OLD CHURCH SLAVONIC *BYTI* PART TWO: CONSTRUCTIONAL PROFILING ANALYSIS

Hanne Eckhoff, Laura A. Janda, and Tore Nesset, UiT The Arctic University of Norway

1. Introduction

In Part One (this volume) we reviewed the history of the controversy over whether Old Church Slavonic (OCS) *byti* 'be' is a single verb (the single-verb hypothesis) or an aspectual pair of verbs (the two-verb hypothesis). We presented a grammatical profiling analysis of *byti* in comparison with other OCS verbs. While there were fewer problems with the single-verb analysis (since it did not entail positing a verb with no imperative, infinitive, or past participle), both the single-verb hypothesis and the two-verb hypothesis found modest support in the grammatical profiling analysis. In this article we follow up with an analysis of the grammatical constructions of *byti*. On the basis of corpus data and statistical analysis we argue that *byti* is best represented as a single, though complex, verb.

The structure of our argument is as follows. In section 2 we present the forms and Greek correspondences for *byti* and discuss what these mean for the controversy concerning the status of this verb. Section 3 situates this study with respect to the use of radial categories in cognitive linguistics, as well as the use of cognitive linguistics in both Slavic and general linguistics. In that section we also introduce the method of constructional profiling. We detail our study of the constructional profile of *byti* in section 4 and close with conclusions in section 5. All the data and statistical code used in this analysis are available at: hdl:10037.1/10074.

2. *Byti*: forms and Greek correspondences

OCS *byti* has a particularly rich set of forms, largely due to its history (see details in Part One). Table 1, which summarizes these forms, is here reproduced from Part One for the reader's convenience. The terms presented in this table (*es*-group, *bū*-group, etc.) are used to identify the relevant forms in the remainder of this article.

Schenker, Alexander M. *The Dawn of Slavic*. New Haven: Yale University Press, 1995.

Schmalstieg, William R. *An Introduction to Old Church Slavic*. Cambridge, MA: Slavica Publishers, 1976.

Seliščev, A. M. *Staroslavjanskij jazyk. Čast' vtoraja*. Moscow: Gosudarstvennoe učebnopedagogičeskoe izdatel'stvo/URSS, 1951/2004.

Shevelov, George Y. *A Prehistory of Slavic*. New York: Columbia University Press, 1965.

Speelman, Dirk, Stefan Grondelaers, and Dirk Geeraerts. "Profile-Based Linguistic Uniformity as a Generic Model for Comparing Language Varieties." *Computers and the Humanities* 37.3 (2003): 317–337.

Trubetzkoy, Nikolaus S. *Altkirchenslavische Grammatik*. Graz: Hermann Böhlaus, 1968.

Vaillant, André. *Manuel du vieux slave. Tome I: Grammaire*. Paris: Institut d'études slaves, 1948.

van Schooneveld, Cornelis H. "The aspect system of the Old Church Slavonic and Old Russian verbum finitum *byti*." *Word* 7.2 (1951): 96–103.

van Wijk, Nicolaas. *Geschichte der altkirchenslavischen Sprache. Erster Band: Laut- und Formenlehre*. Berlin: Walter de Gruyter, 1931.

Vasmer, Max. *Russisches etymologisches Wörterbuch*. Erster Band: A–K. Heidelberg: Carl Winter, 1976.

Večerka, Radoslav. *Staroslověnština*. Prague: Státní pedagogické nakladatelství, 1984.

Xaburgaev, G. A. *Staroslavjanskij jazyk*. Moscow: Prosveščenie, 1974.

Аннотация

Ханне М. Экхофф, Лора А. Янда и Туре Нессет

Старославянский глагол *быти* (часть первая: анализ грамматических профилей)

В статье обсуждается спорный вопрос о том, был ли старославянский глагол *быти* одним глаголом несовершенного вида с необычно большим количеством словоформ, или же мы имеем дело с видовой парой, отражающей две этимологические основы (*es-* и *bŭ-*). Предлагается объективное эмпирическое исследование вопроса, основанное на статистическом анализе 2428 примеров употребления глагола *быти* в сопоставлении с 9694 примерами 129 других глаголов. Предлагаемый анализ способствует точной локализации *быти* в глагольной лексике старославянского языка. При сопоставлении используется метод «грамматического профилирования», описывающий частотное распределение словоформ каждого глагола. Анализ проведен в два этапа. На первом этапе мы исходили из того, что *быти* является единым глаголом, в то время как на втором этапе *быти* рассматривался как глагольная пара. Оба варианта анализа дают правдоподобные результаты, и несмотря на то, что одного грамматического профилирования недостаточно для того, чтобы разрешить вышеназванное противоречие, такое профилирование формирует базу для дальнейшего анализа, который будет представлен во второй части исследования, где *быти* представлен как один глагол.

Table 1: The *byti* paradigm organized according to stem and morphology

	Morphological subparadigm	*es*-group	*bū*-group
"duplicate" forms for *es*-group and *bū*-group	present	*jestъ*	*bǫdetъ*
	imperfect	*běaše*	**bǫdeaše*[1]
	aorist	*bě*	*by(stъ)*
	present participle	*sǫšt-*	*bǫdǫšt-*
unique forms	subjunctive	*bi*[2]	
"shared" forms	past participle		*byvъ*
	imperative		*bǫdi*
	infinitive		*byti*
	l-form		*bylъ*

Van Schooneveld (1951) argued, on the basis of the "duplicate" forms in the first three rows of Table 1 — the present, imperfect, and aorist, that OCS *byti* is actually an aspectual pair of verbs. As detailed in Part One, this claim has proven highly influential, and is repeated in most subsequent works on OCS grammar. However, the argument itself is not very substantial, and we argue that it does not stand up to a rigorous empirical analysis.

Although on the face of it van Schooneveld's claim finds support in the fact that OCS *byti* is typically rendered by two different verbs in Greek, closer inspection shows that the relationship is more complex than a simple one-to-one mapping. Table 2 shows the Greek correspondences to attestations of *byti* in our corpus data (see section 4), with the forms that are most frequently used to render *eimi* 'be' toward the top of the table and those most used to render *gignomai* 'become' toward the bottom, and others arranged according to percentages. Table 2 includes only *byti* occurrences that correspond to either *eimi* or *gignomai* in Greek, and all of these are from the *Codex Marianus*. Note that OCS auxiliaries very rarely have Greek correspondences, which means that the subjunctive is almost absent from Table 2. Also absent from Table 2 is the *bū*-present participle, which usually renders Greek *mellō* 'intend, think of, be about to (do)'.

Table 2 shows that the division between the *es-group* and the *bū*-group in Table 1 is perhaps not so clear. It works well for the *es*-group "duplicate" forms which all have nearly perfect correspondence to Greek *eimi*, and it also works well for two of the *bū*-group duplicate forms, namely the *bū*-aorist and the *bū*-past participle. If we look at the *es*-aorist, for example, we see that there are 230 examples that render Greek *eimi*, accounting for 99.1% of relevant examples, as opposed to only 2 examples (0.9%) that render *gignomai*.

1. Not attested in canonical Old Church Slavonic.
2. We follow the convention of Shevelov (1965: 96) and Rix (2001: 242) here, who suggest that the imperfect, aorist, and subjunctive listed in this column in Table 1 all belong to the *es*-group, but have incorporated an initial *b*- from the *bū*-group.

Table 2: Distribution of *eimi* and *gignomai* as source lemma across *byti* subparadigms

	eimi # of examples	percent *eimi*	*gignomai* # of examples	percent *gignomai*
es-present	670	100.0%	0	0.0%
es-aorist	230	99.1%	2	0.9%
es-imperfect	46	97.9%	1	2.1%
es-present participle	45	97.8%	1	2.2%
l-form	16	84.2%	3	15.8%
subjunctive	3	75.0%	1	25.0%
bū-present	145	74.0%	51	26.0%
infinitive	26	61.9%	16	38.1%
imperative	11	42.1%	8	57.9%
bū-aorist	4	2.8%	140	97.2%
bū-past participle	0	0.0%	49	100.0%

But both the *l*-form and the *bū*-present are mostly used to render Greek *eimi*, and the infinitive and imperative are clearly "shared" forms with no strong preferences. These data comport fairly well with most of Dostál's (1954: 146–154) aspectual description of *byti*: he lists the *es*-aorist, *es*-imperfect, *es*-present participle, and the *l*-form (where *eimi* dominates) as imperfective; and he lists the *bū*-present, the imperative, and the infinitive as mostly imperfective. However, he finds the *bū*-aorist and *bū*-past participle (where *gignomai* dominates) to be evenly divided across perfective and imperfective uses.

These Greek correspondences serve as rough semantic tags indicating the relative share of stative versus change-of-state meanings for the various *byti* subparadigms. We refer to the Greek correspondences throughout our analysis (see section 4), because the Greek gives us an approximate independent measure of semantic differences.

Beyond its unusual inventory of forms and Greek correspondences, *byti* is also special in terms of its behavior in grammatical constructions. *Byti* occurs in a particularly wide range of constructions, some of which are unique to this verb, which appears as a regular auxiliary in the perfect tense, and plays an auxiliary-like role with other participles as well. Our analysis in section 4 is based on the behavior of *byti* in its various constructions.

3. Theory and methods
This section presents the concept of the radial category from the perspective of cognitive linguistics (in 3.1), as well as the method of constructional profiling (3.2). For more on profiling methods in general, see section 4 of Part One.

3.1 Radial categories and cognitive linguistics

A major finding of this article is the radial category of grammatical constructions for *byti* that emerges from our corpus data. The radial category is a central concept in the framework of cognitive linguistics, which has attracted considerable attention among linguists, particularly in the US (cf. Lakoff 1987, Talmy 2000, Croft 2001, Fauconnier and Turner 2002, Goldberg 2006, Langacker 2013) and in Europe (cf. Geeraerts 1987, Tomasello 2003, Dąbrowska 2004). Slavists figure prominently among adherents to this framework, among them Dickey (2000), Divjak (2010), Fried (2010), Rakhilina (2010), Plungian (2011).

