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Antonina Martynenko's dissertation: "Traditions and Innovations in Russian Poetry of the Second Half of the 1830s: A Quantitative Study"

Readers reports

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Antonina Martynenko's Ph.D. dissertation *Traditsii i innovatsii v russkoj poezii vtoroj poloviny 1830-kh gg.: kolichestvennoe issledovanie* ("Traditions and Innovations in Russian Poetry of the Second Half of the 1830s: A Quantitative Study") was published in book form by University of Tartu Press (Martynenko 2024a; in Russian, summaries in Estonian, pp. 188–192, and English, pp. 193–197). An electronic version is available through the University of Tartu's digital archive ADA (see References for link). The dissertation abstract, published both on the university website and on the ADA page in Estonian and English, provides a concise outline of its contents:

> Digital Humanities – a modern field where computers assist humanities research – once promised a revolution in literary studies. With digitisation and machine learning, it offered the chance to examine thousands of books in minutes, not years. But how can computers help analyse literary texts, and does access to a larger "library" allow us to rethink literary history?
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> This dissertation addresses these questions focusing on a short under-studied period in Russian poetry: 1835 to 1840, considered the end of "the Golden Age". Scholarly assessments of 1830s poetry vary: some describe these poems as ponderous copies of earlier exemplary texts, while others portray the 1830s poets as unskilled yet determined innovators who disrupted the "classical" poetic style.
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> To reassess the place of the late 1830s poetry, this study compiled a large, unbiased corpus of 4,797 lyrical poems printed between 1835 and 1840. By

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analysing quantifiable features of poems, such as word frequencies and rhyme endings statistics, the dissertation asks which changes in the poetic language are traceable on the level of "poetic population".

Data reveals both innovation and retention in the poetry of this period. On the one hand, the poetry of the mid- and late 1830s is different enough from earlier texts on formal levels: an algorithm can distinguish 1830s texts based on word, meter, or rhyme frequencies. In other words, these poems are far from mere imitations. On the other hand, certain features of poetic style remain conservative, such as the poetic genres and their connections to specific meters.

Thus, the truth lies somewhere between the contrasting opinions about this period in poetic history: neither did the 1830s poets blindly imitate the past, nor did they disrupt the "Golden age's" legacy. Similarly, while studying a larger corpus computationally does not bring about a revolution, statistical reasoning at the population level can provide a stable ground for further humanities inquiry.

The dissertation was defended *summa cum laude* on 13 January 2025 before the doctoral committee, with invited readers David J. Birnbaum and Igor Pilshchikov. Their reports are published here to broaden scholarly discussion of the issues raised in the dissertation.

David J. Birnbaum's report

1. Dissertation overview

Antonina Martynenko's dissertation makes a substantial contribution to the history of Russian verse practice in many respects: the research question that it identifies is amendable to digital exploration, it applies a variety of appropriate and effective digital research methods to the research data, the preparation of the data and the conduct of the several experiments are well designed and implemented effectively, and the conclusions are presented clearly and persuasively. These achievements can be considered as belonging to two categories: the *historical* and the *experimental*.

The *historical* achievements of the dissertation include the development and publication of an open-access corpus accompanied by careful metadata; the elaboration of a method for assessing the representative quality of the corpus (chapter 1); and an assessment of poetic publication in the period in question from a book- and cultural-history perspective (chapter 2). Together these contributions confirm that it is possible to compile a representative corpus of

works from the period under study that is sufficient to support the conclusions that emerge in the later chapters. In describing these sections as "supportive" I don't mean to minimize their role in the dissertation: insofar as humanists often lack training in quantitative research methods and data scientists often lack training in the subject-area context, the dissertation demonstrates how to conduct quantitative experiments in the context of data-management practices that are meaningful within the discipline of literary history, and specifically the history of poetic practice. The author has made the corpus freely available in conformity with FAIR (Findable, Accessible, Interoperable, and Reusable) data principles,[1] which means that it serves not only as a data resource for the dissertation, but also as an enduring contribution to the inventory of open-access Russian poetry corpora.

The experimental portion of the dissertation includes explorations of lexicon (chapter 3); meter (chapter 4); and rhyme (chapter 5). The author consistently anchors her original experimental work in well-established questions about the poetry of the period, e.g., an alleged decay of the genre system over time, the alleged unique quality of Benediktov's poetic practice, the extent to which the period represented epigonism or disruption or decline, etc. The application of quantitative methods to questions that have long been of broad interest to historians of Russian poetry yields representative, non-anecdotal, and reproducible results that will be meaningful to literary scholars, including those whose own research practice may not involve digital methods.

