
LANGUAGE ENTROPY OF CHURCH SLAVONIC LITURGICAL TEXTS

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Abstract

This study investigates the necessity of revising Church Slavonic liturgical texts, drawing upon the author's extensive theological background and a thorough literature review. By employing linguistic entropy as a diagnostic tool, I assess the structural and stylistic consistency of these texts in their role as instruments of spiritual communication. Church Slavonic, despite its historical and theological significance, presents significant challenges due to semantic discrepancies and stylistic irregularities that may obscure meaning and affect comprehension.

In this research, linguistic entropy is calculated based on the probability of word placement errors, measuring disorder within the textual structure. While additional linguistic factors such as punctuation inconsistencies and grammatical errors may contribute to the overall entropy, they are not quantitatively assessed in this study. The primary objective is to establish a systematic framework for evaluating word-level disorder in liturgical texts, providing a foundation for further refinements in textual analysis.

The results indicate a substantial degree of disorder in Church Slavonic texts, with an average entropy of 8.57%, derived from frequency analysis of misplaced words and structural inconsistencies. Given that additional linguistic factors may increase this percentage, addressing these inconsistencies is crucial to enhancing the comprehensibility and effectiveness of Church Slavonic as a liturgical language. Ensuring precision in sacred texts is paramount, as linguistic ambiguity can significantly affect both theological interpretation and liturgical practice.

Keywords: Church Slavonic, Liturgical Texts, Entropy, Stylistic Revision, Linguistic Errors, Spiritual Communication

1. Introduction to Church Slavonic

The subject of this article may not be new to the field of theolinguistics, practical theology and linguistics. However, the results of the research presented in it are highly relevant. They are based on my personal theological experience as well as an analysis of the practical material and theoretical concepts in the existing literature. I began reading Church Slavonic prayer texts as a young man, and then spent 11 years as a church conductor, which brought me even closer to liturgical literature. I immersed myself in Church Slavonic texts for the next 12 years as a

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deacon and presbyter. I strongly believe that the theoretical and practical principles described here will be the basis for making appropriate adjustments to Church Slavonic texts in all local churches where this language is used in worship. This is important not only from a practical point of view, but also from a theological point of view, as St Ephrem the Syrian observed: “As the body without the spirit is dead, so knowledge without action is idle” [1].

The topic of this article was deliberately chosen. Back in the days of my university studies in International Information, I liked to study systems analysis. It was then that I became convinced of the applicability of the concept of entropy not only to the exact sciences, but also to other fields, to information. For me, entropy acts as a key diagnostic criterion for the orderliness of any system, allowing us to judge its integrity. In the context of a language system, especially when it comes to liturgical literature as an instrument of spiritual communication, the concept of entropy becomes key. The assessment of the entropy level of Church Slavonic liturgical texts allowed me to draw conclusions about the effectiveness of this dialogue and to examine the adequacy of the information perception of the adherents of a particular denomination.

Church Slavonic is the common cultural heritage of all Slavic peoples who have used or use it as their liturgical language. Today, Church Slavonic is used as a liturgical language by several local Orthodox Churches in countries such as Bulgaria, Serbia, Montenegro, North Macedonia, Poland, Russia, Belarus, Ukraine, Moldova (partially), Slovakia and the Czech Republic. The Russian Ortho-dox Church Abroad also actively uses Church Slavonic.

It is significant that during more than a thousand years of the existence of the Church Slavonic language, the liturgical texts have undergone many revisions, both connected with the need to correct errors and caused by the requirements of time. Every language is a living organism that changes over time, it is a natural process. In the case of Church Slavonic, it is important to stress that it never became an instrument of oral communication, but remained a written language: liturgical, scientific, and literary (until a certain time). Nevertheless, it has had a major, if not decisive, influence on all the modern East Slavic languages, especially Ukrainian, Russian, Belorussian, Serbian, and Bulgarian. It has itself undergone many changes due to the influence of national languages of communication, or, to put it in historical terms, ‘prosta mova’ [2]. The term ‘prosta mova’ (in English ‘plain language’) relates to the phenomenon of diglossia in Old Rus, and things were different in Southern Rus and Moscow Rus. It should be understood that ‘prosta mova’ did not correspond 100% to the living language of the 17th century, as there were several dialects, depending on the geographical location of the region of the Old Rus. Moreover, the term itself should not be taken literally, as it derives from the Latin ‘lingua rustica’. The differences between ‘prosta mova’ and dialectal colloquial speech were very clear in South-West Rus. Ivan Uzhevych’s grammar of 1643 contrasts ‘lingua sclavonica’ with ‘lingua sacra sclavonica’. There is also the concept of ‘lingua popularis’, which at that time was the Ukrainian dialect. In Pamvo Berynda’s dictionary of 1627, the language ‘ruska’, which is synonymous with ‘prosta mova’, is contrasted with ‘Volyn’ and ‘Lithuanian’. Thus, ‘prosta mova’ is opposed to both Church

Slavonic and dialectal Ukrainian or Belarusian [3]. In the end, it remained on its own, retaining the status of ‘lingua sacra sclavonica’. Over the centuries, the Church Slavonic language finally established itself as a language of divine communication, a means of prayerful communication, and an instrument of liturgical communication, as it remains today.

