 196.

N.pl [v'otly],[59] and nobody assumes on these grounds that literary Russian did not know the *e* > *o* change under stress[60].

The case of dialects where *e* > *o* affected *ě* only when unstressed does not contradict the assumption that there was a diphthongization in the required length condition (under stress or in immediately adjacent syllable). It does not mean that first pre- / posttonic *ě* was longer than tonic *ě*. It is traditionally assumed that *ě* under stress yielded a tense [e], whereas it was interpreted as a lax [ɛ] in unstressed position, merging with original *e*. Tense vowels are less subject to diphthongization than lax ones. Thus we can assume that *ě* realized as a tense [e] under stress did not diphthongize, but, realized as [ɛ], did in the proper length conditions (first pre-/posttonic syllable), and remained unchanged in other unstressed positions, where it had been shortened. Thus the diphthongization of long vowels is posterior to the split of original *ě*, which attests the elimination of the inherited length distinction, and therefore to the rise of the dynamic stress. In some dialects the change also affected a stressed *ě*: [tel'oga] (телѣга), [bes'oda] (бесѣда).[61] This implies that *ě* had merged with *e* in all positions when *e* > *o* occurred.

Conclusion

It seems that, even in the dialects where the process had its largest scope, *e* > *o* was originally restricted to three positions: tonic, first pretonic, first

---

59. Borkovskij-Kuznecov 1965, 134.

60. The case of Ukrainian dialects without the reflex of *e* > *o* for an old tonic strong (before a weak jer) **e* (*med* < *médъ), whereas they have it for neo-acute (originally pretonic) **e* (*nis* < *n'uos < *nlesъ) does not mean that in these dialects the first pretonic was longer than the tonic and that the latter did not undergo the change, for they have regularly *e* > *o* under stress after palatal consonant (*žovtyj* = R. жёлтый); therefore this has to do with the nature of the preceding consonant and not with the position of stress. Besides, [e] in *nlesъ was no longer pretonic by the time of the change: the neo-acute retraction is Common Slavic, whereas the *e* > *o* change is not. That the same dialects have *med* (without *e* > *o*) and *nis* (with *e* > *o*) must be explained by the fact that the neo-acute retraction yielded a longer vowel than did the ordinary compensatory lengthening, cf. neo-acute [ô] in northern Russian dialects. But the system did not have three distinct quantities, and thus the vowel with an intermediate status fell into one of the two categories, viz. long and short vowels. In some dialects the [e] in *médъ was treated as a long vowel, as the [e] in *nlesъ, and the preceding consonant remained soft before this long [ê], as before the other long front mid vowel *ě*, hence *e* > *o* in both cases, even after non palatal consonant. In other dialects the [e] in *médъ, not as long as the neo-acute of *nlesъ, was treated as a short vowel and the preceding consonant remained soft only before neo-acute [ê], as before *ě*, but became plain (hard) before the old strong [e], as before a short [e], hence *e* > *o* in one case only. That this [ê] was longer than a weak [e], even under stress and undergoing *e* > *o* (after palatal consonant only), is shown by the reflexes of both: the latter yields a non-diphthongal outcome [o], [ê] yields a diphthong which is preserved in some dialects (after any consonant, palatal or not), and monophthongized in others.

61. Filin 1972, 194, who points out that all instances under stress cannot be explained by analogy.

posttonic, in other dialects it is even more restricted. This is based on the analysis of the facts in the BBLs and in Fenne, where all the instances in second posttonic position are "represented only in endings, and therefore unreliable,"[62] and can be explained by an analogical extension of the ['o] allophone. The only instance in second pretonic syllable can be explained otherwise. We do not mean hereby that all dialects had the change in these three positions, which obviously was not the case. The BBLs and Fenne represent two geographically close dialects, and the indications they provide cannot be readily generalized to all East Slavic dialects. But the situation in dialects where *e > o* seems independent from stress can always be derived from the situation found in these documents, that is, from a stage where the change was limited to these three positions: analogy has obscured the original distribution.