The linguistic concept of the radial category is motivated by research in psychology (Rosch 1973a and b, 1978) and neurobiology (Churchland 1986 and Churchland 1995) that human beings store and access knowledge in categories with a specific structure. Unlike the Venn diagrams of set theory, human cognitive categories are organized around a prototypical member, to which all other members ultimately bear some relationship. Other members of a category need not share any feature with the prototype, but are linked through chains of relationships that give the category a radial structure and hence the term "radial category."

Cognitive linguistics is founded upon the principle that linguistic cognition is not fundamentally different from human cognition and thus should use the same basic mechanisms. Therefore it is reasonable to assume that linguistic categories, which are typically polysemous, are also radial categories. Lakoff (1987) and Taylor (1995) present classic examples of radial categories and their structure. Lewandowska-Tomaszczyk (2007) gives an overview of the role of prototypes in motivating and structuring radial categories.

The structure of radial categories has typically been deduced by researchers, combining insights from data with intuitions about relationships among the members of a category. The present study is innovative in that the entire radial category of constructions for *byti* emerges objectively from the data, including the identification of nodes (sets of constructions that pattern similarly) in the category and the relationships among them.

3.2 Constructional profiling

Constructional profiling examines the relationship between the frequency distribution of the grammatical constructions a word appears in and its meaning. As with grammatical profiling, this method focuses on the uneven distributions of forms found in language and the fact that any given word has a "signature," a unique distribution of forms. Any given word can potentially appear in a large range of grammatical constructions, but when we look in a corpus we find that the actual range of attested constructions is smaller and unique to that word. Constructional profiling is a prominent component of relevant studies of synonymy, such as Geeraerts 1988 (on Dutch verbs meaning 'destroy'),

works by Divjak and Gries (Divjak and Gries 2006, Gries and Divjak 2009 on Russian verbs meaning 'try'), and Glynn 2010 (on the English near-synonyms *hassle*, *bother*, and *annoy*). Constructional profiling is related to collostructional analysis (Stefanowitsch and Gries 2003, 2005), though the latter approaches the form-meaning relationship from the opposite end, taking the construction as the point of departure and asking what words appear in it. Another related strategy is metaphorical pattern analysis, which examines the metaphorical uses (typically embedded in certain constructions) that near-synonyms can appear in (Stefanowitsch 2006 a and b; Svanlund 2007).[3]

The second hypothesis in this study can be restated in terms of synonymy, since an aspectual pair consists of verbs that are lexically synonymous but differ only in aspect. Thus it is reasonable to use constructional profiling to determine whether the overall similarity of *byti* is greater than differences found between the near-synonyms of the paired verbs proposed in hypothesis 2. The fact that Kuznetsova (2013: Chapter 5) has shown constructional profiling to be useful in sorting out the relationships between members of a verb pair is a further argument for using constructional profiles also to look for evidence of the aspectual distinction claimed in hypothesis 2. However, Kuznetsova challenges the famous Maslov (1984) criterion for the identification of aspectual pairs, according to which one expects the perfective and imperfective partners of a pair to be interchangeable in grammatical constructions. Kuznetsova shows that the degree of overlap in constructional profiles between imperfective verbs and their perfective partner verbs is in reality a complex issue presenting a continuum rather than a discrete choice.

In section 4 we apply grammatical profiling (introduced in Part One) in conjunction with constructional profiling to discover how the grammatical forms are distributed across the constructions that *byti* appears in. In addition, correspondence analysis (also introduced in Part One) is useful to sort out the relationships among the various grammatical constructions that *byti* is found in, supporting the radial category analysis we propose.

The comparisons of *byti*'s behavior across different constructions give us a more nuanced and complete picture of this verb's status. Unlike the grammatical profile analysis in Part One (in which some data had to be excluded), in

---

3. Janda and Solovyev (2009) used constructional profiling to discriminate among near-synonyms for 'happiness' and 'sadness' in Russian, showing that while these nouns selected the same overall set of preferred [preposition + case] constructions (showing that they were indeed close synonyms/antonyms, as opposed to other words that had entirely different sets of preferred constructions), there were stark differences in the distribution of individual preferences within that set of constructions (showing that each synonym/antonym had a unique constructional profile). The Janda and Solovyev study shows that constructional profiles can give us information both about overall similarity of meaning and about fine-grained distinctions in cases of near-synonymy.

the constructional profile analysis we can represent all of the data and discover which constructions involve subparadigms that present possible contrasts in meaning and/or aspect. These possible contrasts can then be strategically targeted for closer analysis in order to see whether they support a one-verb or a two-verb interpretation.

4. Constructional profiling of *byti*

Our constructional profiling analysis of *byti* is based on data from the Old Church Slavonic portion of the PROIEL corpus (http://foni.uio.no:3000/; see a more detailed description in section 3 of Part One), supplemented by additional tags labeling the grammatical construction added via the methods described in section 4.1. We examined 2,428 attestations of *byti* in a dataset extracted from *Codex Marianus*, *Codex Suprasliensis*, and *Codex Zographensis*, as described in Part One. Our dataset and the code used to analyze it are publicly available at: hdl:10037.1/10074.

We use the constructional data to further explore the one-verb vs. two-verb hypotheses. The analysis enables us to discover whether forms purportedly belonging to a particular stem are specialized with respect to individual constructions. We provide a comprehensive description of the constructions in which *byti* occurs, and use a statistical approach to measure the relationships among constructions with respect to the distribution of subparadigms in each construction.

We first use objective means to define and cluster constructions and then go deeper by breaking down *byti*'s behavior by construction. We then proceed construction by construction to address the issues unresolved in the grammatical profiling analysis in Part One. For each construction, we focus on the behavior of both the shared forms and the possible contrasts.

If *byti* is indeed a verb pair, we would expect there to be at least some constructions in which the competing "duplicate" aorist and present forms could both occur, and that they should show aspectual contrast in those constructions, as per the Maslov criterion. In other words, we would expect to find some overlap in the constructional profiles of the *es*-group and the *bū*-group, and this expectation is borne out by the facts. While Kuznetsova (2013: Chapter 5) has shown that the degree of overlap in the constructional profiles of aspectually paired verbs in Modern Russian can vary greatly, her study does not deny that there is aspectual contrast in the constructions where overlap is observed.

4.1 Extracting constructions

We did not want our construction inventory to be based on a priori assumptions or individual examples, but rather to let the constructional patterns emerge from the data. We therefore arrived at a set of constructions by aggregating information from several annotation layers in the PROIEL corpus to

find patterns.[4] In order to arrive at these patterns, we used syntactic and part-of-speech information from the annotation. Syntactic information included the function of *byti* as an auxiliary, a matrix verb or a dependent verb form, along with argument structure information, including presence/absence of oblique arguments, predicative complements and adverbials, augmented by information on the part of speech and case marking appearing on the arguments. Further hand sorting made it possible to separate personal from impersonal constructions and to group constructions with similar patterns. This process, which relied upon the objective features of the *byti* data, yielded ten constructions, and unsurprisingly these largely match the kind of constructions usually associated with 'be' verbs cross-linguistically. Thus our construction inventory is based on the PROIEL syntactic analysis and morphological information, not on semantic analysis, although we use semantic labels for mnemonic reasons. In this section we present an overview of the ten constructions, which will be analyzed in greater detail in subsections 4.3 through 4.7. The frequency of the constructions in the dataset is visualized in Figure 1.

The x-axis in Figure 1 displays the names of the ten constructions, and the y-axis gives the number of examples found in the dataset. The bars give the result for each construction. Thus, for example, the aux (= auxilliary) construction is represented in 212 examples in our dataset, the auxiliaroid construction is represented in 361 examples, etc.

4.1.1 Auxiliaries (aux) and possible auxiliaries (auxiliaroid)

The only usage recognized as a "proper" auxiliary in the PROIEL analysis is the use of *byti* in forming perfect tenses with the *l*-form (example 1). We isolated this construction under the label AUXILIARY. There were 212 such occurrences in the dataset.

(1)   *pravě sǫdilъ esi*
    'you have judged rightly' (Mar. Luke 7:43)

There are, however, uses that superficially resemble auxiliaries: *byti* is used with passive participles (example 2), and also in a construction with the present active participle (example 3) that could be interpreted as a progressive. Since we do not know a priori whether these uses belong with the AUXILIARY, we have assigned them to a separate construction labeled AUXILIAROID. There were 361 such occurrences in the dataset.