It should be noted that the linguistic situation of Old Rus should be defined, in the strict terminological sense, as a situation of Church Slavonic-Rus diglossia. Diglossia, as Ferguson understood it [4], is a way of coexistence of two language systems within one language collective, when the functions of these two systems are in an additional distribution, corresponding to the functions of one language in a normal non-diglossic situation. In this case we are talking about the coexistence of a bookish language system associated with the written tradition and a non-bookish system associated with everyday life. No society within a given language collective uses the bookish language system as a means of spoken communication. This circumstance distinguishes the situation of diglossia from the usual coexistence of a literary language and a dialect.

2. Historical Development and Challenges

The ontology of the Church Slavonic language, combined with its exclusive attachment to the written text rather than spoken communication, has necessitated periodic adjustments throughout its historical development. Today represents one such period, where increasing semantic and stylistic discrepancies between Church Slavonic and contemporary Slavic languages raise the need for a careful textual review and refinement. Rather than advocating for a radical reform or the replacement of Church Slavonic with national languages, this study highlights the importance of enhancing textual clarity while preserving the linguistic and theological integrity of the tradition. Historically, Church Slavonic has undergone multiple revisions to address inconsistencies and improve textual coherence, and the present research contributes to this ongoing scholarly effort. Many scholars and representatives of the Orthodox hierarchy, especially of the Russian Orthodox Church, have loudly proclaimed this at the beginning of the twenty-first century [5].

Discussions on the implementation of national Slavic languages into liturgical practice have been going on since the end of the 19th century [6]. However, the present article is not an attempt to justify the necessity for Slavic Orthodox churches to switch to national languages, but rather to present linguistic arguments and techniques by means of which it is possible and necessary to carry out a modern revision of Church Slavonic texts, making them stylistically correct and semantically sound. The need for this has long been demonstrated by the presence of many errors in the texts: stylistic, semantic, and structural [7]. I will try to point out the most important ones and give illustrative examples, as well as propose my own variant of correcting the linguistic insufficiency of some texts taken as examples.

Despite multiple revisions over the centuries, many Church Slavonic texts continue to contain structural inconsistencies and semantic inaccuracies that can

obscure meaning and hinder correct interpretation. These textual discrepancies highlight the need for a systematic and scholarly approach to textual refinement. However, discussions on this subject have often been marked by strong ideological divisions. Instead of focusing on the linguistic and stylistic aspects of textual errors, debates frequently shift into theological arguments concerning the preservation of tradition. Some voices within clerical and scholarly circles perceive textual revisions as modernist intrusions rather than necessary clarifications [8, 9, 10]. This study aims to provide a neutral, academic analysis of textual inconsistencies, demonstrating that linguistic refinement does not compromise the theological essence of Church Slavonic texts but rather enhances their clarity and accessibility.

3. Objective of the Article

In the case of this article, due to the abundance of theological material, only texts from books such as *Ќкѣѡнѡхъ* (2000), *Канѡникъ* (2009) and *Слѡжѣникъ* (2004) will be analysed. The *Ќкѣѡнѡхъ* (in English *Octoechos*) is a liturgical book containing the texts of altered prayers in eight voices for each day of the week. It was first compiled at the beginning of the VII century. In the VIII century it was edited and completed by St John Damascene. The *Octoechos* printed in Cracow in 1491 is the first Slavonic printed book [11]. The *Канѡникъ* (in English *Orthodox Prayer Book*) is a devotional book for home prayer, containing the Canons and other prayers and services of the day. The *Слѡжѣникъ* (in English *Service Book*) is a liturgical book for the divine service of the priest and the deacon.

My analyses are based on many years of experience reading and studying Church Slavonic liturgical texts. This expertise allows me to identify key stylistic and semantic inconsistencies that contribute to linguistic entropy, which in this study is understood as a measure of word placement disorder and structural inconsistencies within the text. The analysis focuses on errors affecting textual coherence and readability, rather than grammatical or punctuation issues, which remain beyond the scope of this research. The main categories of errors affecting linguistic entropy include: (a) un-successful calques from Greek; (b) omitted fragments or words from Greek; (c) distorted stylistics patterns in Church Slavonic texts; (d) archaic structures that disrupt textual clarity and deviate from established stylistic norms.

Regarding borrowings from Greek, there are several excellent works [12, 13, 14] with detailed descriptions of semantic and phraseological cripples, as well as missing fragments or words from Greek, so we will not dwell on them in detail. Suffice it to give an illustrative example of prayer number 9 of the morning service, in which the word ‘sin’ has been ‘dropped’ due to the inaccuracy of the translation.

Let us compare, for example, two liturgical texts in the ancient Greek and the Church Slavonic languages.

Κύριε ὁ Θεός ἡμῶν, ὁ τὴν διὰ μετανοίας ἀφесιν τοῖς ἀνθρώποις δωρησαμενος, και τύπον ἡμῖν ἐπιγνώσεως ἀμαρτηματων και εξομολογησεως, την του προφήτου Δαυίδ μετάνοιαν, προς συγχώρησιν υποδειξας αὐτός, Δέσποτα, πολλοῖς ημᾶς και μεγαλοῖς περιπεπτωκότας πλημμελήμασιν, ελεησον, κατα το μεγα σου ἔλεος, και κατά το πλήθος των οι-κτιρμών σου, ἐξάλειψον τά ἀνομήματα ημών ὅτι σοί ἡμάρτομεν... [15].