This suggests that there could have been a stage with a special prosodic status for the first pre- / posttonic position, namely that these syllables may have been longer than other unstressed vowels; in some dialects an [e] of this intermediate type was treated like a long (stressed) [e] and diphthongized, in other dialects it was treated like a short (unstressed) [e]. This stage with longer first pre- / posttonic syllables has nothing to do with the old prosodic system with pitch and quantity. It must be posterior to the rise of a dynamic stress, which is the only way to explain this secondary length for originally short vowels, even in dialects where *e > o* is not restricted to stressed syllables.

PART TWO: THE N.SG M. *-e*

Let us now apply these conclusions to Vermeer's hypothesis that *-e* was realized as ['o] in the N.sg m. As was said above, this category does not show *e > o*. After all, however, ‹e› is also a possible conservative spelling for ['o]. Yet a conservative spelling is difficult to admit for a purely dialectal ending: *-e* is found neither in Church Slavonic nor in literary Old Rusian; since in any case it does not conform to the norm, the only possible spelling is the phonetic one. Furthermore, there are arguments to suggest that in the case of the N.sg m., what was written ‹e› was really pronounced [e], and not ['o].

---

62. Wexler 1977, 112: though his formula does not apply to this analogical process on the whole, but only to cases of [c'o] in Belarusian, it is generally true.

VII.1. Inconsistencies in writing?

The ending -*e* of the N.sg m. is mostly an archaic feature, predominant in the eleventh–twelfth centuries,[63] then gradually replaced by -ъ / -*o*, the regular Slavic ending. If we admit the date of the mid–twelfth century for the *e* > *o* change, it is possible that the ending -*e* was realized as ['o] from 1150 on, but written ‹e› all the way down to the most recent period. But then why do all the letters with *e* > *o* have only ‹e› (‹ь›) for the N.sg m.? The best instance is Стопане 169: the same word shows the different status of the two [e]'s, but cf. also 24, 43, 53, 68, 99, 243, 288, 300, 307, 310, 362, 366, 413, 415, 417; 413 is consistent in having ‹o› for ['o] (4 times) but has ‹e› (‹ь›) twice for the N.sg m., and the same holds true for 288. Thus the BBLs themselves indicate that this ‹e› was not a ['o]. This is confirmed by Fenne.

VII.2. Fenne

Fenne has some relic forms with the N.sg m. ending -*e* (*vinovate* 208, *same* 203, *ostales* 211 etc.),[64] and it is never written ‹o›. This is not because of the special status of -*e* in absolute auslaut, even unstressed: cf. n. *solntzo* = солнце, *orudio* = орудье, with *e* > *o*. Neither is it due to any literary influence, as for the suffix -ние: the standard language, and the church language, do not know the dialectal ending -*e*. Fenne's testimony shows that the N.sg m. ending -*e* was not pronounced ['o].

VII.3. Modern dialects

Some northern dialects preserve even nowadays relics of the N.sg m. ending -*e*: [ps'e] (Pskov), [voronk'e], [bratk'e] (Olonec)[65]: these forms have a final ['e], not ['o]. Either *e* > *o* took place and something subsequently "undid" the phonetic change, or *e* > *o* never applied to the N.sg m. -*e*. No phonetic change or morphological analogy could possibly have changed an ['o] to ['e]. Therefore the second solution is the only one left: this -*e* was a regular [e] since the time of the BBLs, and one cannot assume that the N.sg m. ending written ‹o› or ‹ъ› represents ['o]: it can only be the "standard" ending -ъ > Ø.

---

63. Zaliznjak 1986, 63.
64. Schaeken 1992; -*e* is best preserved after a consonant cluster, where the standard ending -ъ > Ø would have altered the shape of the word, either because of cluster simplification or by insertion of a fleeting vowel.
65. Zaliznjak 1991, 233 and NGB 1993, 210; as was the case for Fenne, N.sg m. -*e* is preserved when a consonant cluster precedes.

As a matter of fact, ‹o› appears mainly in texts which otherwise show the confusion between ‹o› and ‹ъ›.

The reasons why this [e] did not undergo the change are not explained hereby. It is clear from ещо 494 and Fenne's data that it cannot be related to the absolute final position.

