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## LANGUAGE IDENTIFICATION AND DATING OF THE GREAT PRES LAV INSCRIPTION BASED ON LETTER FREQUENCY

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**Abstract:** *The Great inscription from Preslav has been cut into the granite column, which has been found during excavations in the city of Preslav.*

*It is considered that it contains words of military nature, and numbers written with Greek letters, and is looked at as a part of inscriptions from northeast Bulgaria, called military inventory inscriptions. In modern science dominates the view that these inscriptions have been left from the 'early Bulgarians', settled in Dobrudzha that went to the south cost of Danube with the ruling dynasty of Isperih.*

*Through comparison between the letter (sound) frequencies in the text in the Great inscription from Preslav with the frequencies of the letters of the names (personal - of rulers, clans and calendar names) in the Nominalia of the Bulgarian rulers, we can deduct, that it is very likely that the language of the Big inscription from Preslav is different from the language of the people ruled by Isperih. This point is towards the unbiased search for landmarks for attribution and dating of the Preslav inscription in broader chronological terms. Additional considerations give us the basis for a hypothesis, that the Great Preslav Inscription is an artifact created during the XV century.*

**Keywords:** *inscription from Preslav, frequencies of the letters, dating*

**ACM Classification Keywords:** *I.6 Simulation and Modeling, I.6.3 Applications*

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### 1. Introduction

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The Great inscription from Preslav has been cut into a granite column with 2 m height and diameter of 0.39 m, which has been found during the excavations in the city of Preslav; it is kept in the Preslav museum under the inv. number 3212. It is considered that it contains words in military nature, and numbers written with Greek letters (Figure 1 and Figure 2), and is look at as a part of the inscriptions from northeast Bulgaria, called military inventory inscriptions. In modern science dominates the view that these inscriptions have been left from the 'early Bulgarians', settled in Dobrudza that went through the Danube with the ruling dynasty of Isperih.

This kind of origin has been attributed to different inscriptions, found mainly in Dobrudza and lands near it.

One of them is the so called 'archaic inscription' in the "Great Stone Cross", which was considered to be written recently after the acceptance of Christianity during the age of Boris I, in Cyrillic, but in the language of the 'early Bulgarians', which was different than the Slavic language [Dobrev & Dobreva, 2001, 132-139]. However, further careful analysis shows that this inscription is in Wallachian and its most likely dating is XVII century [Tabov & Todorov, 2006].

This example shows us that the inscriptions, connected with the 'early Bulgarians', must be looked at critically, without biases, without preliminary opinions, according to which they are a part of the historic heritage of the 'glorious' Bulgarian past from the period of the 'dark ages' in the European history.

Here we will present the thesis, that the language of the Great inscription from Preslav is different from the language of the 'people of Ispereh', and we will look for its most likely dating from this point of view.

## 2. Text and translation of the inscription from Preslav

The Great inscription from Preslav has been published for the first time from I. Venedikov [Venedikov, 1946] and has been analyzed by number of researchers (amongst them must be mentioned V. Beshevliev [Beshevliev, 1981]), and has been looked at as description of weapons (armor and helmets).

ЗНТКШННТЗНРГ  
 ШУВШУЛЄХШУМ  
 СХНКУПЕ:УНЕ:ТШ  
 УЛСХН:ФМ:ЕСТРШ  
 ГННКУПЕ.УКЗ:ТШ  
 УЛСХН:ООНД:ТШУРТ  
 ШУНАПНЛЕЗШПАН  
 ЕСТРУГННКУПЕ:К:  
 ТШУЛСХН:М:АЛХАСН  
 КУПЕ:А:ХЛШУВРН:А:

Figure 1. The sketch of the text from the Great inscription from Preslav [Minkova & Ivanov, 2010]

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According to [Dobrev & Dobрева, 2001, 88-96] the inscription in Figure 1 - can be sorted as shown in Figure 2 and be translated as below:

"On the fortified camp ichiguru boila (there are): leather armor 455, helmets 540, knitted armor 427, helmets 854; on the meeting point the zhopan (has): knitted armor 20, helmets 40, armor from rings 1, siege tower 1."