Гдѣи бже нѣша, поклѣнїемъ ѡгтавлѣнїе челоуѣкѡумъ дѣроуѣкѡи, ѥ ко Ѡбразѣ нѣмѣ познѣнїа грѣхѡуѣ ѥ ѥспокѣданїа, прорѡка дѣла поклѣнїе ку прощѣнїю покзѣкѡи, ѣмѣ кѣко, ко мнѡгалъ нѣ ѥ келїкалъ пѣшкѡи ѡгрѣшѣнїа, помнѣнїю по келїцѣнї мѣтѣ тѣоѣи, ѥ по мнѡжестѣу ѡмерѡтѣ тѣоуѣ ѡчїнѣтѣ кеззакѡнїа нѣша [16].

As can be seen from the example, the original translator simply used the Greek semantic construction ἀφесιν τοῖς δωρησαμενος, translating it as поклѣнїемъ ѡгтавлѣнїе челоуѣкѡумъ дѣроуѣкѡи, but the Church Slavonic language is an incongruity, since the verbal noun ѡгтавлѣнїе has a broader connotation. Someone may say that in the further fragment of the text it becomes clear what the text is about. Yet such an argument is completely unfounded. The sacred text of the recited prayer must have semantic impeccability. In this case it is enough to remove the next sentence, and the whole semantic component collapses. The text should sound like поклѣнїемъ ѡгтавлѣнїе грѣхѡуѣ челоуѣкѡумъ дѣроуѣкѡи. Following and repeated word грѣх should not cause any embarrassment to anyone. I write this as a person who has been reciting this prayer for years during the divine service and constantly feels the discomfort associated with this semantic incongruity. As will be shown above, the Church Slavonic texts have many more and far more serious flaws that hinder their adequate perception and fluent reading. The amazing thing is that the text of this prayer has been reprinted for centuries and never corrected. I compared the version of this prayer with the 1602 version of the Service Book, and it turned out to have the same error [17]. This means that this error has been in print for 400 years! The problem today is attachment to the status quo and the relegation of the debate by opponents of reform to the realm of obscurantism. Let us, however, turn to the subject of our analysis and show how ridiculous such arguments are.

The above example of a semantic omission due to an incorrect translation from ancient Greek into Church Slavonic is in fact only the tip of the iceberg, which is very easy to spot when reading the liturgical text for the first time. Unfortunately, there are many such errors, and they remain in liturgical texts for centuries without being corrected. And if the problem of correcting the Ирмологїи was at least somewhat solved in the 17th century [18], the Ѡкѣнїа [19], Аїнїа and Глѣбїенїк still remain open. The Ирмологїи (in English *Irmologion*) is a

liturgical book containing liturgical texts for singing in church. In the Russian Orthodox Church tradition there are two types of Irmologion – liturgical, containing the full verbal texts of the canons, and chanting, including only the songs of the Sunday and feast canons, the Octoechos services of the Seven Days, and other chants. The structure of the Irmologion is subordinated to the system of 8 voices; within each voice the Irmoses are arranged in the order of the nine parts of the canon. The *Μηναία* (in English *Minia*) is a liturgical book containing the propers for fixed dates of the calendar year. It is interesting to note that the title of the book comes from the ancient Greek adjective μηνιαίος ('monthly'), which in turn is derived from the noun μήν (gen. μηνός), 'month'. The literal Greek word Μηναία is a plu-ral adjective of the middle gender. So Μηναία βιβλία in English is 'monthly books'. It turns out that the Greek adjective plural of the middle gender became a feminine noun of the singular gender in Church Slavonic. There are the Monthly Minia, the Festive Minia and the General Minia.

In addition to pure translation errors, we often encounter so-called incorrect syntax, which is often disguised under the 'antiquity' and stylistic 'otherness' of Church Slavic, at least in contrast to Russian or any other modern Slavic language. This, however, is a gross error in the approach to the evaluation of any liturgical Church Slavonic text. The point is that 'antiquity' does not equal 'chaos' and cannot be used to justify the 'normality' of the presence of stylistic entropy. Yes, Church Slavonic texts have their own style, a certain poetic ancient archaicism, but there is an ex-pressive systematicity and beauty to it. It is the departure from this structure and the failure to observe the stylistic and semantic ancient rhythm that is, in my opinion, the manifestation of chaos.

With regard to the classification of such errors, it is necessary to point out the following, the most important from the point of view of the perception of the text: lexical errors related to the mis-understanding of the Greek text; paronymic errors related to lexical calques; syntactic errors related to the confusion of Greek word forms or to the mistranslation of Greek syntactic constructions into Church Slavonic; case errors related to the mistranslation of the nominative, genitive and dative cases; errors of verb forms. In the case of syntax, it is necessary to highlight the main pattern, which is manifested in a high degree of archaicism, which casts a shadow on the adequacy of the perception of Church Slavonic content. The fact of the presence of many errors only aggravates this situation. And yet, in my opinion, the main unsolved problem remains the structural and stylistic disorder of Church Slavonic texts, not their archaicism.