(2)   *pisano estъ*
    'it is written' (Mar. Matt. 21:13)

(3)   *bě učę vъ crkve*
    'he was teaching in the temple' (Mar. Luke 19:47)

---

4. For full documentation on the PROIEL syntactic analysis, see http://folk.uio.no/daghaug/ syntactic_guidelines.pdf
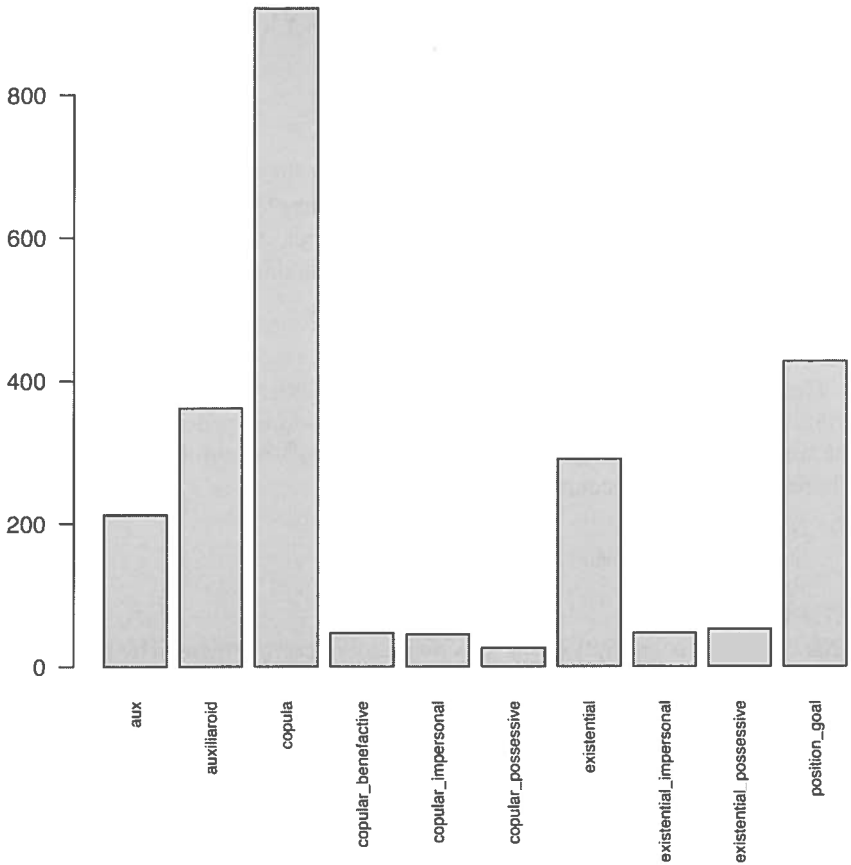
Figure 1: Frequency of the ten constructions in the dataset

4.1.2 Copulas

We found four main patterns that serve as variations on a basic copula con-
struction. The COPULA construction is the most frequent pattern in the entire
dataset, with 921 occurrences. The label is given to regular, personal con-
structions with a predicative complement, which may be a noun (example 4),
an adjective (example 5), or a clause.

(4)   *vy este solь zemi*
      'you are the salt of the earth' (Zogr. Matt. 5:13)

(5)   *snъ tvoi živъ estъ*
      'your son is alive' (Mar. John 4:50)

The COPULAR POSSESSIVE pattern is like the COPULA pattern, but also in-
cludes a nominal in the dative analyzed as an oblique argument, which is the

convention for constructions meaning 'have X as Y', 'be X's Y' (example 6). There are 26 such occurrences in the dataset.

(6) *kako emu estъ synъ*
     'how can he be his son?' (Mar. Luke 20:44)

The COPULAR BENEFACTIVE pattern is like the COPULA pattern, but includes a dative nominal analyzed as an adverbial (example 7). These occurrences usually have an infinitive or clause as the subject, and the dative is clearly benefactive. There are 47 such occurrences in the dataset.

(7) *unĕe estъ vamъ da azъ idǫ*
     'it is better for you that I should go' (Mar. John 16:7)

The COPULAR IMPERSONAL pattern is like the COPULA pattern, but has no referential subject (example 8). This analysis was used for properties ascribed to the topic time — 'it was morning', 'it became late' and similar constructions. There were 45 such occurrences.

(8) *bĕ že noštъ*
     'it was night' (Mar. John 13:30)

4.1.3 Existentials

This cluster of constructions lacks a predicative complement. The most common construction in this cluster is the EXISTENTIAL, with 290 occurrences, where *byti* has a referential subject and often one or more adverbials (examples 9-11). *Byti* in this pattern means 'exist' (example 9), 'come into being', 'happen', or even 'come' (example 10). The pattern also includes presentational 'be' (example 11).

(9) *vъ domu otca moego obitĕli mъnogy sǫtъ*
     'in my father's house there are many mansions' (Mar. John 14:2)

(10) *glsъ bystъ iz oblaka*
     'a voice came from on high' (Mar. Luke 9:35)

(11) *bĕ člvĕkъ tu*
     'there was a man there' (Mar. Luke 6:6)

The EXISTENTIAL POSSESSIVE construction has the same basic structure, but also includes a dative nominal analyzed as an oblique argument (example 12). This analysis was chosen in the PROIEL annotation to indicate the typical Indo-European predicative possessive construction exemplified by Latin *mihi est* 'I have'. There were 52 such occurrences.

(12) *ne bĕ ima čęda*
     'they had no child' (Mar. Luke 1:7)

In the EXISTENTIAL IMPERSONAL construction *byti* has no referential subject, but frequently an adverbial or a complement clause (example 13). The con-

struction has a strong correlation with the Greek *egeneto* 'it happened' construction.[5] There are 47 such occurrences in our dataset.

(13) *i bystъ egda sěaše*
   'and it happened as he was sowing' (Mar. Mark 4:4)

4.1.4 *Byti* as a positional verb

Our final construction is POSITION/GOAL, which involves personal occurrences of *byti* with prepositional phrases or adverbs, usually indicating position, source, or goal (examples 14–15). In these occurrences *byti* has a behavior reminiscent of position verbs (like *sit, stand*), or even motion verbs.[6] The construction is very common, with 427 occurrences.

(14) *otcъ moi iže estъ na nebesъxъ*
   'my father who is in heaven' (Mar. Matt. 16:17)

(15) *něstъ sъde*
   'he isn't here' (Mar. Mark 16:6)

4.2 Clustering constructions according to the grammatical profiles of *byti*

Our next task is to make comparisons across the constructions in order to test our two hypotheses. If the one-verb hypothesis is correct, although we may find variation across the constructions, it should be possible to relate them to each other in a radial category network that reflects the syntactic behavior and semantic expression of *byti* in a holistic way, with core uses closely associated with each other, and less prototypical uses at the periphery. If the two-verb hypothesis is correct, we should find evidence of more dispersion. On the one hand, we can expect that there might be some constructions that are strongly or exclusively used for only one of the stems, given that there is evidence of such specialization among aspectually paired verbs in Russian (Kuznetsova 2013: Chapter 5). On the other hand, we also expect some constructions to be used by both stems, and in such cases the forms of the two stems should be used contrastively as imperfective vs. perfective verbs.

We test the two hypotheses (the single-verb and the two-verb hypotheses) by comparing the grammatical profiles of *byti* across the ten constructions. This makes it possible to plot the relationships among the constructions and also to target constructions where there is potential for contrastive overlap in use of *es-* and *bū-*forms. This study includes all of the attestations of *byti* arranged according to the following subparadigms:

---

5. The Greek correspondence for example (13) is:
   kai egeneto en tōi speirein
   and happen.AOR.3SG in the.N.DAT.SG sow.PRS.INF
   'and it happened as he was sowing'
6. In the PROIEL analysis, these prepositional phrases and adverbs were conflated with regular predicative complements for the sake of simplicity.
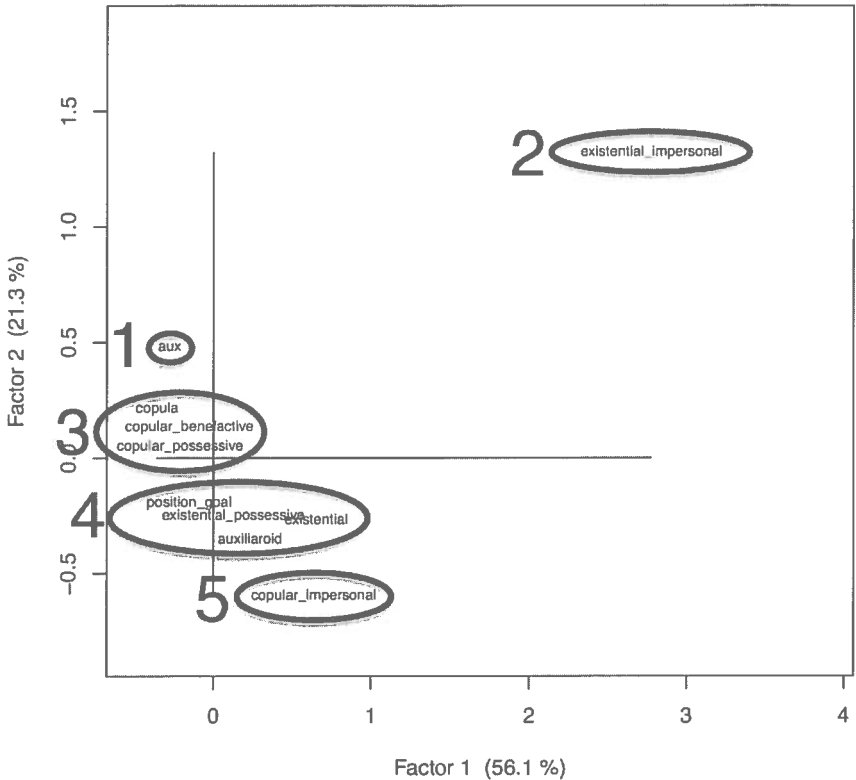
Figure 2: Correspondence analysis of *byti* constructions by grammatical profile

- From the *es*-group: *es*-present, *es*-present participle, *es*-imperfect, *es*-aorist, subjunctive
- From the *bū*-group: *bū*-present, *bū*-present participle, *bū*-aorist, past participle, *l*-form, infinitive, imperative[7]

With the grammatical profile of *byti* for each of the constructions as input, we can use correspondence analysis to discover the relationships among the constructions (for a description of correspondence analysis, see section 4.1 of Part One). The resulting plot is presented in Figure 2.

Like the plots of the correspondence analyses in Part One, Figure 2 can be read as a map of the distances between the constructions.