Chapter 3 (lexicon) makes effective use of classification (SVM) and clustering (UMAP) methods to explore the association of lexicon with genre. The methods themselves are well established and the author discusses the results of the experiments together in ways that clarify their relationship and support an argument that a genre system continued to be observable during the period. Section 3.2 demonstrates that robust results require attention to lexicon together with meter and other features – that is, that lexicon alone may not be sufficient. Section 3.3 (about Anna Smirnova), while not central to the overall goals of the thesis, nonetheless offers an insightful application of lexical research methods to a specific question of authorship.

Chapter 4 (meter) applies topic modeling to questions of semantic halo, clarifying that the semantically neutral nature of iambic tetrameter should not be allowed to obscure the relative general stability of semantic halos associated with other meters. The pipeline that the author applies to the analysis (topic modeling → graph model of topic cooccurrence → binning → normalization

[1] See https://www.nature.com/articles/sdata201618

as edge/text ratio → community detection) is smart and insightful, and her presentation of her conclusions is rhetorically effective.

I was initially surprised by the apparent lack of noise in the LDA examples that the author cited. She mentioned using 75 topics (123), and the examples she provided showed words that we recognize as topics in the human sense of the word, that is, they showed the type of consistent, coherent output we hope for, but often fail to achieve, when we employ topic modeling. Insofar as the method involves statistical distributions, I would not have expected noise-free results, which led me to ask how the author was nonetheless able to attain such impressive consistency. Her response clarified her method: First, the corpus was quite large (several hundreds of thousands of words) and it was lemmatized before analysis, which increased the quality and consistency of the data. Even then, the author explained, the results were not very clear when using a complete word list, but pruning the list to the five thousand most frequent words reduced the matrix sparsity and greatly improved the quality of the result. Finally, the author tested different numbers of topics (from 25 to 150) and assessed the probability distributions of words within the topics. Tuning this parameter revealed that a smaller number of topics enabled the model to focus on words with more meaningfully distinct probabilities.

Chapter 5 (rhyme) explores the relationship between part of speech and rhyme practice. The author's results overlap somewhat with those of J. Thomas Shaw, but the author's access to a larger and non-canonical corpus led her to different, but no less persuasive, conclusions. In particular, the author's attention to narrower and wider ranges of choices (e.g., a limited number of verbal desinences but a large number of verbs in the lexicon) allowed her to focus on formal features where Shaw looked more at semantics (subjectivization). Among other things, the author's attention to how the distribution of rhyme pairs observed Zipf's Law provides a perspective on the question of whether poets might "run out of rhymes" of a particular type.

2. Beyond the dissertation

The dissertation as a whole takes the period of 1835–1840 as a focus and explores its relationship to earlier verse. This perspective emerges from an established periodization (see, for example, the work by Lidija Ginzburg that the author cites) and it leads to meaningful results. From a machine-learning perspective, a focus on a pre-determined period invites (although it is not limited to) a supervised-learning approach: we can, for example, train models on

corpora that have been annotated for chronological period and then test how effectively those models are able to distinguish periods within a test corpus, and even where this may not be the question that the research asks, it lurks in the background of methods that adopt a pre-defined period as an object of study. At the same time, the use of digital methods invites us to ask about an alternative, unsupervised, data-driven periodization, that is, a periodization that might emerge organically from a clustering of, say, verse from the late eighteenth century through the middle of the nineteenth century without an a priori commitment to any periodization. Would we expect (or not expect) either the period of 1835–40 or its specific boundary years to emerge naturally as distinctive within such a corpus – not necessarily as abrupt or absolute, but as relatively prominent and relatively significant?

Exploring this issue experimentally would require a larger and broader corpus than was available to the author, but the present work tells us something about what we might expect – for example, that the use of genres does not change abruptly in the period studied and that there is a degree of continuity with the earlier Golden Age. On the one hand, this is to be expected; insofar as the literary productivity of cohorts or generations overlaps, we might anticipate the coexistence of continuity and evolution in poetic practice, since the advent of a new generation would mean not that new practice would abruptly replace old practice, but that the balance between the two might change in an organized way as one expands while the other recedes, commensurately, over time. It would be a mistake, though, to regard that result as uninteresting because it conforms to common-sense expectations. On the contrary, the author's corpus-based approach affords an empirical, data-driven perspective that yields reproducible results, and thus provides a unique foundation for further exploration. If we adopt a distant-reading perspective that is capable of modeling and visualizing patterns that compete in the poetic space over a multi-generational span of time, we might describe changing poetic practice similarly to the way we describe changing linguistic practice, that is, with attention to the distinctive speech habits of different identifiable generational cohorts within what is nonetheless a larger common linguistic community. Within a gradually changing poetic landscape, then, would 1835–40 remain a meaningfully distinguishable period?