4. Analyses

At the same time, in the case of stylistic structuring of the text, this category is the easiest to correct, does not require complex linguistic efforts, but has an enormous impact on the perception of the Church Slavonic liturgical text. Based on the research results, the presence of an average of 8.57% entropy in the overall structural and stylistic system of the analysed texts is evident, or 0.370 in bit equivalents. This measure reflects word placement inconsistencies and structural irregularities in Church Slavonic texts. While additional linguistic factors such as

grammatical and punctuation errors could potentially increase the entropy level, they are beyond the scope of this study and re-main an area for future research.

For now, I would like to point out that this result is an average indicator that reflects the general level of the problem. To calculate it, I used Claude Shannon's formula, widely used in information theory:

$$H = -\sum_{i=1}^n p(x_i) \log_2(p(x_i)),$$

where $p(x_i)$ represents the probability of a misplaced word within a given sentence. This study focuses exclusively on word placement inconsistencies and structural irregularities, without taking into account grammatical or punctuation-related errors. The choice of this method is motivated by the need to establish a clear, quantifiable measure of stylistic disorder while ensuring comparability across different textual samples. Furthermore, I opted to present entropy results as percentages rather than in bit values, as percentage-based representation provides a more intuitive way to interpret the degree of disorder within a text.

Let us take an average sentence as an example to illustrate the approach described and to familiarise ourselves with the logic of the methodology used. One of the sentences analysed consists of 19 words, 3 of which are in the wrong place, thus distorting the meaning of the sentence. Thus, in the case of this sentence, the probability that the word is in the right place is 16/19 and the probability that the word is in the wrong place is 3/19. Substituting these probabilities into the Shannon entropy formula gives the following result:

$$\begin{aligned} H &= -\left(\frac{16}{19} \log_2\left(\frac{16}{19}\right) + \frac{3}{19} \log_2\left(\frac{3}{19}\right)\right) \\ \text{or } H &\approx -(0.873(-0.298) + 0.158(-4.247)) \\ \text{or } H &\approx 0.184 + 0.670 \text{ or } H \approx 0.854 \end{aligned}$$

So, the entropy of this set is about 0.854 bits. To convert this result into a percentage, we must take the maximum entropy value as 1 (since the logarithm on base 2 is used) and calculate it as follows:

$$\frac{\text{percent entropy}}{\text{maximum entropy}} 100\%$$

In this case, the maximum entropy for a given sentence is equal to the base 2 logarithm of the number of words in the sentence. We have 19 words, so the maximum entropy according to the formula $\log_2(19)$ is approximately 4.247 bits. We calculate the percentage of entropy on this basis from the above formula:

$$\frac{0.854}{4.247} 100\% \approx 20.1\%$$

This means that the entropy of a sentence consisting of 19 words, 3 of which are in the wrong place and distort its content, is approximately 20.1% according

to the methodology used. This is the approach used in the case of the whole set of texts analysed, from which the final figure of 8.57% is derived.

It should be noted that when we are talking about a complete distortion of meaning, and not just confusion due to structural and stylistic disorder, the usual formula for calculating entropy may not be sufficient. In the case of bitwise algorithms from information theory, which only consider the probabilities of different outcomes, we need to consider the meaning of the distorted words themselves. One such approach or solution to the problem at hand might be to consider the importance or significance of the garbled words in each sentence. We can give weight to the distorted words depending on the context and the distortion of the meaning of the sentence. Remarks on this aspect of my analysis are presented at the end of the paper.

Having explained the algorithm used to calculate the entropy of the analysed Church Slavonic texts, let us proceed to the description of selected examples of structural and stylistic disorder, the correction of which cannot be delayed from the point of view of the adequacy of the perception of the text by clergymen and other ecclesiastical or secular persons.

As a first liturgical resource, I suggest that we familiarise ourselves with the fragments of the two-part Octoechos published in two volumes. Since there is a great deal of linguistic material in these two volumes, we will limit ourselves to the canons in praise of the Virgin Mary at the Small Compline of the first four voices, of which there are 28 in total (7 in each voice). The Small Compline or After-Supper Church Service (in Church Slavonic – *покечїиѣ*) is in the Byzantine rite, the daily ritual of the divine service of the daily circle, performed in the temple or in cells. It is not possible to analyse all the canons of all the voices because it would take too much time and would not be necessary.

So, out of more than seven hundred pages of liturgical texts, I have analysed all the canons in praise of the Virgin Mary at the Small Compline. There are 28 canons in the first volume of the Octoechos [18]. Each of them consists of 8 canons with 4 troparia. These are the main object of my analysis. Each troparion or verse consists of an average of 21 words. There is usually one complete compound or complex sentence, and rarely two. In total, we are dealing with about 900 sentences – troparia – which are contained in 28 canons. Structural and stylistic errors are noted in the sentences on pages 28, 29, 32, 104, 113 (in five troparia), 123, 124 (in two troparia), 125, 141, 142, 202, 231 (in two troparia), 246, 247 (in four troparia), 248, 307 (in two troparia), 308 (in two troparia), 327, 328 (in three troparia), 329 (in two troparia), 352, 378, 381, 401 (in two troparia), 418, 438 (in two troparia), 440, 459 (in two troparia), 461-462 (one sentence on two pages), 478, 480 (in two troparia), 507, 551, 595 (in two troparia), 597, 615, 617, 635 and 638 (in two troparia). This gives us 68 garbled sentences out of the 896 available, or about 7.14%. Moreover, we are only talking about the divine canons of Small Compline. In the case of other liturgical material, this proportion is about the same, at around 8%.