The plot in Figure 2 has been adjusted by removing the subjunctive from the calculation. The reason for doing so is that 96% of all examples of sub-

---

7. The *bū*-imperfect was not attested in our dataset.

junctive forms are found in the AUXILIARY construction,[8] and including the subjunctive skewed the plot, causing nearly all of the other constructions to be lumped together. By removing the subjunctive from the plot we make it possible to see the relationships among the remaining constructions, but we must remember that this plot has been distorted and that the AUXILIARY construction is in fact the one that is most different from the others. The subjunctive is, however, included in our study and represented in the grammatical profile of *byti* for the constructions in sections 4.3–4.7. Inspection of the results suggests that Factor 1 in the correspondence analysis largely reflects the relative frequency of the *bū*-aorist (the only form in the grammatical profile for the EXISTENTIAL IMPERSONAL construction, which has the highest Factor 1 value; see section 4.4) as opposed to all other subparadigms.[9]

Five clusters of constructions emerge from the correspondence analysis, listed in Table 3 together with their frequencies. This table breaks down the distribution according to *es*-group, *bū*-group, and shared forms (see Table 1). The percentages add up to 100% in each row.

Table 3: Clustering of OCS *byti* constructions and distribution of forms

cluster	construction	*es*- group	percent	*bū*- group	percent	shared forms	percent
Cluster 1	auxiliary	203	95.8%	9	4.2%	0	0%
Cluster 2	existential impersonal	0	0%	47	100%	0	0%
Cluster 3	copula	746	81.0%	121	13.1%	54	5.9%
	copular possessive	22	84.6%	4	15.4%	0	0%
	copular benefactive	28	59.6%	15	31.9%	4	8.5%
Cluster 4	existential	124	42.8%	147	50.7%	19	6.6%
	existential possessive	22	42.3%	24	46.2%	6	11.5%
	auxiliaroid	201	55.7%	134	37.1%	26	7.2%
	position/goal	326	76.3%	77	18.0%	24	5.6%
Cluster 5	copular impersonal	22	48.9%	23	51.1%	0	0%

8. There are 96 examples of subjunctive forms in total, 92 are in the AUXILIARY construction, 3 are in the AUXILIAROID construction, and one is in the EXISTENTIAL construction.

9. Factor 2 in Figure 2 is harder to interpret. There seems to be some influence of tense involved, and perhaps some relationship to stative vs. change-of-state readings (note the correspondence to the forms at the top and bottom of Table 2), but this is inconclusive and not very relevant to our analysis.

Clusters 3 and 4, which are adjacent to each other, form the core of the distribution, both in terms of their relative placement and their frequency; each of these clusters accounts for more than 40% of the total data. In terms of their profiles, the *es*-present is the most frequent form in both clusters 3 and 4, followed by the *bū*-present and *es*-aorist. Only 12.5% of the data is distributed across the three more peripheral constructions in clusters 1, 2, and 5. Of the three peripheral constructions, the most idiosyncratic are the AUXILIARY construction (with most of the attestations split between the *es*-present and the subjunctive) and the EXISTENTIAL IMPERSONAL (for which the *bū*-aorist comprises all of the data).

The AUXILIARY and EXISTENTIAL IMPERSONAL are by far the most distinct constructions in terms of grammatical profiles. Apart from that, we see several expected clusterings: most of the copular constructions constitute a cluster, and so do the personal existential construction variants (but not the EXISTENTIAL IMPERSONAL). What is less expected, however, is that the POSITION/GOAL construction does not cluster with the copular constructions, but lands in a middle position closer to the existentials. Even more unexpected is the fact that the AUXILIAROID construction is not at all similar in grammatical profile to the AUXILIARY construction—in fact it clusters with the personal existentials. It is also interesting to note that the COPULAR IMPERSONAL construction appears to be much more similar to the personal existentials than to the other copular constructions.

The correspondence analysis plot in Figure 2 can be interpreted as a radial category of *byti* constructions, with a prototype vs. periphery structure. The prototypical high-frequency uses of the copular constructions in cluster 3 and the EXISTENTIAL, POSITION/GOAL and AUXILIAROID uses in cluster 4 are central in this structure. Clusters 3 and 4 thus form the conceptual core of *byti*'s radial category. The AUXILIARY and impersonal uses in clusters 1, 2, and 5 are at the periphery.

This outcome supports the one-verb hypothesis in that it yields a mostly coherent center-periphery structure. However, it is still possible that we will find evidence in favor of the two-verb hypothesis, so it is necessary to look more deeply at the constructions.

In the following subsections, we examine the five construction clusters with respect to the grammatical profile of *byti* and the light this may shed on our two hypotheses. We are particularly interested in finding whether any construction has specialized to use with one of the groups of forms (*es-* or *bū-*) as opposed to the other, and whether there is evidence of contrast in constructions where the "duplicate" forms are represented.

In each of the following subsections we present a graph of the grammatical profile of *byti* in the given construction or cluster of constructions (see Figures 3–7). The bars on the graph are arranged to reflect the groups of forms and morphological subparadigms as given in Table 1. The first five bars from the

left represent the subparadigms particular to the *es*-group: *es*-present, *es*-imperfect, *es*-aorist, *es*-present participle, and subjunctive. The next three bars represent the subparadigms particular to the *bū*-group: *bū*-present, *bū*-aorist, *bū*-present participle. The remaining four bars represent the "shared" forms, all of which belong to the *bū*-group: *bū*-past participle, imperative, infinitive, and *l*-form. In order to show all the grammatical profiles on the same scale, the y-axis for each graph is the percentage of forms in the profile. For example, Figure 3 shows that the *es*-present and the subjunctive each account for over 40% of the forms of *byti* in the AUXILIARY construction, with the remainder of the profile distributed across the *es*-imperfect, *es*-aorist, and *bū*-aorist.

4.3 The AUXILIARY construction

The use of *byti* as an auxiliary to *l*-forms turns out to be the most distinct construction of all. Its main differentiating feature is the use of subjunctive forms, but even when we exclude this subparadigm (as in Figure 2), this construction is clearly set apart from the others.
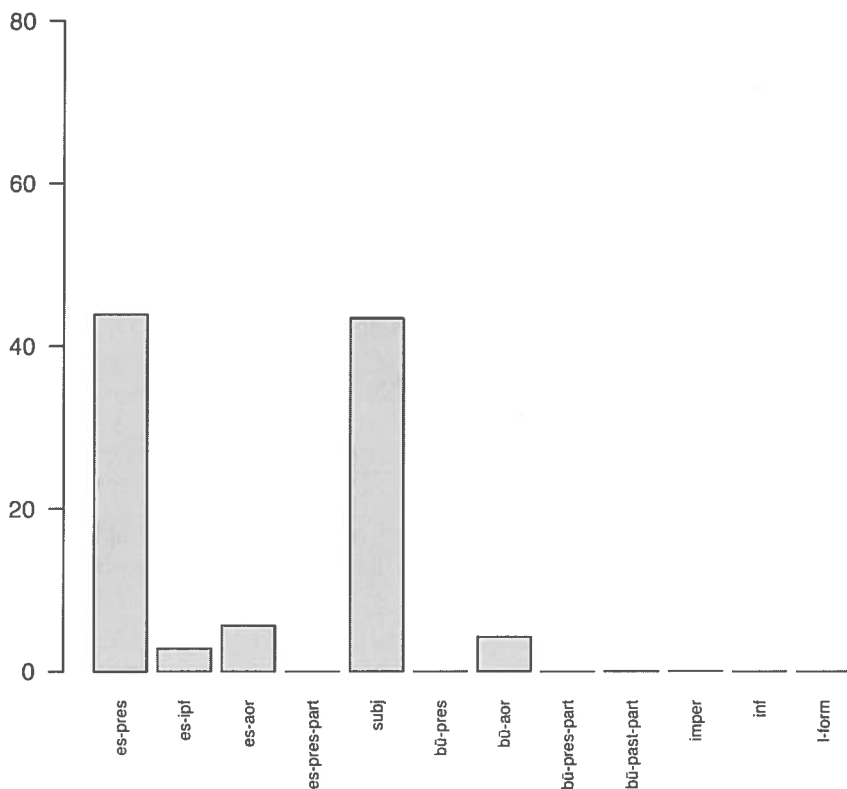
Figure 3: Grammatical profile of *byti* in the AUXILIARY construction

In Figure 3, the x-axis represents the subparadigms of *byti* (see Table 1), and the y-axis is the percentage of forms that appear in the given subparadigm for this construction. The *es*-present and the subj (=subjunctive) forms each account for over 40% of the forms of *byti* in the auxiliary construction, there is less representation for the *es*-imperfect, *es*-aorist and *bū*-aorist, and the remaining forms are not found.

With regard to our two hypotheses, it is particularly interesting to note that the AUXILIARY's grammatical profile is limited almost exclusively to *es*-group forms — the construction is not even attested with infinitives, *l*-forms or imperatives in our dataset, the "shared" *bū*-group forms that are clearly not strongly tied to any particular aspectual meaning.[10] The only exceptions are nine examples of the *bū*-aorist. However, these aorists appear to have the same function as the subjunctive form *bim, bi* ... with which they sometimes even co-occur (example 16), and as such do not contrast with the *es*-aorist. Note that most examples are third person singular aorists with the form *by*. The usual third singular *bystъ* form of the aorist does not occur in this construction in our dataset.

(16) *ašte otъ sego mira bi bylo cstvo moe. slugy ubo moję podvizaly sę byšę. da ne prědanъ bimь ijuděomъ*

'If my kingdom were of this world, my servants would have been fighting, that I might not be delivered over to the Jews' (Mar. John 18:36)

The AUXILIARY construction occurs with both the *es*-imperfect and the *es*-aorist. However, they seem semantically indistinguishable, and are in near-perfect complementary distribution, as shown in Table 4. A similar distribution is found also for the cluster 5 constructions, but not for cluster 3.

Table 4: Person and number distribution of *es*-imperfect and *es*-aorist in the AUXILIARY construction.

	es-imperfect	*es*-aorist
3sg	0	11
3pl	6	1

The single third person plural attestation of the *es*-aorist (example 17) is found in exactly the same context as one of the third person plural *es*-imperfect attestations (example 18).

