Do all varieties of East Slavic have first pretonic prominence?

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The East Slavic languages Ukrainian, Belarusian and Russian have a fascinating word prosody, which has also caught Tore Nesset's attention. In his article "A FOOTnote to the Jers: The Russian Trochee-Iamb Shift and Cognitive Linguistics" (Nesset 2016), he explains the substantial changes in the prosody of the word in East Slavic following the fall and vocalization of the *jers* as a phonological change from trochaic to iambic feet, i.e. from a bisyllabic rhythmic unit with its head first to a unit with a final head. He does this in his usual clear and elegant style.

Tore is interested in the structure behind the language we produce, without losing sight of the actual language users past and present. In the usage-based model in cognitive linguistics he applies, the grammar of a language, including its phonological system, is seen as generalizations that "grow out" of actual language usage events. Following Henning Andersen, Tore points out that each generation constructs a new grammar – and phonology – based on the input of the previous generation (2016:374).

This essay is about the fascinating, complex relationship between phonology and phonetics. Like Tore, I will address the interplay between actual language usage and phonological structure, but with phonetic data. I will try to show that actual, highly variable phonetic data can give evidence for a phonological rule.

We will not discuss Tore's analysis of East Slavic word prosody (although we could: The application of metrical theory with binary feet to Russian is not unproblematic and Tore's analysis with an iambic foot is not generally accepted). Instead, we will look at first pretonic prominence in modern East Slavic, i.e. at the prominence expressed on the first, unstressed syllable of Tore's iambic foot. By *prominence* I mean that the vowel stands out in at least one of the acoustic parameters: duration, quality, loudness or tone. All modern East Slavic languages have first pretonic prominence, which is typologically uncommon: The vowel immediately preceding the stress is relatively long compared to other unstressed vowels, especially in Central Standard Russian, where the non-high

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vowels /a, o/ in this first pretonic syllable, which I will call a_{-1}, also stand out in quality (after non-palatalized consonants). The word *molokó* 'milk' is typically pronounced [məlɐ'ko], with a short *schwa* before a much longer, low vowel, which often also has prominent loudness and tone.

The prosodic word in Standard Russian thus has vowel reduction in two degrees and a strong, bisyllabic centre, or *jadro* 'nucleus', to use a Russian term, or *iambic foot*, to use Tore's. This bisyllabic centre, consisting of the first pretonic and the tonic (stressed) syllable, is opposed to a weak periphery (Kasatkina 1996).[1]

The opposition between centre and periphery has a parallel in geography: The difference between the second and first pretonic vowel is strongest in central parts of the East Slavic dialect continuum, and becomes less pronounced when moving away from the centre (Post 2025a). A recent study, based on a reading task performed by 26 speakers in Moscow and Perm, shows that regional differences in first pretonic prominence are still found in modern urban Russian speech and thus is one of the few regional features heard in today's urban Russian speech (Post 2025a, b). An unusually long and low first pretonic [a] is a widely recognized sociolinguistic marker of Muscovite origins, according to Barnes (2007). In a footnote, he writes:

> "Purely anecdotally, ask nearly any native speaker of Russian for a characterization of a "Moscow accent", and the result will usually be an enthusiastically cartoonish rendition of the phrase *Ja iz Moskvy*, 'I am from Moscow' [...] rendered with first pretonic [a] in the initial syllable of Moscow extremely long, unmistakably low, and bearing a significant rising pitch contour" (Barnes 2007).

Vardøy's (2021) folk linguistic study confirmed that Moscovites are known for their prominent [a]-sounds. A Russian immigrant in Germany remarks that he speaks "an imperial Russian with a long drawn-out *a* for *o*, as it is spoken in Moscow, in Maaskvaa." In his conversations with a Ukrainian, "I try to spit out the *a* quickly" (my translations).[2]

Two questions arise: Why do the East Slavs put prominence on this unstressed vowel? And do *all* varieties of East Slavic actually have first pretonic prominence, if the prominence gets weaker towards the boundaries of the East Slavic dialect continuum?

To start with the first question: The literature on two degree reduction is extensive, but surprisingly few studies address its cause. Already in 1910, Tore's brilliant Norwegian predecessor Olaf Broch wondered whether the prominence of the first pretonic syllable in Russian is independent from the prominence of the following stressed syllable, or part of the same expiratory wave (*ėkspiratornaja volna*), as he called it (Brok 1910:225). More than 100 years and numerous studies later, the final word has

[1] For recent discussions and references, see e.g. Mołczanow 2022 and Post 2025b.