At this point it is worth making the essential observation that there are several subgroups of errors that introduce different levels of chaos into each individual text. These errors can be divided into three subgroups: a. introducing

poetic-rhythmic confusion, b. causing semantic confusion, and c. causing extreme structural, stylistic and semantic confusion.

5. Most Common Errors and Their Examples

I propose to look at the most expressive examples of each of the three sub-groups listed to demonstrate the influence of structural and stylistic inconsistency on the distortion of meaning and the transmission of information. As an example of the first sub-group, I propose the troparion of the 1st voice of the 9th song of the canon on Tuesday at the Small Compline:

Вкѣтъ мнѣ лежѣиѣ, прѣѣтал, кѣ лѣностѣ тѣмѣ, нѣнѣ козѣѣѣ,
ѡлаѣплѣѣѣ мнѣ пѣмыѣ стѣрѣѣѣ рѣшѣѣѣ, ѣ мѣрѣ глѣбѣѣѣ
кѣнепѣрѣѣѣ, прѣенѣ ѡдѣѣѣѣ кѣ дѣшѣ мѣѣѣ, ѣлѣнѣѣ тѣѣ [19, p.104].

The very first glance at the present fragment of the canon is very disconcerting because of the presence of the deuterio-particle *лежѣиѣ* in the third place, which introduces a kind of chaos that has nothing to do with the archaic. This is directly related to the proper noun *прѣѣтал*, which further breaks the ideological context and introduces poetic-rhythmic confusion. The more deeply one reads the text, the greater the confusion. The structural and stylistic normalisation of the present sentence could remedy the situation:

Вкѣтъ мнѣ, прѣѣтал, лежѣиѣ кѣ лѣностѣ тѣмѣ, нѣнѣ козѣѣѣ,
ѡлаѣплѣѣѣ мнѣ пѣмыѣ стѣрѣѣѣ рѣшѣѣѣ ѣ мѣрѣ глѣбѣѣѣ
ѡдѣѣѣѣ кѣ дѣшѣ мѣѣѣ, прѣенѣ ѣлѣнѣѣ тѣѣ, кѣнепѣрѣѣѣ.

The second option for remediation:

Вкѣтъ мнѣ, прѣѣтал, нѣнѣ козѣѣѣ, лежѣиѣ кѣ лѣностѣ тѣмѣ,
ѡлаѣплѣѣѣ мнѣ пѣмыѣ стѣрѣѣѣ рѣшѣѣѣ ѣ мѣрѣ глѣбѣѣѣ
ѡдѣѣѣѣ кѣ дѣшѣ мѣѣѣ, прѣенѣ ѣлѣнѣѣ тѣѣ, кѣнепѣрѣѣѣ.

And the third:

Вкѣтъ мнѣ, прѣѣтал, нѣнѣ козѣѣѣ, лежѣиѣ кѣ лѣностѣ тѣмѣ,
ѡлаѣплѣѣѣ мнѣ пѣмыѣ стѣрѣѣѣ рѣшѣѣѣ ѣ мѣрѣ глѣбѣѣѣ ѡдѣѣѣѣ кѣ дѣшѣ
мѣѣѣ, кѣнепѣрѣѣѣ, прѣенѣ ѣлѣнѣѣ тѣѣ.

It should be noted that there may be several variants, all of which may be equally correct. It should be noted, however, that we are not talking about a

linguistic ‘modernisation’ of the Church Slavonic text in accordance with modern Russian stylistics. In fact, the archaic and Old Slavonic rhythmicity is fully preserved, while the meaning and content of the troparion are fully revealed. In addition, the rhythmic reading has been completely corrected.

As an example of the second subgroup, I offer the troparion of the 2nd voice, 3rd song of the canon on Monday at the Small Compline:

Начало ѿбраженїа є҃а к҃и҃тъ к҃ъ челоуѣкѣмъ, ѣ҃нно прелѣченїе: с҃ѣла же
к҃ѣа прикелѣ паки є҃а к҃ъ нѣмъ [19, p. 247].

In this example, the semantic confusion is evident immediately after the noun *є҃а*, because the verb *к҃и҃тъ* that follows it is in no way related to the noun with the preposition *к҃ъ челоуѣкѣмъ*. It must be the *начало ѿбраженїа є҃а к҃ъ челоуѣкѣмъ к҃и҃тъ*, otherwise the verb *к҃и҃тъ*, which has entered the sentence, completely violates the semantic logic of what has been said. This is how the sentence should sound after the correction:

Начало ѿбраженїа є҃а к҃ъ челоуѣкѣмъ к҃и҃тъ ѣ҃нно прелѣченїе: с҃ѣла
же к҃ѣа прикелѣ паки є҃а к҃ъ нѣмъ.