VIII. Phonetic or Morphological Explanation?

VIII.1. Phonetic explanation: the problem of the quality of the preceding consonant

There could be a possible explanation found in the fact that $e > o$ happens only after soft consonant. But it is not clear whether the consonant was really soft before the -e of N.sg m. Of course, softness is not indicated in the writing system, but it has been proposed that the consonant may have been, at some point in history, neutral before -e: velars are never replaced by palatals before this ending, whereas in the Vocative they are. This led Zaliznjak[66] to propose that the ending was initially [ə], which later on merged with [e]. The reason why $e > o$ does not affect the N.sg m. -e could then be that it was not after a soft consonant. Could the dialect of Novgorod have [e] both after soft and hard consonant, the latter only in one isolated case form? This would be very unusual, to say the least, for a Slavic dialect.

Several facts make it unlikely that the consonant was hard before the -e of N.sg: Pskovian *jakan'e* in final position affects also the N.sg; and *jakan'e* being the neutralization of unstressed vowels after soft consonants, N.sg m. forms like Иева, Филипа, двора,[67] attested in Pskovian documents from the fourteenth century on, imply [C'e]. Fenne has similar forms: N.sg m. *sapovedanæ, saklikanæ* = заповѣдане, закликане (408); ‹æ› is his regular way of denoting ['a], cf. *otmenæ* = от меня, *opæt* = опять etc. Modern dialectal forms preserving the archaic ending -e also have a soft stem-final consonant.

In the BBLs there are only a few forms showing *jakan'e*, and none of them is a N.sg m. But we have no reason to believe that the situation was different from the Pskovian one, and that the consonant was soft before -e in one place and hard in the other. Furthermore, if one follows Zaliznjak's analysis[68] of the form меретве 582 (13th century[2]), the second ‹e›, which is the equivalent of ‹ъ› (second pleophony in weak position), indicates that the preceding [r] is

---

66. Zaliznjak 1988, 170; id. 1991, 235.
67. Zaliznjak 1991, 235.
68. Zaliznjak 1991, 235.

soft, assimilated in softness to the following consonant, or consonant cluster. Therefore the form is [m'er't'v'e], with [C'] before -e as early as the thirteenth century.

More convincing evidence against the hypothesis of a preceding hard consonant can be found in the BBLs: forms which have the ending -e for N.sg, if they have an [e] in the preceding syllable, never show the effect of e > o for this predesinential [e]: дешеве 424 (mod.R. дешёвый), меретве 582 (mod.R. мёртвый), Петре 343, 506 (mod.R. Пётр, cf. Потра 53), свекре 580 (mod.R. свёкор) etc. With the ending -ъ / -Ø, the change is attested (уроклъ 724, second half of the twelfth century), whereas it is not with the ending -e (рекле 748, second half of the twelfth century). This can be readily explained by the fact that the predesinential [e] was before a soft consonant. Of course, it can as well simply reflect graphic conservatism: other forms of these words also have ‹e›, even before hard consonant (n. дешево 404, G.sg Петра 220 etc.). But the fact that the ending -e is *never* found together with the e > o change in the predesinential syllable, in words which regularly have ['o], is probably not the result of mere chance, but is likely to indicate that the consonant was soft before -e.

We find a confirmation in Fenne with the doublet *vperles: vporsi* = уперлесь / упёрси (357),[69] or the Past Passive Participle *chitrene* = хитрене (305) *vs schitron* = схитрён (320, 378), parallel to the pair уроклъ / рекле found in the BBLs. Fenne does not have many forms with N.sg -e and an [e] in the preceding syllable, but when such forms occur, the predesinential [e] never undergoes e > o, whereas it does regularly with the regular zero-ending. It is true that the same forms are also attested without e > o with the zero-ending: *schitren* = схитрен (339), *priveszen* = привезен (275). Since we know the change took place in these cases, the spelling ‹e› must be viewed as an influence of the Cyrillic spelling, which Fenne was familiar with. But this cannot apply to the cases with N.sg -e: none of these forms is attested elsewhere with ‹o› in the predesinential syllable; the change is consistently absent. Above all, the fact that Fenne himself gives explicitly уперлесь / упёрси as a doublet shows that it is not a matter of spelling. When he gives doublets of this type, he faithfully mirrors phonetic reality. If he never writes ‹o› in these forms, we must assume that this was not an ['o]: the spelling ‹e› in the predesinential syllable is phonetic. The same probably applies to