[2] "Ich spreche ein Imperialrussisch mit langgezogenem a statt o, wie man es in Moskau spricht, in Maaskwaa."; "ich versuche, das a schnell auszuspucken." (Boris Schumatsky, "Die russische Schuld", *Frankfurter Allgemeine Sonntagszeitung* Nr. 21, 29. Mai 2022)

not been said about the matter, but a plausible explanation is that the expression of what Dubina calls the prominence of the word is not restricted to the stressed syllable, but starts on the preceding one (cf. Dubina 2012), in other words, that it spreads from the head to the first syllable of Tore's iambic foot.[3]

My second and main question was whether East Slavic has varieties that lack first pretonic prominence, and, on a phonological level, a bisyllabic word centre. Knjazev considers this a major question in Russian dialectology (Knjazev 2006:142). Less reduction of the first pretonic vowel has been suggested even for Bulgarian, a language outside East Slavic, but a recent empirical study did not find evidence for this claim, which was not based on empirical data (Sabev 2023).

In (Standard) Belarusian and Ukrainian, the durational difference between second and first pretonic vowel is smaller than in Central Standard Russian, but even in a study of speech from Western Ukraine, in the periphery of the East Slavic dialect continuum, the first pretonic was slightly longer, even though Ukrainian lacks vowel neutralization with lowering to [a] and it has iterative secondary stress, which lengthens the second pretonics and thereby weakens the relative duration of the first pretonics (Łukaszewicz & Mołczanow 2018). Knjazev (2006), however, claims that many Russian rural dialects do not have a bisyllabic nucleus, neither do most northern dialects (Knjazev 2006:161; Duryagin & Knjazev 2022:58), nor part of the dialects that do have *akan'e* (neutralization) in the south (2006:162), with a reference to Vysotskij (1973), who measured vowel durations in 15 Russian dialect groups. The Russian rural dialects indeed show large differences in first syllable prominence (e.g. Vysotskij 1973; Post 2025a). In Vysotskij's data, however, some Northern Russian dialects actually have a much shorter a_{-2} than a_{-1}, and even in those that did have roughly the same durations in second (a_{-2}) and first (a_{-1}) pretonic position, a_{-1} was slightly longer (Vysotskij 1973:38-40). To our surprise, we found almost equal durations also in recent data of modern urban speech from Perm, a Russian variety with northern Russian features. In the speech of 13 girls and boys from Perm, the small difference in mean durations was not statistically significant, nor was the difference in F1 values, which reflect the vowel quality (in a reading task with the target words *topotát'*, *pokopát'* and *potakát'*; For details, see Post 20025a, b).

Can we conclude from these phonetic data that the word in Perm does not have a bisyllabic centre? This question is not easy to answer: The problem is the distance between phonology and phonetics. Surface phonetics is the sum of a large array of factors influencing the actual pronunciation of a word, of both linguistic and sociolinguistic nature, in addition to individual characteristics of the speakers. The

[3] This essay has no room to argue for this explanation, nor to discuss other unresolved issues about first pretonic prominence, such as the role of duration, vowel quality, tone and accentuation, and the conditions of non-low vowels. I will address some of them, among others, tone, in a upcoming article.

actual prominence parameters are extremely dependent on the prosodic conditions, and on the way the speaker chooses to express the word in each specific utterance. Our data reflect these individual differences. Some speakers read the sentences in the reading task with similar intonation and rhythmic patterns, but several participants had a creative approach to the task and pronounced the words with varying phrasing, focus and pitch accents. Fig. 1 gives an example. Speaker M11F pronounced the sentence *Ja topotát' uže ne búdu* 'I won't stamp feet anymore' twice, first with broad focus and rising pitch on *topotát'* (Fig. 1, left), then with contrastive focus and a sharp rise on the preceding word (*ja* 'I'; Fig. 1, right), leading to a deaccented target word *topotát'* with a steep fall in F0 (the blue line). Fig. 1 and 2 show the first two words, *Ja topotát'*, spoken with and without a pitch accent. We see large differences between the vowels in several acoustic parameters, but speakers of Russian will normally perceive the last syllable (*-tát'*) as lexically stressed in either case, since a vowel is prominent relative to its prosodic context and according to the speaker's expectations. I expect that a Russian speaker recognizes the lexical stress from the pronunciation of the first pretonic and tonic (stressed) syllables together.