It’s just one word, but what a difference it makes.

Finally, the third example, with an even more profound structural and stylistic irrelevance, is illustrated by the following example:

Ѡанѣиѡмагѡа лѡтѣ прегрѣшенїи кс҃иѡ мїра, ѡ потопленїагѡ, родинѣ
є҃и прѣчѣла є҃а ѡ г҃а кр҃хъ нѣмъ, ѡ ѡкормїтелеа хр҃та, ко с҃и҃нѣельномѣ
преч҃танициѣ нѣмъ направлѣюца вѣрѡ [19, p. 246].

Here it is not clear what or who is being ‘worried’: the ‘world’, ‘sin’ or ‘God’? It should be remembered that the canons of the Small Compline, as well as other prayers, are read rhythmically in liturgical practice. This does not, of course, mean rapid. But the rhythm corresponds to a certain prayerful mood, which is disturbed if the reader and listener do it attentively, wishing to understand the meaning of what is being said. In the present example, to grasp the meaning, one must pause for a long time and try to understand what is being said. The first perception of the information leads to the idea of some kind of ‘God who has been sunk by the sins of the whole world’. A rough translation of this text into English should give the following result: “Out of the whole world, greatly agitated and drowned by sins, you have given birth to the God and Lord of us all, O most pure Mother of God, – Christ the Nurturer, who rightly leads us into the harbour of salvation”. We are talking about ‘the God of the whole world’, the world that is

‘drowning in sins’. That is the message. Let us now see what stylistic corrections can be made to this crippled text to deal with it.

ВѢДИЮЩАГО АБОТЦА И ПОТОПЛЕМАГО ПРЕРУШЕНІИ, КРЕГѠ МІРА, ПРЕЧТАА, РОДНАА
ЄИ КІА И ГЛА ВСКЪ НАСЪ, ѠКОРАМІТЕЛА ХРІСТА, КО СІИТЕЛЬНОМУ ПРИСТАНИЩУ НАСЪ КЪРМУ
НАПРАВЛЯЮЩА.

Apart from the elimination of the superfluous conjunction и, no other changes have been made apart from stylistic corrections. Nevertheless, the text has acquired a completely different semantic colouring. The Old Slavic archaism and peculiar rhythm are also fully preserved.

An interesting material within the framework of the chosen analysis is the canon of The Order of Preparation for Holy Communion included in the *ВанѠникъ*. The point is that this Canon is (or should be) the most read of all texts, and this applies to both clergy and laity. In Orthodox tradition, its reading should be accompanied by every believer who wishes to receive the communion of Christ’s mysteries. Despite this ‘popularity’ among the faithful, it contains a great deal of structural and stylistic chaos, represented mainly in the form of subgroups a. and b., and in one place by subgroup c. Let us consider the most striking examples.

The first troparion of the first Irmos of the canon provides example of the violation of the semantic structure of the phrase:

ХЛѢБЪ ЖИКОТѦ ВЪЧНЮЩАГО ДА ВЪДЕТЪ МНѦ ТЪЛО ТВОЕ СЪОБЕ, КЛГОДЪРОКНЕ
ГДН, И ЧТНАА КРОКА, И НЕДЪГЪ МНОГОКРАЗНЫХЪ ИЩКЛЕНІЕ [20].

Here we can clearly see how the semantic construction expressing the mystical result of receiving the Eucharist, *хлѣбъ жикотѦ вѣчнѡщѧго и недѧгъ многокразныхъ ищкленіе*, is broken in two, causing semantic confusion. The correct version should be as follows:

ХЛѢБЪ ЖИКОТѦ ВЪЧНЮЩАГО И НЕДЪГЪ МНОГОКРАЗНЫХЪ ИЩКЛЕНІЕ ДА
ВЪДЕТЪ МНѦ ТЪЛО ТВОЕ СЪОБЕ И ЧТНАА КРОКА, КЛГОДЪРОКНЕ ГДН.

Or in another version:

ХЛѢБЪ ЖИКОТѦ ВЪЧНЮЩАГО И НЕДЪГЪ МНОГОКРАЗНЫХЪ ИЩКЛЕНІЕ,
КЛГОДЪРОКНЕ ГДН, ДА ВЪДЕТЪ МНѦ ТЪЛО ТВОЕ СЪОБЕ И ЧТНАА КРОКА.

Both the first and second versions are correct. The present printed version is not.
The next example:

во ѡстаκλένїе да бѣдетъ мѣ прегрѣшенїи прѣѣтѡе чѣло твоѡ ѣ бжѣтвеннаа крѡвь,
дѣ же сѣгѡ ѡκκїенїе, ѣ кѣ жїзнь вѣчнѡю, члѣкколюкче, ѣ стравтѣи ѣ κορκѣи
ѡчѣждѣнїе [20, p. 563].

Here the prepositional-adjective construction *во ѡстаκλένїе прегрѣшенїи* has been broken by another verbal construction with the main semantic verb *κѣтѣ* in the future tense. The same applies to the construction *ѣ кѣ жїзнь вѣчнѡю*. Although this stylistic device is quite common in Church Slavonic texts, here it expressively destroys the integrity of the sentence. The structural and stylistic entropy of this sentence is as high as 20.63%. The correction of this troparion gives the following result:

во ѡстаκλέнїе прегрѣшенїи ѣ кѣ жїзнь вѣчнѡю да бѣдетъ мѣ прѣѣтѡе
чѣло твоѡ ѣ бжѣтвеннаа крѡвь, члѣкколюкче, дѣ же сѣгѡ ѡκκїенїе ѣ
стравтѣи ѣ κορκѣи ѡчѣждѣнїе.