Classification – that is, supervised learning – is especially well-suited to situations where the classes are distinct, such as authorship attribution, where we might train models on the works of different authorial suspects and then attempt to determine how close in multidimensional space a test document or test corpus lies to subsets of the training corpus by different authors. A document in the test corpus can then be shown (within a certain measure of confidence) to be either by a specific author in the training corpus or by

someone not in the training corpus. Authorship attribution can be robust with respect to both confounding variables (e.g., works that share vocabulary not as an authorial signal, but because they are about the same topics) and imitation (e.g., deliberate forgery) if features are chosen with this in mind. For this reason, authorship attribution relies on features that are common (not subject-specific, and therefore likely to be represented meaningfully in any text), stable (likely to persevere over an adult lifetime in an authorial oeuvre), and largely outside conscious control, such as most frequent words (typically function words) or character ngrams. Researchers cited by the author (e.g., Petr Plecháč) have identified formal verse features that can be correlated meaningfully with authorship, which is important because rhyme and meter can be shown to carry signals of authorship even though they are not (unlike most common words or character ngrams) outside conscious control.

The features of classification that work well for authorship attribution are less clearly applicable to periodization because periods, unlike persons, have fuzzy boundaries. For example, 1835–40 is *roughly* the end of the age of Pushkin (d. 1837) and Lermontov (d. 1841), but 1835 and 1840 are not self-evidently precise liminal years in the history of Russian literature. We can choose to regard decades or half-decades or other periods as presumptively analogous to authors and explore whether a test work belongs clearly to one or another period, but predefining the periods prejudices the outcome. That detail, then, invites us to consider whether a data-driven periodization, where the corpus itself defines the periods (whether for individual features or more generally) might let us frame the questions differently. For example, if we bring unsupervised (clustering, rather than classification) methods to bear on the formal features that the author of the dissertation explores (lexicon, meter, rhyme), without any predefined interest in the period of 1835–40, would that period emerge from the data as coherent, distinguishable, and meaningful? Would 1835 or 1840 emerge as liminal years? Might starting from continuous time and letting uneven change in specific features over time help us characterize not only work associated with well-defined literary periods, but also how we might deal with overlap, that is, with the work of poets whose productivity might cross the boundaries of traditional literary periods?

The author already applies both supervised and unsupervised learning methods in the dissertation and obtains insightful analytical results. The question above, then, is an invitation now to consider also the following: What if, instead of interrogating the features of 1835–40 as a known period in Russian poetry, we were to start with no periodization and ask the data to tell us where there is continuity and where there is innovation; where change is rapid and where it is slower; where constellations of features overlap with others and

where they replace them? What might that research program look like, what roles might supervised and unsupervised learning play in it, and what results might we expect to emerge? From a more general, machine-learning perspective, where and how might supervised learning (e.g., classification) and unsupervised learning (e.g., clustering) methods contribute to our understanding of literary, and especially poetic, history?

As the "Beyond the dissertation" heading to this section suggests, the preceding are directions for further research, and they depend on corpora that may not yet be available. In the meantime, the present dissertation provides insights concerning where and how we might look and what we might expect for this larger project, even as the author offers substantial contributions to the specific questions of the history of Russian verse that she set out to address, and, more broadly, to the creative application of digital methods to the exploration of literary questions.

Igor Pilshchikov's report

The dissertation's central aim is clearly signaled in its title: the formalization and quantification of both traditional and innovative features in the least studied half-decade of early nineteenth-century Russian poetry. It consists of an introduction, five chapters, and a conclusion. The introduction presents the methodological framework and explains the principles underlying corpus compilation. Chapters 1 and 2 address corpus sources – poetry collections and literary journals dating from this period – and the ratio of extant to non-extant texts, identified through book registers, bibliographies, and reviews. This allows the author to gauge the representativeness of the surviving material.[2] Chapters 3 and 4 analyze generic and thematic tendencies in poetic vocabulary and versification. The conclusion synthesizes the findings of each chapter and the dissertation as a whole.

Building a corpus for this period was itself a formidable task: the poetry of the 1830s is incompletely bibliographed, rarely anthologized, and only partially digitized (let alone tagged for research). This challenge was met impressively: the corpus was identified, described, digitized, and made available for future study. The author worked with original printings – a commendable choice, since most modern editions print poems in their final redaction, often heavily reworked, but date them by the earliest version, sometimes decades apart. The

[2] The relevant sections were previously published in English as an article (Martynenko 2023).

dissertation's strength lies in combining traditional philology with twentieth-century quantitative poetics and twenty-first-century digital humanities. Such a synthesis is far less common than it ought to be.