(17) *jęže běaxǫ prišьly sъ nimь*

who be.ES-IMPF.3pl come with him 'those who had come with him' (Mar. Luke 23:55)

(18) *iže běšę sь nejǫ prišli*

who be.ES-AOR.3PL with her come 'those who had come with her' (Supr. 3)

---

10. But note that attestations with *bū*-present forms are found as auxiliaries in Old Russian.

Since the *es*-aorist is semantically indistinguishable from the *es*-imperfect, there is nothing to suggest that it could contrast with the *bū*-aorist either, even if the latter had had regular aorist semantics.

Thus, we see that the AUXILIARY construction is in sharp contrast with the other constructions. With its strong preference for *es*-forms, the AUXILIARY makes the strongest claim for the existence of a separate *es*-verb. The few attestations of the *bū*-aorist in this construction appear to be in free variation with the subjunctive, and the distribution of the *es*-imperfect and the *es*-aorist suggests a close relationship between these two subparadigms, confirming the view that they functioned as a unit (see section 2.1 of Part One).

4.4 The EXISTENTIAL IMPERSONAL construction

This construction is also clearly distinct from all other constructions. As shown in Figure 4, the EXISTENTIAL IMPERSONAL construction occurs exclusively with the *bū*-aorist in our dataset (example 19).

(19) *i bystъ egda sъkonьča isъ pritъčę siję.*
  'And it came to pass when Jesus had finished these parables' (Mar. Matt. 13:53)

Among the ten constructions *byti* appears in, this construction makes the strongest case for the existence of a separate *bū-group* verb.

4.5 Personal copular constructions

The COPULA, COPULAR POSSESSIVE and COPULAR BENEFACTIVE constructions are very different from the two previous constructions in that nearly all forms of both groups are represented in the grammatical profile, although it is dominated by the *es*-present subparadigm. These results do not strongly support the two-verb hypothesis.

Let us first turn to the *bū*-present attestations. If the *bū*-present is really a perfective present, we expect it to have a change-of-state meaning. However, the distribution of Greek source lemmas does not support this interpretation. The majority of attestations (54) translate the stative *eimi* rather than the change-of-state *gignomai* (18 attestations).[11] When we examine the examples more closely, we find that the *eimi* translations are either clearly stative (20) or ambiguous.

(20) *i ašte ubo bǫdetъ domъ dostoinъ. pridetъ mirъ vašъ na nь*
  'And if the house be worthy, your peace will come upon it' (Mar. Matt. 10:13)

The *gignomai* translations, on the other hand, include both clear change-of-state attestations (21), as well as a number of ambiguous ones.

---

11. The R script available at hdl:10037.1/10074 prints out all the OCS examples of *eimi* and *gignomai* translations.
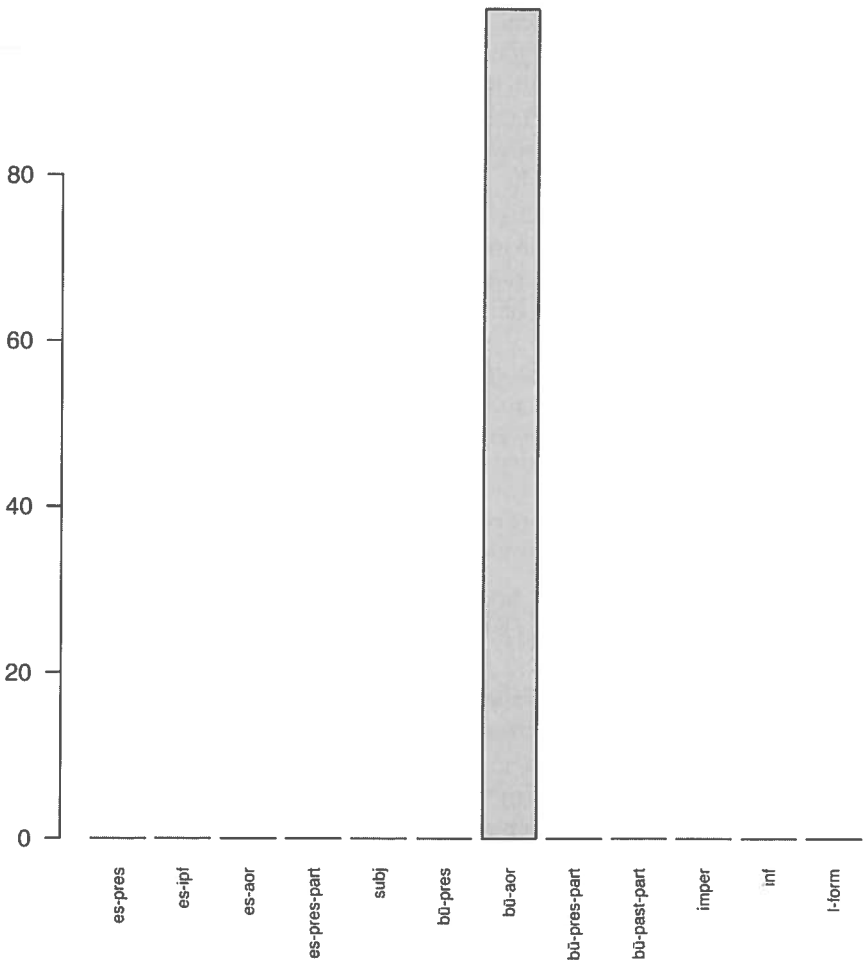
Figure 4: Grammatical profile of *byti* in the EXISTENTIAL IMPERSONAL construction

(21)   *ašte sъъ esi bžii rъci kameniju semu da bǫdetъ xlěbъ*
       'If you are the son of God, tell this stone to become bread' (Mar. Luke 4:3)

The examples therefore suggest that, at least in this construction, the *bū*-present subparadigm is not a perfective present, but rather an aspectually neutral future tense form that can express both states and changes of state.[12]

In this cluster of constructions we also find both the *es*-imperfect and the *es*-aorist. As we see in Table 5, these forms contrast in third person singular,

---

12. Note, however, that the *bū*-present is not established as a future tense auxiliary in OCS; cf. Chvany (1975: 248–249) for discussion and references.
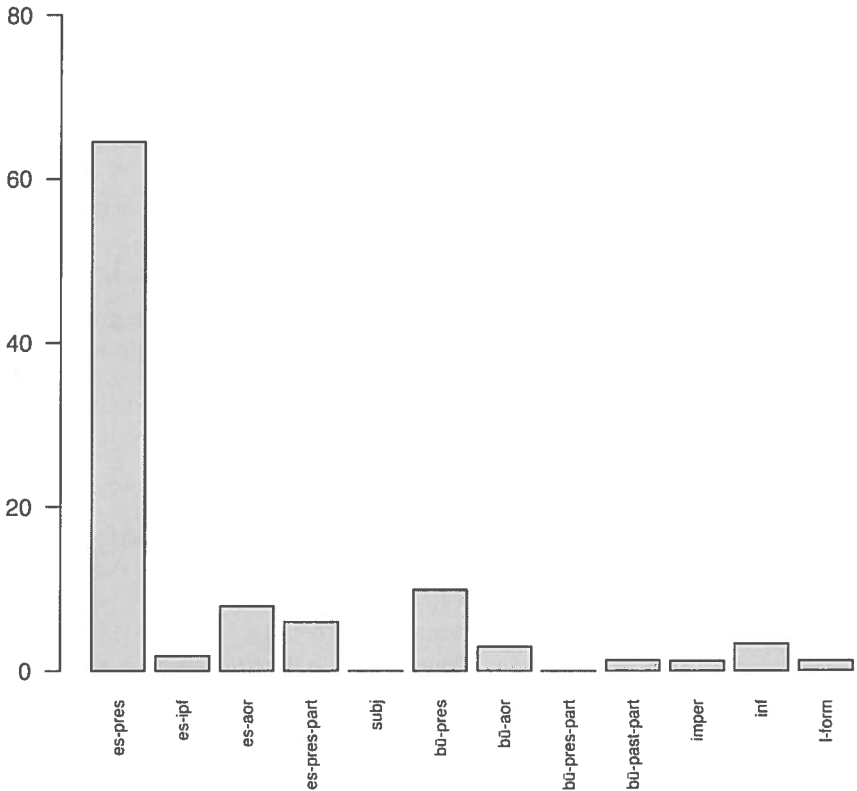
Figure 5: Combined grammatical profile of *byti* in the personal copular constructions

dual and plural. In other words, there is no clear division of labor as observed for the AUXILIARY construction. In fact, this is the only environment where we might find a semantic contrast between these two forms that could support the two-verb hypothesis, by providing evidence that the *es*-aorist could be distinct from the *es*-imperfect. If it is distinct, the *es*-aorist might also be able to contrast aspectually with the *bū*-aorist.

The *es*-imperfect examples generally provide background information and explanations to a past-tense narrative (example 22).

Table 5: Distribution of *es*-imperfect and *es*-aorist in the personal copular constructions

	es-imperfect	*es*-aorist
3sg	8	62
3du	6	3
3pl	4	7

(22) (Jesus saw Peter and Andrew casting nets into the sea)
      běašete *bo rybařě*
      'for they were fishermen' (Mar. Mark 1:16)

However, we find exactly the same kinds of examples with the third person *es*-aorist examples.

(23) (But the boat by this time was a long way from the land, beaten by the waves)
      bě *bo protivenъ větrъ*
      'for the wind was against them' (Mar. Matt. 14:24)

Since there are more *es*-aorist attestations, there is naturally also a greater variety of examples, including examples where *byti* denotes a delimited past state.