When reconstructing the sentence, we put the two broken prepositional phrase constructions back together and build a logical chain of events in the correct order. Thanks to this, the following constructions *дѣ же сѣгѡ ѡκκїенїе ѣ стравтѣи ѣ κορκѣи ѡчѣждѣнїе* were also freed from the semantic burden associated with incorrect structural stylistics, but at the same time retained the shadow of their antiquity.

The next example is an unusual case in which stylistic errors and the translator's calque have led to the complete loss of the sentence's meaning. Here, the third stylistic subgroup of errors is combined with complete linguistic inadequacy, and if at the beginning of the sentence its meaning starts to build up into some logical sequence, by the end it is a complete nonsense. Let's look at this sentence:

Исѡчїнїкѣ κλγїхѣ, прїчлїенїе, хрїтѣ, κεζεμερѣтнїхѣ тѡѡхѣ нлїнѣ
тлїнїетѣ, да бѣдетъ мѣ κѣтѣ, ѣ жївѡтѣ, ѣ κεζεστравтѣе, ѣ кѣ прεπѣκλнїю
же ѣ ѡμνοжѣнїю доκροκѣтєлї бжѣтвеннѣнїшїа χολατγїεтвенно, ѣлїне
κлѣже, ѣκκѡ да κλκκѡ тѣ [20, p. 566].

Here is its old Greek equivalent:

Πηγὴ ἀγαθῶν ἢ μετάληψις, Χριστέ, τῶν ἀθανάτων σου νῦν
Μυστηρίων· γεννηθήτω μοι φῶς καὶ ζωὴ καὶ ἀπάθεια, καὶ πρὸς ἀρετῆς
θειοτέρας προκοπὴν καὶ ἐπίδοσιν πρόξενος, μόνε Ἀγαθέ, ὅπως
δοξάζω σε [21].

We see how literally and clumsily the translator tried to convey the Greek archaic by transforming it into the Church Slavonic version. And, unfortunately, how badly he succeeded. We must admit that such and similar text fragments, in the literal sense of the word, turn a living prayer into a reading 'spell', where meaning gives way to mechanical reading, and the reader takes the form of an 'expert' of hidden knowledge. Therefore, once again, without any in-depth analysis, similar or equivalent fragments of Church Slavonic texts should have undergone appropriate revision long ago. I hope that this article will serve as an appropriate stimulus to this process. So, after some minor structural changes, we have the following text:

Исѣочникъ кѣгнѣхъ, хрѣтѣ, причащенїе твоѣхъ веземѣртныхъ нѣнѣ
тѣннстѣхъ, да кѣдетъ мнѣ ходѣтѣйствѣнно свѣтъ, живѣтъ ѡ везетрѣтїе,
къ пресвѣлнїю же ѡ ѡмноженїю жѣтвеннѣишѣа добродѣтели, ѣднѣ кѣже,
ѣкѡ да слѣкѣю тѣ.

Or in another way:

Исѣочникъ кѣгнѣхъ, хрѣтѣ, причащенїе нѣнѣ твоѣхъ веземѣртныхъ
тѣннстѣхъ, ходѣтѣйствѣнно да кѣдетъ мнѣ свѣтъ, живѣтъ ѡ везетрѣтїе,
къ пресвѣлнїю же ѡ ѡмноженїю жѣтвеннѣишѣа добродѣтели, ѣднѣ кѣже,
ѣкѡ да слѣкѣю тѣ.

An identical situation can be observed in the case of the 3rd prayer after Communion, which belongs to Symeon the Metaphrast and is found in the *Влѣжбник*. The specificity of this prayer in Greek is that it is written in verse. The translation of the last sentence is particularly confusing. Here is how the Greek original looks like:

Σὺ γὰρ ὑπάρχεις ἁγιασμὸς καὶ μόνος
ἡμῶν, ἀγαθέ, τῶν ψυχῶν καὶ λαμπρότης·
καὶ σοὶ προπόντως, ὡς Θεῶ καὶ Δεσπότη,
δόξαν ἅπαντες πέμπομεν καθ' ἡμέραν [21, p. 519].

And here's the Church Slavic version:

Тѣ ко ѣднѣ ѣнѣ ѡ ѡкѣщенїе нѣшнѣхъ, кѣже, дѣшъ ѡ свѣтлостѣ, н тѣтѣ
лѣпноподобнѣю, ѣкѡ кѣѣ ѡ кѣцѣ, слѣкѣ кѣнѣ козѣмѣлѣмѣ на вѣлѣкѣ дѣнѣ [22].