---

69. The second form is based on упёр < *уперлъ. One can compare заперлесь (209), поперлесь (209, written *popererles*), where the ending -e blocks again the e > o change in the predesinential syllable. The forms *saperse, poperse* = за-, поперся (177) do not show e > o, but it is probably because they are given in the first part of the *Manual*, the vocabulary, which, as was already said, is more conservative and reflects more the standard norm than the Pskovian dialect from this point of view.

privesanæ = привезене (416) *vs priveszon* = привезён (276, 323), but here the spelling ‹a›, misspelling or reflex of *jakan'e*, obscures the facts.

Thus the consonant before *-e* had to be soft early enough to block the *e* > *o* rule in the preceding syllable.[70] Whether the consonant was always soft before the ending *-e* or was initially hard and softened only afterwards, this cannot explain the absence of *e* > *o* in the N.sg, because it was already soft at the time of the change, that is, no later than the twelfth century.

VIII.2. Morphological explanation

VIII.2.a) A problem of stress?

A possible answer to the problem lies in the relation to stress. The only instance of *e* > *o* in word final position in the BBLs is ещо, where [e] is under stress. But the position of stress varies in the case of the N.sg m. *-e*: it can be assumed that in most cases, the ending was not stressed. If in many cases [e] was in first posttonic position (внуке 289, заходиле 705 etc.), where *e* > *o* is regular, in many cases too the ending was in second posttonic (виделе 154, игоумене 605, пасынке 415), or even third posttonic syllable (выгониле 415), where *e* > *o* is not expected. A purely phonetic application of the rule would have led to a split between two variants of the same ending, *-e* and *-o*. In such a situation one would expect one of the allomorphs to be generalized, morphological coherence overcoming the purely phonetic developments.

It is true that there are instances in the BBLs where the change took place in a nominal ending, with the result of two allomorphs: I.sg плацомо 415, G.pl вымолчовъ 248, D.pl людомъ 364. But this is a different case: the two variants -омь and -емь, -овъ and -евъ, -омъ and -емъ already existed in the system, corresponding to the distinction between hard and soft stems; once the softness correlation is established, -омь and -емь are predictable allophones. The change in these cases did not create a new ending; rather, the ending fell together with the already existing hard variant: the form was still unmistakably I.sg, G.pl, D.pl. But for the N.sg m. there was no such thing.

---

70. Thus Schaeken 1992, 287 is right in assuming that the form *rosvogel* (441) stands for розвёгл, as Jakobson has it, but probably wrong when he says that "die Emendation *rosvogle* natürlich durchaus möglich ist": the very fact that this form shows *e* > *o* in the predesinential syllable precludes the possibility of the ending *-e*. The ‹e› must be a cluster-breaking vowel. But *розвёгле is an impossible form: the only two possible forms for the perfect are розвёгл and розвегле. The form *rosvogel* has the regular zero-ending. The final ‹ь› in the Cyrillic spelling жжоглъ (245) does of course not indicate that the consonant is soft: Fenne never indicates the softness of consonants, be it before vowels or before consonants or in final position; here he simply follows the orthographic rule that no word ends with a consonant, and uses any of the jer letters: cf. his different spellings for the perfect всталь (492), перемѣтиль (445) / былъ (488).

The ending had no counterpart: the N.sg m. of soft stems was -ь, that is, -Ø, the "standard" equivalent for the hard stems -ъ, also -Ø at the time of $e > o$,[71] which could be *written* ‹o›, but was not *pronounced* [o]. The problem is that -*e* is not here the characteristic of the soft type, but of the hard type, so that the variants could not be interpreted according to the allophonic relation between hard and soft endings.