(24) (You should rejoice)
      ěko bratrъ tvoi sь mrъtvь **bě** *i ožive*
      'because your brother was dead and has come back to life' (Mar. Luke 15:32)

Such a delimitative reading is not uncommon with simplex imperfective (or neutral) verbs in the aorist (Eckhoff and Haug under submission). We have no such examples with the *es*-imperfect in our dataset, so there is the possibility that this may be a real semantic difference between the two subparadigms in the COPULA construction. There is, however, no indication that the *es*-imperfects indicate simultaneity while the *es*-aorists do not, as van Schooneveld claims. At best we can only say that the results are inconclusive and there is no consistent contrast here.

Table 6: Greek source lemmas of imperatives, infinitives and *l*-forms in personal copular constructions

	eimi 'be'	*gignomai* 'become'
imperative	3	4
infinitive	15	7
l-form	8	0

The infinitives and imperatives translate both Greek *eimi* 'be' and *gignomai* 'become', whereas the attested *l*-forms translate only *eimi* (Table 6). This suggests that these forms do not have a consistent aspectual preference in this construction, and that stative readings are very common despite the *bū*-group origins of these forms (25).[13]

---

13. The Greek correspondence for example (25) is:
    pōs legousin ton Khriston einai Daueid huion
    how say.PRS.3PL the.M.ACC.SG Christ.ACC.SG be.PRS.INF David.GEN.SG son.ACC.SG
    'How can they say that the Christ is David's son?'

(25)   *kako gljǫtъ edini xa* **byti** *sna dva*
       'How is it that they say the Christ is David's son?' (Mar. Luke 20:41)

All in all, the behavior of *byti* in the personal copular constructions mostly suggests that it is a single verb. However, it is possible that the *es*-aorist may have readings that the *es*-imperfect lacks in this construction, and this could entail some contrast between the *bū*-aorist and the *es*-aorist.

4.6 The COPULAR IMPERSONAL construction
As seen in Figure 2, the COPULAR IMPERSONAL construction does not cluster with the other copular constructions at all, but rather with the existentials. The most striking feature of the grammatical profile of the COPULAR IMPERSONAL construction is that the dominant subparadigm is the *es*-aorist—this appears to be what separates it both from the copular constructions and the existentials. Moreover, there are no *es*-imperfect forms. We should be cautious in
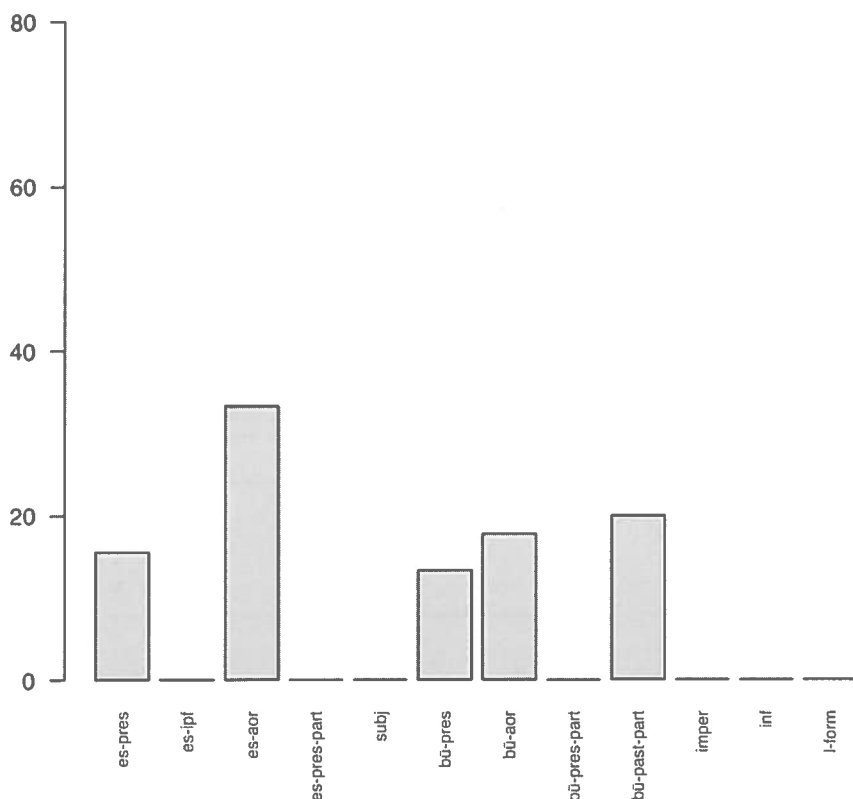

Figure 6: Grammatical profile of *byti* in the COPULAR IMPERSONAL construction

attaching too much weight to this, however, since the pattern is not very frequent; there are only fifteen *es*-aorist attestations of this construction.

The subparadigms represented in the grammatical profile are *es*-present, *bū*-present, *es*-aorist and *bū*-aorist, in nearly equal proportions, and also the *bū*-past participle. It is tempting to think of this as support for the two-verb hypothesis. However, we find that the *bū*-present attestations predominantly translate Greek *eimi* (six *eimi* attestations, only one *gignomai* attestation), which indicates that in this construction, as we saw in the personal copular construction cluster, the *bū*-present subparadigm is not a perfective present, but regularly expresses states in the future (example 26).

(26) *tako bǫdetъ vъ sъkonьčanie věka*
       'thus it will be at the end of time' (Mar. Matt. 13:49)

Thus, the grammatical profile of this construction does not particularly support the two-verb hypothesis. It is, however, our only example of the *es*-aorist apparently specializing with a construction at the expense of the *es*-imperfect.

4.7 Existential constructions, position/goal and auxiliaroids
As we saw in Figure 2, the AUXILIAROID pattern (*byti* in passive and progressive constructions) turns out to have a grammatical profile very different from that of the AUXILIARY construction, but remarkably similar to that of the cluster of personal existential constructions. Likewise, the POSITION/GOAL construction turns out to cluster with the personal existentials rather than with the personal copular constructions. The grammatical profiles of these constructions are similar to the cluster of personal copular constructions in that the *es*-present is generally the most frequent subparadigm, but *bū*-aorists, *bū*-presents and *es*-aorists are also well represented in this cluster.

Table 7: Greek source lemmas for *bū*-present attestations of EXISTENTIAL, EXISTENTIAL POSSESSIVE, AUXILIAROID and POSITION/GOAL constructions.

	eimi 'be'	*gignomai* 'become'
EXISTENTIAL	24	20
EXISTENTIAL POSSESSIVE	12	4
AUXILIAROID	21	3
POSITION/GOAL	29	5

Again the distribution of Greek source lemmas suggests that the *bū*-present has both stative and change-of-state readings and is thus not a straightforward perfective present in these constructions either. However, we also see that while the AUXILIAROID and POSITION/GOAL constructions have a preference for the stative *eimi* (example 27), the EXISTENTIAL construction has fairly equal

Existential

Existential possessive

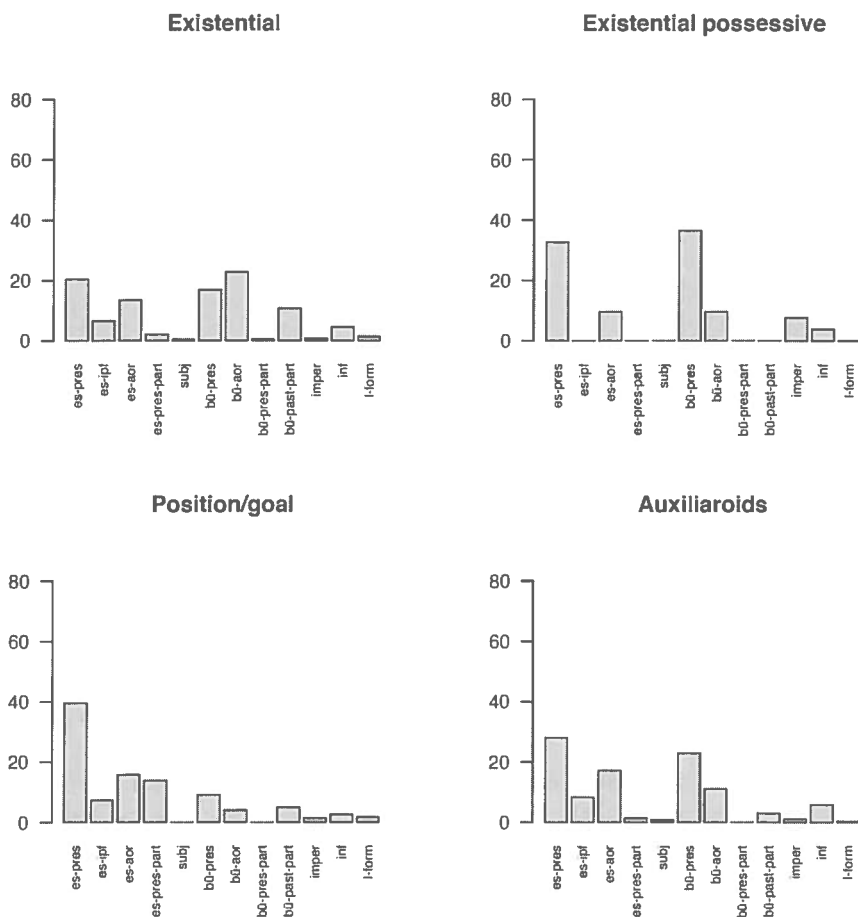**Position/goal**

Auxiliaroids

Figure 7: Grammatical profiles of *byti* in the EXISTENTIAL, EXISTENTIAL POSSESSIVE, AUXILIAROID and POSITION/GOAL constructions

shares of both source lemmas (with *eimi* for example 28 and and *gignomai* for example 29). The similarity between these constructions may therefore be less than the comparison of grammatical profiles suggests.