It is difficult to blame the translator for not preserving the form of the verses and the sublime poetry of the Greek lines. Nevertheless, there is already a complete disorganisation in this context, characterised by a jumble of elements

and a lack of clear structure. To support the views expressed, I would like to give an example from my own experience, where a hieromonk with more than twenty years of experience stumbled twice while reading aloud the prayers of thanksgiving, illustrating the nature of the text and the verbal confusion present in it. Only an indifferent eye and language will not stumble in this place or pause. The need to edit the quoted fragment is self-evident. The text, after structural and stylistic normalisation, re-gains its lost meaning:

Тѣ ко ѣсѣ ѣдѣнѣ, кѣже, ѡсѣлѣнїе ѣ свѣтлостѣ дѣшѣ нѣшнѣхѣ, ѣ текѣ
лѣпоподѣкнѣ, ѣкѣ кѣ ѣ кѣцѣ, лѣкѣ кѣ козѣлѣмѣ на кѣлѣкѣ дѣнѣ.

Thus, the original entropy of this sentence, at the level of 19.46%, is reduced by minor structural and stylistic editing to 0. Of course, this is only one textual level. When grammatical, punctuation and other translation inaccuracies are considered, a higher level of entropy is revealed, which emphasises the need for a deeper study and editing of liturgical Church Slavonic texts. The calculation of such entropy requires the introduction of new parameters, such as the importance of words. In this case, we can use the already extended formula that multiplies the probability of each word by its weight before calculating the entropy:

$$H(X) = -\sum_{i=1}^n w_i p_i \log_2(p_i),$$

where w_i is the importance (specific weight) and p is the probability of occurrence of each word. However, there are difficulties in applying such an approach, since many algorithms based on formulas from information theory usually assume a strict binary principle that does not consider the different levels and complexities of translation errors. It is necessary to consider each sentence individually, considering the meaning of each word and its contribution to the overall context of the text.

In this context, the last example, which is by no means isolated, illustrates the depth of the problem described. In some cases, errors can radically alter the original meaning of the liturgical text. One of the most striking examples of such a distortion is the 8th song of the 1st voice of the canon in praise of the Virgin Mary at the Small Compline, which contains such a troparion:

Воплощѣтѣлѣ кезѣлѣтнѣнѣ ѣзѣ текѣ кѣолѣкнѣнѣ: ѣгѣже молѣ прѣѣтѣлѣ,
стѣлѣтнѣ плѣтнѣ тѣкоелѣ ѣмерѣткѣтнѣ, ѣ ѣжнѣкѣтнѣ молѣ дѣшѣ ѣмерѣкѣлѣнѣнѣ
гѣкѣхѣ [23] «Direct translation: The incorporeal One, to whom you pray, is splendidly incarnate, Pure One, that He may put to death the lusts of *your* [false pronoun instead of *my*] flesh and revive my soul which has died through sins».

This is not just a misprint, not just a confused letter, as is often the case in the texts analysed. It is a whole pronoun that distorts the original semantic address. In the phrase *εΓΓΡΑΪΤΗ ΠΛΟΤΗ ΤΒΟΕΛ̅ ΟΥ̅ ΜΕΡΤΚΗΤΗ* the pronoun *ΤΒΟΕΛ̅* is mistakenly present and not *ΜΟΕΛ̅*. It turns out that instead of ‘our’ passions, the text speaks of ‘her’ passions, i.e. the ‘passions of the Virgin’. What an extreme misunderstanding! It is interesting that all this could be justified by an incorrect edition of the volume analysed, but no. I checked this fragment of text in another edition from 1981 [24], and there is the same error. It is difficult to say how long this error was reprinted and in which century. Since the first Slavonic *Octoechos* of 1491 does not yet contain canons of the Mother of God at Small Compline, and the text of the 1692 *Octoechos* of the Trinity-Sergius Lavra does not allow for this error [25]. I can assume that the error was made in later editions, beginning around the 18th century.

6. Conclusions

Unfortunately, this is not the only example. Typographical errors that change the primary message of a text are quite common. What is also interesting in this case is that the usual formula for calculating entropy, based on bit algorithms in information theory, does not fully reflect the phenomenon I am interested in. It is a complete distortion of meaning, not just confusion. As has been said, one such approach or solution to the problem might be to consider the meaning or significance of the distorted words in each sentence, but that is the subject of the next study.

This study contributes to the ongoing academic discussion on the refinement of Church Slavonic liturgical texts by providing a structured analysis of linguistic entropy and textual inconsistencies. While the subject of textual revisions has been explored in the fields of theolinguistics and practical theology, this research introduces a quantifiable approach to assessing stylistic and semantic disorder. The findings demonstrate that structural inconsistencies in Church Slavonic texts persist despite multiple historical revisions, highlighting the necessity for further scholarly evaluation. Addressing these inconsistencies can enhance the clarity and accessibility of liturgical texts while preserving their theological and historical integrity. Future research may expand this analysis by incorporating additional linguistic parameters such as grammatical structure and syntactic patterns, refining the methodology for evaluating textual coherence in sacred texts.

Changes and revisions of Church Slavonic texts over the centuries testify to the living character of this language and its important influence on the development of East Slavic national languages. However, despite the numerous revisions, the texts still contain errors which distort the meaning and make it difficult to understand them correctly. It is important to take this into account and to work actively to correct them. This will help to make the liturgical texts more understandable and meaningful for the faithful, and to preserve the linguistic heritage for future generations.

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