VIII.2.b) Gender distinction

But the main reason why the ending -*e* did not participate in $e > o$ is certainly that -*o* is the neuter ending *par excellence* in Slavic. No animate stem has -*o*, except names in -ко, but proper names are a category of their own from the morphological point of view, and these hypocoristics are etymologically neuters, even though they were no longer perceived as such synchronically.[72] Because of the special status of appellatives, they were too isolated to serve as a model for a new ending -*o*. In fact, the ending -*o* was so uncommon for masculines that in the BBLs even these names in -ко analogically take the ending -*e*, after other masculines: cf. N.sg Иваноке In.20, Лазъвке 105, Михеике 521 etc. The old N.sg in -ко is attested in the BBLs, but there is only a handful of examples, found mainly in texts which otherwise have the zero-ending for the N.sg m., and not -*e*, or show other non-Novgorodian features: Гавъко 502, Мѣкѣфорко 314, Осипоко 477. These are the "standard" forms, showing probably that the persons bearing names in -ко instead of dialectal -ке were of non-Novgorodian origin. The regular dialectal form was -ке, and not the inherited -ко. With this development, Old Novgorodian was eliminating the only exception to the distribution of -*o*, and following an old tendency. Common Slavic has redistributed masculine and neuter endings -*o* and -*ŭ* for the N.Acc.sg, regardless of the regular phonetic outcome, and has reorganized the system around a clear-cut opposition: neuters have -*o*, whether etymologically *s*-stems or thematic stems, masculines have -*ŭ*, whether old *u*-stems or thematic stems. Thus -*o* is precluded for a non-neuter stem. A N.sg m. ending -*o* is impossible in a Slavic language, except for appellatives, which are not subject to the same set of rules. And even though the case system of Old Novgorodian differed to a certain extent from

---

71. Zaliznjak, NGB 1993, 264.
72. The hypothesis that names in -ко are not etymologically neuters, but masculines, and that this is a reflex of PIE *-*os* > -*o* in word-final position (Vermeer 1991) is hard to accept: the well-known affinity between hypocoristic formations, often used as appellatives, and neuter gender is attested in other Indo-European languages, such as Greek (cf. *paidion, Euripidion*, mod.G. *paidi, koritsi*) or German (cf. *fräulein, söhnchen, Gretchen*); all the Slavic languages use -ко for hypocoristics (Vaillant, GCLS 4, 390–92), especially for kinship terms (Bulg., S.Cr., Pol.), which is exactly parallel to the use of -*chen* in German or -*ion* in Greek.

that of other Slavic dialects, the restriction of -*o* to neuters was as valid as anywhere else, if not more, as is shown by the new forms in -ке mentioned above. The reason for the absence of *e* > *o* in the N.sg m. is not phonetic, but morphological: the change was not allowed by the gender system of the language.

VIII.2.c) Morphological consequences of the e > o change in modern Russian

It is clear that the *e* > *o* change played an important part in the confusion of the soft and hard types in favor of the hard type: it always merges the soft variant with the hard one. This is a unidirectional change. If one compares what has been proposed by Mareš,[73] viz. that all Slavic languages tend to unify the soft and hard types, but languages without softness correlation tend to generalize the soft endings, whereas languages with correlation tend to generalize the hard endings, the link is clear: only languages with correlation have *e* > *o*, and this change appears to be a factor of generalization of the hard type endings. How important this factor really was cannot be estimated, but its role was certainly far from negligible. The change introduced the hard ending into the soft paradigm, whereas no parallel sound change introduced the soft ending into the hard paradigm.[74] Thus the originally hard ending could be found both in the hard and in the soft paradigms, whereas the originally soft ending was still limited to soft stems. Consequently the variant with the larger extension was generalized at the expense of that with the lesser extension, and the soft paradigm adopted the endings of the hard paradigm. The phonetic change introduced this innovation in a certain number of case forms only, but once the originally soft and hard endings had merged in these case forms, the extension of the hard variant could spread to other case forms analogically.

One could object that in modern Russian, for the cases with desinential vowels [e], [o], the hard and soft paradigms do not merge: the I.sg, G.pl still have -ом / -ем, -ов / -ев.[75] But this is only apparent, for [e] in the soft paradigm is only a realization of an unstressed underlying /o/, so that the ending is in fact the hard paradigm's ending. Thus the change appears to be an important factor in the reshaping of nominal paradigms.