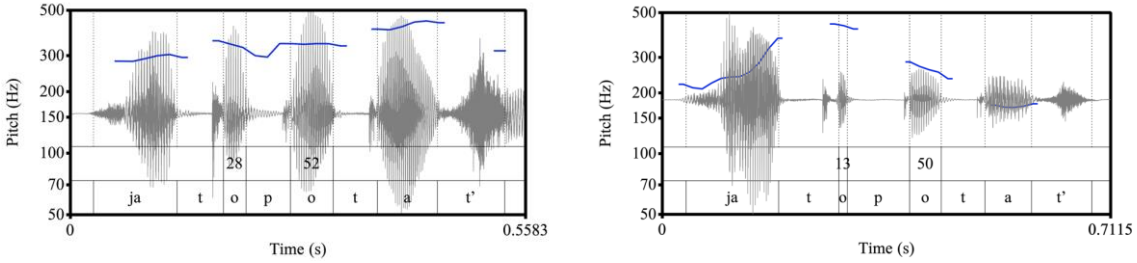


Fig. 1. Start of the utterance 'Ja topotát' uže ne búdu', in two different renditions by speaker M11F from Moscow, in Praat (Boersma & Weenink 1992-2026), showing oscillogram, F0 curve (blue line) and durations of the pretonic vowels in ms.

Most phonetic studies do not allow for such a high level of variation and are limited to one specific context in order to get comparable data. A drawback of these studies is their limited explanatory power for the many other possible conditions. In our study, we allowed for a much larger array of conditions than usual (variable positions in the utterance, focus patterns and pitch accents). We nonetheless found a stable difference between the pretonic positions in Moscow. The Moscow speakers whom Benedikte Vardøy and I recorded did not produce the stereotypical prolonged, prominent a's in first pretonic position. Their mean duration was only approx. 50 ms, often shorter than the surrounding consonants, but they were still on average twice as long as the preceding vowel. This change in duration from a_{-2} to a_{-1} was surprisingly stable across conditions and across speakers (Post 2025a, b). The vowel a_{-2} was much shorter than a_{-1} in nearly all pronunciations, despite highly variable prosodic contexts, such as in Fig. 1. a_{-1} is considerably longer and has higher intensity than a_{-2} in both renditions, even with

radically different focus and pitch patterns. Figure 2 below represents all productions of the trisyllabic target words by the girls in Moscow (left) and Perm (right). The figure for Moscow has only one falling line, so there is only one exception to the rule that a_{-2} is (usually much) shorter than a_{-1} in Moscow.

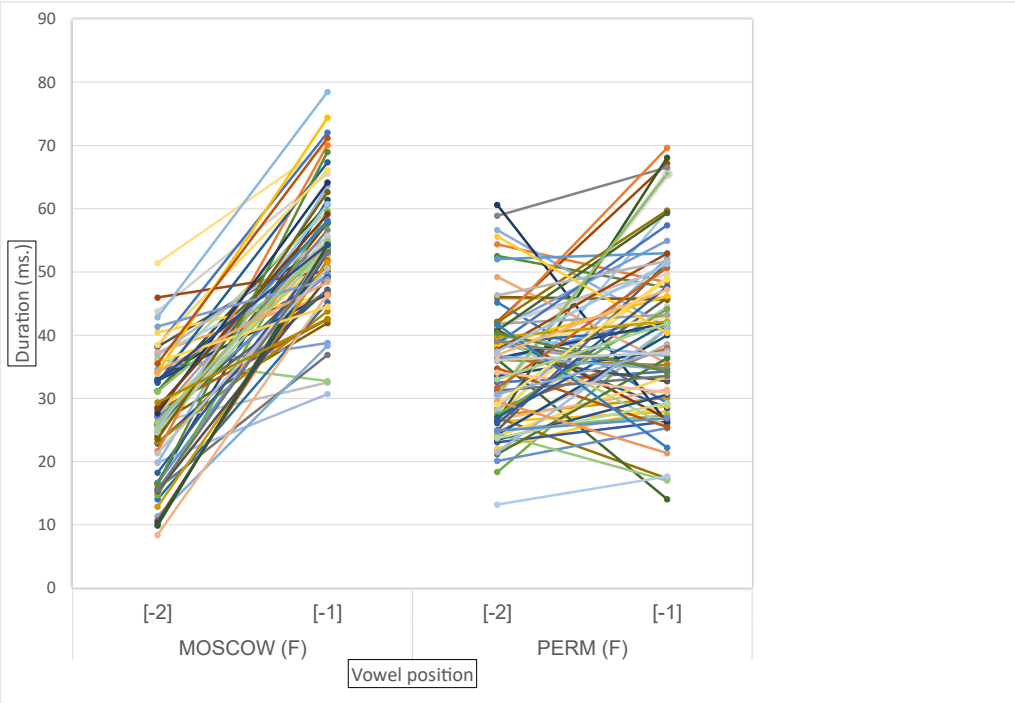


Fig. 2. Durations (in ms.) of the second (a_{-2}) and first pretonic vowels (a_{-1}) in all individual word tokens of topotát', pokopát' and potakát' by the female speakers in Moscow (left) and Perm (right).