The second half of the 1830s marked the close of the "Pushkin era", when poetry yielded to prose, almanacs to journals, and genre-bound verse to poetry with blurred or absent genre markers. It was also, as M. L. Gasparov showed, a decisive turning point in the evolution of Russian verse – more decisive even than the shift from the eighteenth to the nineteenth century: trochaic meters expanded, binary pentameters emerged alongside tetrameters, and ternary meters began their ascent (Gasparov 1974: 45–67; 1984: 106–122). At the same time, rhyme underwent its "first crisis", producing significant innovation in rhyme types and, in connection with genre diffusion, rhyming schemes (Gasparov 1977).

Yet this transitional period produced few major figures. Vladimir Benediktov became its symbolic figure – famous for a moment, only to fade – while Lermontov's first collection of lyric poems (1840) brought to a close his short career and the half-decade alike. For this reason, "literature of great names" scholarship has largely neglected this era, leaving room for the "literature without names" approach, which the dissertation exemplifies, treating the late 1830s as a unified whole. Macrohistory is, however, complemented by microhistory: "authors without biographies" are assigned names, dates, and stylistic profiles or, sometimes, ironically, stripped of them. Section 3 of Chapter 3, for example, convincingly argues that "the poetess Anna Smirnova", who published her only volume of verse in 1837, was a literary hoax parodying women's poetry as imagined by complacent male contemporaries.[3]

In the 1930s, Soviet literary historiography labeled Benediktov and his contemporaries "vulgar" Romantics, painstakingly distinguishing "progressive" and "reactionary" Romanticisms in the 1820s and adding an epigonic "vulgar" stage in the 1830s. "Vulgar" implies a false quality: superficially progressive yet essentially reactionary. Such constructs, however, offer little analytical value for poetics. They cannot explain what Romantic poetry of the 1820s and 1830s shared, or how and to what degree they diverged.

The label was adopted even by Lydia Ginzburg (1936, 1939, 1940). The very term first appeared in her otherwise groundbreaking 1927 article "From the Literary History of Benediktov (Belinsky and Benediktov)". (The dissertation notes these circumstances.) She described Benediktov's poetic system as a decadent offshoot of Pushkin's, treating its "vulgarity" as the bad taste of

[3] This section was reworked as an article published in English (Martynenko 2024b).

the 1830s style contrasted with the 1820s "school of harmonic precision". Yet contemporaries like Shevyrev could value the new style as a break from the old, and even Belinsky's critique was aesthetically conservative, faulting Benediktov from the standpoint of old-style Karamzinism. Regrettably, Ginzburg's promising "junior Formalist" approach was not pursued later.

The dissertation takes a different path: Russian *quantitative* Formalism. As the author writes, "by using exact methods for the analysis of forms, we follow another branch of Russian Formalism – the tradition of quantitative literary studies developed by the Moscow Linguistic Circle and, in particular, by Boris Yarkho" (Martynenko 2024a: 15). Another orientation is computational literary studies, the counterpart of computational linguistics. Here we must differentiate quantitative and computational poetics: the computational may be either a hyponym of the quantitative (Yarkho's and Gasparov's "exact literary scholarship" was quantitative but not computational) or its hyperonym, embracing supervised and self-supervised machine learning with applications such as large language models (LLM), often function beyond human rationality and extend beyond quantitative "exactness".

The author, like myself, favors computational literary scholarship that builds on pre-computer quantitative methods, above all by interpreting statistical outputs in ways that illuminate the intelligible structure of the object studied. *Teaching* a computer to distinguish one author from another is not the same as *understanding* how their poetics differ. Likewise, statistical divergences between texts do not in themselves amount to the qualitative distinctions they reflect. As Yarkho (2006: 7) emphasized, "no statistic can be introduced without a morphological analysis, i.e., examination of the real literary phenomena that it reflects." And vice versa, statistical data demand theoretical and historical interpretation. The dissertation consistently and successfully follows this line of inquiry.

In both its theoretical sections and its case studies, the dissertation meets the highest scholarly standards. The arguments are clear and persuasive, and the presentation exemplary: tables, graphs, and diagrams not only visualize results but also allow readers to verify them independently. Quantitative data are also applied to solve practical problems, as in the case of the "Anna Smirnova". The work opens avenues for future research by the author and others – for example, in the area of rhythmics in addition to metrics, extending Barry Scherr's (1989) pioneering study of Benediktov. The dissertation under review not only answers questions but raises new ones, a hallmark of genuine scholarly achievement.

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