---

73. Mareš 1968.
74. The opposite process is attested in the BBLs, where soft endings have been extended in some cases to the hard paradigm. It would be too long to discuss this point here. We consider here literary Russian.
75. The G.pl is a particular case, because of the redistribution of -ев and -ей in mod. R. Because of the extension of the *a*-stems' endings in the D.I.L.pl, mod. R. has lost the opposition -ом / -ем in the D.pl: this reshaping of the plural is posterior to *e* > *o* (see above, II.1.).

Conclusion

The *e* > *o* change is attested in the BBLs from the twelfth century on. This corresponds to the traditional chronology. However, it is mainly attested in the fourteenth and fifteenth centuries. The presence of *e* > *o* in the BBLs proves that the softness correlation was phonemic: once /Co/ and /C'o/ can contrast, the phonemic status is unquestionable. The change was restricted to the stressed syllable or the immediately adjacent syllable (first pre- / posttonic), provided the preceding consonant was soft and the following one was not. From the phonetic point of view, it is likely that it was a diphthongization process, and as such affected only long vowels: but since both **e* and **ь* are etymologically short vowels, we have to assume that they were secondarily lengthened. This secondary length is impossible to explain under the old prosodic system with pitch and independent quantity, whereas it is readily understandable under the new system with dynamic stress, in which the old length distinctions have been eliminated. The positional restriction could mean that the first pre- / posttonic syllables were, or had been in an earlier stage, longer than the other unstressed vowels, and were treated in some dialects as long vowels, in others as short vowels. The only case with [o] from [e] in another position (чоловѣкъ) probably does not reflect *e* > *o*; for endings, morphological analogy interferes with the phonological development. The same is true of seventeenth century Pskovian, as it is reflected in Fenne's *Manual*. Finally, it is likely that this change had an important role in the reshaping of the Russian morphological system.

Nothing allows us to assume that the N.sg m. *-e* was realized as ['o]: the BBLs themselves, Fenne's testimony, Pskovian documents, and modern dialects all agree on a phonetic value ['e]. The ending written ‹o› (‹ъ›) in the BBLs is the "standard" ending, that is, the regular Slavic *-ъ* (> Ø), and does not represent ['o] < [e]. The N.sg m. ending *-e* was never changed to ['o]. The reason is probably that *-o* is characteristic of neuter stems: an ending *-o* for masculines was precluded by the morphological system.

École Pratique des Hautes Études

REFERENCES

Texts:

Arcixovskij, A. V. 1953, 1954; Arcixovskij, A. V., and V. I. Borkovskij 1958a, 1958b, 1963; Arcixovskij, A. V. 1963; Arcixovskij, A. V., and V. L. Janin 1978; Janin, V. L., and A. A. Zaliznjak 1986, 1993. *Novgorodskie gramoty na bereste.* Moscow (abbreviation: NGB).

Janin, V. L., and A. A. Zaliznjak. 1994. Berestjanyje gramoty iz novgorodskix raskopok 1990–1993 gg. In *Voprosy Jazykoznanija* n° 3, 3–22 (temporary publication).

Hammerich, L. L., and R. Jakobson. *Tönnies Fenne's Low German manual of spoken Russian, Pskov 1607.* Copenhagen. Vol. 1: Facsimile copy (1961); vol. 2: Transliteration and translation (1970); vol. 3: Russian-Low German glossary (ed. A. H. van den Baar, 1985); vol. 4: Mittelniederdeutsch-neuhochdeutsch Wörterbuch zum Russisch-niederdeutschen Gesprächsbuch (H. J. Gernentz, 1986).

Nasonov, A. N. 1950. *Novgorodskaja Pervaja Letopis' staršego i mladšego izvodov.* Moscow-Leningrad.

———. 1955. *Pskovskie Letopisi.* Moscow-Leningrad.

Valk, S. N. 1949. *Gramoty Velikogo Novgoroda i Pskova.* Moscow-Leningrad.

General and specific studies:

Andersen, H. 1978. Perceptual and conceptual factors in abductive innovations. In *Recent Developments in Historical Phonology,* edited by J. Fisiak, 1–22 [=*Trends in Linguistics Studies and Monographs* 4]. The Hague/Paris/New York: Mouton.