This stability across contexts shows that the differentiation between the pretonic positions is a fundamental part of the phonology of Moscow speech. In this case, the high variability of the prosodic conditions in our data is not a drawback, but an advantage: It shows that our Moscow speakers pronounced the vowels differently (almost) no matter what.

How about Perm, with its non-significant difference between the positions, and a high level of variation between the tokens (in both duration and F1), as illustrated in Fig. 2 (right)? Can we conclude from our phonetic data that the Perm "dialect" does not differentiate the two positions? And that the word has no bisyllabic nucleus, or, in Tore's analysis, no iambic foot? Why did we still find a small difference?

At least two factors prevent us from drawing a conclusion directly from these phonetic data about the underlying phonology, for the results in Perm can have several causes.

A first possibility is that the Perm variety does have first pretonic prominence, but that it does not surface at the phonetic level because it is annihilated by factors giving the opposite result. For instance, the relative prominence of a_{-1} might be obscured by

boundary strengthening, which has been observed in northern Russian dialects, as mentioned by Duryagin and Knyazev themselves (2022:58), i.e. a tendency to lengthen the initial syllable, which is the second pretonic in our trisyllabic words. The Perm variety might also have secondary stress on this syllable, like Ukrainian. Or perhaps some speakers repeat the pattern with similar pretonic durations they started off with and superimpose this rhythm on all words of the reading task? Our reading task of 10 sentences with only trisyllabic words read by 13 speakers is too limited to exclude these causes. Furthermore, Perm speech might have a bisyllabic nucleus, but without its prominence starting already on its first syllable.

Second, the Perm recordings might represent more than one "dialect", and more than one phonological structure: one with a bisyllabic centre and one without. Vysotskij also found a small average durational difference even in the dialect group with almost even pretonic durations. Possibly, some speakers accommodated their speech to the non-local researchers who recorded them. Paufošima (1978:66) suspects that the younger speakers she recorded for her study of pretonic vowels tried to imitate the standard Russian rhythm, but succeeded only partly. Perhaps some of our speakers do the same. If we look at the individual speakers, we see that only part of them produce target words with first pretonic prominence.[4] It is not unlikely that these participants, especially the girls, blend local speech variants with supraregional (standard) forms, especially in this reading task in a formal setting. Sociolinguistic research in Perm has shown that the citizens of Perm do not speak a clearly defined Perm dialect. In actual speech, all *Permiaks* use a blend of local and supraregional features, choosing from the pool of variants they know. The frequency of local features varies with sociolinguistic variables, such as age, gender and level of education (Erofeeva 2005).

This evokes the kind of fundamental questions that make linguistics intriguing. Does it actually make sense to speak about a Perm dialect? How should we describe the phonology of the speakers from Perm: as one system that allows for variation and can account for both lack and presence of first pretonic prominence? Or do the speakers switch between two dialects, and two phonologies? Dyachenko, Pronina and Knyazev (2024) give an example of slightly different phonologies in neighbouring Russian dialects with dissimilative *akan'e*, and observed continuous phonologization of phonetic phenomena. Which phonology do today's children in Perm extract from the pool of actual forms they grow up with? With this last question we have returned to Tore's view on phonological change.

As usual, we ended up with at least as many questions as we started with.

So do all Russian varieties have first pretonic prominence, and Tore's iambic foot? Possibly not, but we need additional analyses and recordings, due to the variability of

[4] These results will be published in an upcoming paper.

phonetic data. Some conclusions can be drawn, however. The high level of variation in Perm is, at the very least, a sign that the differentiation between the pretonic positions is not a high-ranked constraint in Perm, to use a term from Optimality Theory, unlike in Moscow. Our recordings from Moscow show a remarkable level of stability in rhythm despite the highly variable prosodic conditions. This shows that the prominence of the first pretonic low vowels is fundamental for the Moscow speakers on a systematic, phonological level. And that even highly variable phonetic data from actual language usage can give evidence for a phonological rule.

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