(27) *vъ tǫ noštь **bǫdete** dъva na loži edinomь*
      'on that night there will be two in one bed' (Mar. Luke 17:34)

(28) *tu **bǫdetъ** plačь i skrъžetъ zǫbomь*
      'there will be weeping and gnashing of teeth' (Mar. Matt. 8:12)

(29) *nъ ne vъ prazdьnikъ da ne mlъva **bǫdetъ** v ljudexъ*
      'Not during the feast, lest there be an uproar among the people.' (Mar. Matt. 26:5)

Table 8: Person/number distribution of *es*-imperfect and *es*-aorist across constructions in the existential cluster in OCS

		es-imperfect	*es*-aorist
EXISTENTIAL	3sg	9	37
	3pl	10	2
EXISTENTIAL POSSESSIVE	3sg	0	4
	3du	0	1
AUXILIAROID	3sg	4	59
	3du	6	1
	3pl	20	2
POSITION/GOAL	3sg	9	56
	3du	1	0
	3pl	21	4

Most of the constructions in this cluster have both *es*-imperfect and *es*-aorist attestations, but as shown in Table 8, there appears to be a preference for using the *es*-aorist in the third person singular and the *es*-imperfect in the third person plural (and dual). This distribution is parallel to the one found for the AUXILIARY construction. This suggests that the two subparadigms were probably not perceived to differ semantically, and this is what we find when we inspect the examples.[14] In the AUXILIAROID construction we find no difference between use with the present active and passive participles: both forms appear with the same person/number preference pattern, and with no obvious contrast. All in all, this suggests that in these constructions, the *es*-imperfect and the *es*-aorist were perceived as a unit, suggesting that in a semantic sense there was no *es*-aorist to contrast with the *bū*-aorist.

With infinitives, imperatives and *l*-forms, we recognize the same pattern as we saw with the *bū*-present attestations: the EXISTENTIAL and EXISTENTIAL POSSESSIVE constructions have attestations that mostly translate change-of-state *gignomai* (example 30), whereas the AUXILIAROID and POSITION/GOAL constructions mostly have ones translating *eimi* (example 31). Again, this indicates that the latter two constructions may not be as similar to the personal existentials as the plot in Figure 2 suggests.

(30)   *podobaatъ bo simъ prěžde **byti**. nъ ne u abie konьčina*
       'These things must happen first, but the end will not come right away.' (Mar. Luke 21:9)

(31)   *gi ašte bi sъde **bylъ**. ne bi bratrъ moi umrъlъ*
       'Lord, if you had been here, my brother would not have died.' (Mar. John 11:21)

---

14. The third person singular examples of the *es*-imperfect in the EXISTENTIAL and POSITION/GOAL constructions are more common in the *Suprasliensis* than in the *Marianus*.

Table 9: Greek source lemmas for imperatives, infinitives and *l*-forms in the existential cluster

		eimi 'be'	*gignomai* 'become'
EXISTENTIAL	imperative	0	1
	infinitive	3	9
	l-form	1	3
EXISTENTIAL POSSESSIVE	imperative	0	4
	infinitive	1	0
	l-form	0	0
AUXILIAROID	imperative	3	0
	infinitive	1	0
	l-form	0	0
POSITION/GOAL	imperative	2	2
	infinitive	6	0
	l-form	7	0

The preference for change-of-state readings of the "shared" forms with the personal existentials, and for stative readings with the AUXILIAROID and POSITION/GOAL constructions, suggests that the two latter constructions are actually more similar to the personal copular constructions.

For this cluster as well, the evidence suggests that a single-verb analysis is preferable. However, it seems that the personal existential constructions have a closer association of the *bū*-group forms with change-of-state semantics than the AUXILIAROID and POSITION/GOAL constructions, and also than what we find in the personal copular construction cluster.

4.8 Some generalizations from constructional profiles

In comparing the behavior of *byti* across the constructions, we can make certain generalizations. The *bū*-present looks mostly like a non-aspectual future tense, rather than a perfective present, but it has a stronger preference for change-of-state readings in the existential constructions in cluster 5.

The "shared forms" (imperative, infinitive, *l*-form) seem to be truly shared between stative and change-of-state readings in most environments, but they also show a greater preference for change-of-state readings in the existential constructions. This preference for change-of-state is less characteristic of the POSITION/GOAL and AUXILIAROID constructions; however, this level of detail is not captured by the distribution of the subparadigms.

The question of an aspectual contrast between the *es*-aorist and the *bū*-aorist hinges on the independent existence of the *es*-aorist, i.e. on environments where it is not in complementary distribution with forms from the *es*-imperfect paradigm, and where it has meanings that the *es*-imperfect does not have. We see that the only environment where a real potential contrast be-

tween the *es*-imperfect and the *es*-aorist is possible is in the personal copular constructions, but that the examples themselves do not give conclusive evidence for a semantic contrast. The *bū*-aorist and the *bū*-past participle have predominantly change-of-state semantics in all environments (except in the AUXILIARY construction), but since these inflectional forms are likely to carry perfective semantics (Eckhoff and Haug, in submission), this is not evidence in favor of an aspectual pair.

5. Conclusion

We find that the grammatical behavior of *byti* is neatly integrated into the overall picture of the OCS verb inventory, and in this context *byti* is best interpreted as a single verb. The use of *byti* across grammatical constructions is indicative of a single verb rather than a pair of verbs because the aspectual contrast we would expect to find with an aspectual pair is lacking. Each grammatical construction is strongly attracted only to certain grammatical forms of *byti*, these rarely involve possible aspectual contrasts, and even when contrasts might be possible, closer analysis of examples does not support positing a verb pair. We are able to offer a radial category analysis of the grammatical constructions themselves, which gives us a comprehensive yet detailed picture of how *byti* is used.

Rather than using a pre-determined set of constructions, we allowed patterns to emerge directly from the data, yielding ten constructions describable in terms of their syntactic characteristics. A correspondence analysis of the grammatical profile of *byti* in each construction shows that there are two central clusters of constructions representing personal copular, personal existential, positional, and "auxiliaroid" uses, and three constructions that are peripheral, representing auxiliary, existential impersonal, and copular impersonal uses. We used the Greek correspondences as an approximate indicator of the semantics of *byti*. The Greek data showed us that some clusters of constructions were less uniform than subparadigm distribution alone might suggest.

This center-periphery structure suggests a radial category network of constructions for *byti*. This result is of both theoretical and descriptive value. From the perspective of cognitive linguistics, we would expect the polysemy of a verb such as *byti* to have the structure of a radial category, and the various nodes of that category to have different yet related meanings. Given the relationship between form and meaning, those meanings should then also be associated with differences in grammatical profiles and constructional profiles. Our correspondence analysis of *byti* constructions by grammatical profile (Figure 2) shows exactly the structure of relationships we would expect to obtain for a polysemous verb like *byti*. As far as we know, this is the first study to show how a radial category network structure can be obtained by purely objective means. In terms of description, the radial category network

of this verb makes it possible to clearly identify the prototypical syntactic uses of *byti*, which also correspond to a conceptual core. The auxiliary and impersonal uses are strongly differentiated from the remaining uses, and the "auxiliaroid" type is far removed from the true auxiliary.

We further inspected each cluster of constructions to seek any evidence that might support the two-verb hypothesis. Two of the peripheral constructions are apparently strongly specialized to use with only one of the form-based groups: the AUXILIARY construction uses *es*-group forms almost exclusively, and the EXISTENTIAL IMPERSONAL construction uses *bū*-group forms exclusively. While these two constructions give credence to the two-verb hypothesis, the remaining constructions do not. These constructions (which also represent 89% of the data) use forms of both stems and do not provide evidence of the type of contrast we should find if the "duplicate" forms belonged to aspectually paired verbs. The *bū*-present subparadigm does not display the behavior that we expect from a perfective present in OCS. The infinitive, imperative, and *l*-forms clearly express both stative and change-of-state meanings, despite their *bū*-group origins. There is no apparent semantic difference between the *es*-imperfect and the *es*-aorist, suggesting that the *es-group* paradigm is more defective than van Schooneveld's clean separation implies, and by extension that a contrast between the *es*-aorist and the *bū*-aorist is dubious. In general, we find that while the *es*-group forms reliably express stative semantics, this meaning is also shared by most of the *bū*-group forms. The exceptions are the *bū*-aorist and the *bū*-past participle, but these subparadigms are likely to be perfective, which would disallow stative readings.

We conclude that it is not plausible to analyze OCS *byti* as an aspectual pair of verbs. The data suggest instead that *byti* is a single, though polysemous, verb with a rich inventory of subparadigms and constructions. It is important to recognize that *byti* is indeed unusual, and to represent its unique features rather than trying to force it into a pre-determined structure. One could take issue with the very approach to the description of a verb and its subparadigms in terms of absolute values on the grounds that this type of analysis is artificially rigid. Our empirical approach moves beyond structuralism, acknowledging the complexity of the language data at hand and the fact that a verb can be many things, which is clearly the case for *byti*.

REFERENCES

Churchland, Patricia. *Neurophilosophy*. Cambridge: MIT Press, 1986.
Churchland, Paul. *The engine of reason, the seat of the soul*. Cambridge: MIT Press, 1995.

Chvany, Catherine V. *On the Syntax of BE-sentences in Russian*. Cambridge, MA: Slavica Publishers, 1975.

Croft, William. *Radical Construction Grammar*. Oxford: Oxford University Press, 2001.

Dąbrowska, Ewa. *Language, Mind and Brain*. Edinburgh: Edinburgh University Press, 2004.

Dickey, Stephen M. *Parameters of Slavic Aspect: A Cognitive Approach*. Stanford CSLI Publications, 2000.

Divjak, Dagmar. *Structuring the Lexicon: a Clustered Model for Near-Synonymy*. Berlin: Mouton de Gruyter, 2010.

Divjak, Dagmar and Stefan Th. Gries. "Ways of trying in Russian: Clustering behavioral profiles." *Corpus Linguistics and Linguistic Theory* 2 (2006): 23–60.

Dostál, Antonín. *Studie o vidovém systému v staroslověnštině*. Prague: Státní pedagogické nakladatelství, 1954.