Birnbaum, H. 1991. Reflections on the language of medieval Novgorod. *Russian Linguistics* 15/3:195–215.

Borkovskij, V. I ., and P. S. Kuznecov. 1965. *Istoričeskaiagrammatika russkogo jazyka.* Moscow.

Filin, F. P. 1972. *Proisxoždenie russkogo, ukrainskogo i belorusskogo jazykov. Istoriko-dialektologičeskij očerk.* St. Petersburg [Leningrad].

Kiparsky, V. RHG. *Russische Historische Grammatik.* 1: *Die Entwicklung des Lautsystems* (1963); 2: *Die Entwicklung des Formensystems* (1967); 3: *Entwicklung des Wortschatzes* (1975). Heidelberg.

Krajčovič, R. 1975. *A historical phonology of the Slovak language.* Heidelberg.

Malkova, O. V. 1981. K probleme vtorogo polnoglasija. *Voprosy jazykoznanija* 6:97–108.

Mareš, F. 1968. The historical development of the slavic noun declension: II. The development of forms. In *Československé přednásky pro VI mezinárodni sjezd slavistu v Praze*, 37–46. Prague.

Orlova, V. G. 1970. *Obrazovanie severnorusskogo narečija i srednerusskix govorov*. Moscow.

Schaeken, J. 1992. Zum nordrussischen Nominativ Singular auf *-e* im Gesprächsbuch des Tönnies Fenne (Pskov 1607). In *Studies in Russian Linguistics* 285–93 [=*Studies in Slavic and General Linguistics*, vol. 17]. Amsterdam.

Shevelov, G. Y. 1979. *A historical phonology of the Ukrainian language*. Heidelberg.

Stankiewicz, E. 1986. *The Slavic languages: Unity in Diversity*. Berlin/New York/Amsterdam: Mouton de Gruyter.

Unbegaun, B. 1935. *La langue russe au XVI° siècle*. Paris.

Vaillant, A., GCLS: *Grammaire comparée des langues Slaves*. 1: *Phonétique* (1950); 2: *Morphologie* (1958); 3: *Le verbe* (1966); 4: *La formation des noms* (1974); 5: *La syntaxe* (1977). Paris.

Vermeer, W. 1991. The mysterious North Russian Nominative singular ending *-e* and the problem of the reflex of Proto-Indo-European *-os* in Slavic. *Die Welt der Slaven* 36:271–95.

———. 1994. On explaining why the Early North Russian nominative singular in *-e* does not palatalize stem-final velars. *Russian Linguistics* 18/2:145–57.

Wexler, P. 1977. *A historical phonology of the Belorussian language*. Heidelberg.

Worth, D. S. 1984. Incipits in the Novgorod birchbark letters. In *Semiosis, Semiotics and the History of Culture, in Honorem Georgii Lotman, Michigan Slavic Contributions*, ed. M. Halle, K. Pomorska, L. Matejka, B. Uspenskij, 320–32.

———. 1986. The chronology of the Novgorod birchbark letters. In *Studia slavica mediaevalia et humanistica Riccardo Picchio dicata*, edited by M. Colucci, G. Dell'Agata, H. Goldblatt, 785–96. Rome.

Zaliznjak, A. A. 1982. Protivopostavlenie knižnyx i bytovyx grafičeskix sistem v drevnem Novgorode. In *Finitis duodecim lustris, Sbornik statej k 60-letiju Prof. J. M. Lotman*, 82–85. Tallinn.

————. 1986. Drevnenovgorodskoe kojne. *Balto-slavjanskie Issledovanija*, 60–78.

————. 1988. Drevnenovgorodskij dialekt i problemy dialektnogo členenija pozdnego praslavjanskogo jazyka. In *Slavjanskoe jazykoznanie, X meždunarodnyj s'ezd slavistov*, 164–77. Sofia.

————. 1991. Berestjanyje gramoty pered licom tradicionnyx postulatov slavistiki i *vice versa. Russian Linguistics* 15/3: 217–45.

————. 1995. *Drevnenovgorodskij dialekt.* Moscow.