Eckhoff, Hanne, Laura A. Janda and Tore Nesset. "Old Church Slavonic *byti* Part One: Grammatical Profiling Analysis." *Slavic and East European Journal* 58.3 (2014): 462–497.

Eckhoff, Hanne M. and Dag Haug. "Aspect and prefixation in Old Church Slavonic." Submitted.

Fauconnier, Gilles, and Mark Turner. *The way we think: Conceptual blending and the mind's hidden complexities*. New York: Basic Books, 2002.

Fried, Mirjam. "A Construction Grammar approach to grammatical change." (ed.). *Diachronic Slavonic Syntax. Gradual Changes in Focus. Wiener Slawistischer Almanach (Sonderband 74)*, 2010. Ed. Hansen, Björn and Jasmina Grković-Major, 53–62.

Geeraerts, Dirk. "Cognitive Grammar and the History of Lexical Semantics." *Topics in Cognitive Linguistics*. Ed. Brygida Rudzka-Ostyn. Amsterdam/Philadelphia: John Benjamins, 1987. 647–678.

Geeraerts, Dirk. "Where does prototypicality come from?" *Topics in Cognitive Linguistics*. Ed. Brygida Rudzka-Ostyn. Amsterdam: John Benjamins, 1988. 207–229.

Glynn, Dylan. "Synonymy, Lexical Fields, and Grammatical Constructions. Developing usage-based methodology for Cognitive Semantics." *Cognitive Foundations of Linguistic Usage Patterns*. Eds. H.J. Schmied and S. Handl. Berlin: Mouton de Gruyter, 2010. 89–118.

Goldberg, Adele. *Constructions at Work: The Nature of Generalizations in Language*. Oxford: Oxford University Press, 2006.

Gries, Stefan Th. and Dagmar Divjak. "Behavioral profiles: a corpus-based approach towards cognitive semantic analysis." *New Directions in Cognitive Linguistics*. Eds. Vyvyan Evans and Stephanie S. Pourcel, Amsterdam: John Benjamins, 2009. 57–75.

Janda, Laura A., Valery Solovyev. "What Constructional Profiles Reveal About Synonymy: A Case Study of Russian Words for sadness and happiness." *Cognitive Linguistics* 20.2 (2009): 367–393.

Kuznetsova, Julia. *Linguistic Profiles. Correlations between Form and Meaning*. PhD Dissertation, University of Tromsø, 2013.

Lakoff, George. *Women, Fire, and Dangerous Things*. Chicago: Chicago University Press, 1987.

Langacker, Ronald W. *Essentials of Cognitive Grammar*. Oxford: Oxford University Press, 2013.

Lewandowska-Tomaszczyk, Barbara. "Polysemy, prototypes, and radial categories." *The Oxford Handbook of Cognitive Linguistics*. Ed. Dirk Geeraerts and Hubert Cuyckens. Oxford: Oxford University Press, 2007. 139-169.

Maslov, Jurij S. *Očerki po aspektologii*. Leningrad: Leningrad State University, 1984.

Plungian, Vladimir. *Vvedenie v grammatičeskuju semantiku: Grammatičeskie značenija i grammatičeskie sistemy jazykov mira*. Moscow: RGGU, 2011.

Rakhilina, Ekaterina. *Kognitivnyj analiz predmetnyx imen: semantika i sočetaemost'*, 2nd edition. Moscow: Azbukovnik, 2010.

Rix, Helmut. *Lexikon der indogermanischen Verben: Die Wurzeln und ihre Primärstammbildungen*. Dr.-Ludwig-Reichert-Verlag: Wiesbaden, 2001.

Rosch, Eleanor. "Natural Categories." *Cognitive psychology* 4 (1973a): 328–350.

———. 1973b. "On the internal structure of perceptual and semantic categories." *Cognitive development and the acquisition of language*. Ed. Timothy E. Moore. New York: Academic Press, 1973b. 111–144.

———. 1978. "Principles of categorization." *Cognition and categorization*. Ed. Eleanor Rosch and Barbara B. Lloyd. Hillsdale, NJ: Erlbaum, 1978. 27–48.

Shevelov, George Y. *A Prehistory of Slavic*. New York: Columbia University Press, 1965.

Stefanowitsch, Anatol. "Corpus-based approaches to metaphor and metonymy." *Corpus-based Approaches to Metaphor and Metonymy*. Ed. Anatol Stefanowitsch and Stefan Th. Gries. Berlin: Mouton de Gruyter, 2006a. 1–16.

———. "Words and their metaphors: A corpus-based approach." *Corpus-based Approaches to Metaphor and Metonymy*. Ed. Anatol Stefanowitsch and Stefan Th. Gries. Berlin: Mouton de Gruyter, 2006b. 61–105.

Stefanowitsch, Anatol and Stefan Th. Gries. "Collostructions: Investigating the interaction of words and constructions." *International Journal of Corpus Linguistics* 8 (2003): 209–243.

———. "Covarying collexemes." *Corpus Linguistics and Linguistic Theory* 1 (2005): 1–43.

Svanlund, Jan. "Metaphor and convention." *Cognitive Linguistics* 18 (2007), 47–89.

Talmy, Leonard. *Toward a cognitive semantics*. Cambridge, MA: MIT Press, 2000.

Taylor, John R. *Linguistic Categorization*. Oxford: Clarendon Press, 1995.

Tomasello, Michael. *Constructing a language: a usage-based theory of language acquisition*. Cambridge, MA: Harvard University Press, 2003.

van Schooneveld, Cornelis H. "The aspect system of the Old Church Slavonic and Old Russian verbum finitum *byti*". *Word* 7.2 (1951): 96–103.

Аннотация

Ханне М. Экхофф, Лора А. Янда и Туре Нессет

Старославянский глагол *быти* (часть вторая: анализ конструкционных профилей)

Старославянский глагол *быти* используется в необычно богатом наборе грамматических конструкций. Для разрешения вопроса о статусе этого глагола (один глагол или глагольная пара), мы анализируем распределение конструкций на корпусном материале. Признавая вариативность и неоднозначность данных, наше исследование выходит за рамки строго структурального подхода к употреблению *быти*. Предлагаемый анализ интересен как с точки зрения лингвистической теории, так и с точки зрения описания языка. Понятие радиальной категории является центральным для когнитивной лингвистики, и до настоящего времени радиальные категории предлагались на основе квалитативного анализа конкретных данных. Мы демонстрируем, что структуры категории выводимы из статистического распределения лингвистических данных. Мы предлагаем компактное описание глагола *быти*, в котором четко разделяются центральные и более периферийные употребления, а также показаны связи между ними. Несмотря на то что некоторые данные указывают на парность, интерпретация *быти* как одного глагола является более оправданной.

REVIEW ARTICLE

RECOVERING KOROLENKO

Mark Conliffe, Willamette University

T. M. Makagonova and I. T. Piattoeva, ed. *Neizdannyi V. G. Korolenko. Publitsistika 1914–1916, 1917–1918, 1919–1921*. Moscow: Pashkov dom, 2011–2013. Vol. 1: 352 pp. 300 RUB (cloth); vol. 2: 448 pp. 300 RUB (cloth); vol. 3: 464 pp. 300 RUB (cloth).

27 July 2013 marked 160 years since the birth of Vladimir Korolenko (1853–1921), and throughout the summer and autumn of 2013, meetings, exhibitions, banquets, journals, and newspapers in Russia and Ukraine recognized his life and work. The collection under review also marks this anniversary. For these volumes Tamara Mironovna Makagonova (1939–2010) and Irina Taunovna Piattoeva, scholars and senior colleagues in the Manuscript Division of the Russian State Library, combed the Korolenko manuscript collection to recover Korolenko's collected writings from the turbulent years 1914–1921, and thus in this collection they enlighten our understanding of the last eight years of Korolenko's life with rarely republished writings and previously unpublished materials and commentaries.

Neizdannyi V. G. Korolenko is the most recent publication in a thirty-five-year push by scholars and publishers in Russia and Ukraine to recover from relative quietude the less well-known Korolenko of the WWI, Revolution, and Civil War years. Some of Korolenko's unpublished letters and diary entries appeared as early as the late 1970s, and this recovery effort, spearheaded by Aleksandr Venaminovich Khrabrovitsky, perhaps most famously attracted attention with the 1988 publication of Korolenko's "Letters to Lunacharsky" in *Novyi mir (New World)*, a noteworthy cultural occurrence in its own right that provided readers with their first Soviet edition of the letters (Korolenko 1988a).[1] Gathering materials from archives and Soviet and foreign publications with small print runs, Khrabrovitsky, already late in life, worked indefatigably to set the record on Korolenko straight.[2] Other publications followed, offering a range of materials usually in "collected works" format.[3]

The "Letters" or discussion of them are the constant entry in most publications that have appeared since 1985, and the compilers and editors of those editions distinguish their own collections with the particular selection of materials that they choose to accompany the "Letters."

---

1. "Letters" was first published as *Pis'ma k Lunacharskomu* (Paris: Zadruga, zagranichnyi otdel, 1922). For the 1970s publications, see Khrabrovitskii 1977/1979a, Khrabrovitskii 1977/1979b, Khrabrovitskii 1979/1981, and Korolenko 1977/1979. See also the important 1985 publication by P. I. Negretov and Khrabrovitskii (published in Russia as Korolenko 1990).

2. See Natal'ia Zakirova's introduction to Khrabrovitsky's work on Korolenko (Zakirova, Skopkareva, and Trukhanenko 10–36).

3. See, for example, Korolenko 1988b; Korolenko 1988c; volume 3 of Korolenko 1989–91; Korolenko 1991; Gor'kii 149–92; Levin; Korolenko 2001; Korolenko 2002; Vitruk; and Zakirova, Skopkareva, and Trukhanenko.