The authors confirm the opinion of Zh. Deni, that the language of the inscription all in all is from Turkic type, and there east Iranian words are predominant [Dobrev & Dobрева, 2001, p.96].

Summing the results from the efforts from the numerous researchers, Minkova and Ivanov [Minkova & Ivanov, 2010] have come to the conclusion, that "the inscription obviously stays unclear".

**ЖИТКОИ ИЧИРГ  
У БУЛЕ ХУМ  
ШИ КЮПЕ: УНЕ: ТУ  
ЛШИ: ФМ: ЕСТРО  
ГИН КЮПЕ: УКЗ: ТУ  
ЛШИ: &ND: ТУРТ  
УНА ПИЛЕ ЖОПАН  
ЕСТРЮГИН КЮПЕ: К:  
ТУЛШИ: М: АЛХАСИ  
КЮПЕ: А: ХЛУБРИН: А:**

**Figure 2.** Transliteration of the text of the Great inscription from Preslav with Cyrillic letters according to [Dobrev & Dobрева, 2001, 89]

We are going to defend the thesis, that the language from the Great inscription from Preslav is different from the language of the "people of Isparih"; to do this we will compare the phonetics of these two languages through the

comparison of letter (sound) frequencies.

The method of comparison of the languages from the inscription and Isperih used below partly resembles methods used for determination of the authorship of texts. Methods like these are products of stylometry - the science that treats the task of determination, validation and rejection of the authorship of a certain text.

At first sight it seems that the most natural approach for assessment of authorship differences is the determination of external elements of the style of the given author, mainly his favorite or preferred words or phrases, terms etc. This type of subjective and attributive approach is used to this day. However, the selection of such elements is subjective, and can easily lead to the wrong conclusions, in examples such as deliberate imitation, when outer features of the author have been chosen. Further more in most cases there are missing words and phrases that can be clearly marked as the "author's own". Therefore, it seems that the most fruitful way of exploration of the issues of the authorship of texts is through the search for subconscious features of the language of the author; and they are on the other hand can be detected via suitable formal-quantitative methods [Hmelev, 2014].

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### 3. Statistical methods for the determination of the authorship of a text

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While using statistical research with stylometric<sup>1</sup> goals it's assumed that the conclusions of such research can **point or refute authorship only with a certain probability, not complete certainty**; in order to determine the level of probability of the conclusions there is further analysis needed [Buckland, 1999].

One of the pioneers of launching the statistical methods is N. Morozov, who in 1915 suggested [Morozov, 1915] for the statistical regularities of the distribution of specific function words to be researched. The specific parameters of such research (for example, the frequency of usage of the preposition "v") were subject to critics from A. Markov [Markov, 1916], including the opinion, that in a big volume of text excerpts, all the statistical results (for all authors) will "fluctuate around a middle value, subject to the common laws of the language".

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### 4. Percentage of function words as author's invariant

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The Morozov's proposals have found interesting and important development in the research of V.I. Markova-Fomenko and T.G. Fomenko [Fomenko & Fomenko, 1983], made by A.T. Fomenko's initiative and based upon his specific ideas. They deserve special attention from the view point of our goals.

Based upon A.T. Fomenko's proposal Morozov's idea and Markov's opinion were used for experimental research by V.I. Markova-Fomenko and T.G. Fomenko. For an extensive number of Russian authors they followed the behavior of the following features: 1) the length of the sentences, 2) the length of the words, 3) the frequency of

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<sup>1</sup> "**Stylometry** is the application of the study of linguistic style, usually to written language, but it has successfully been applied to music and to fine-art paintings as well. Stylometry is often used to attribute authorship to anonymous or disputed documents. It has legal as well as academic and literary applications, ranging from the question of the authorship of Shakespeare's works to forensic linguistics". From Wikipedia, the free encyclopedia.

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usage of function words, 4) the frequency of adjectives, 5) the frequency of nouns, 6) the frequency of verbs 7) the frequency of the preposition “v”, 8) the frequency of the particle “ne” (not); the conclusion of this research is, that except the feature 3) all of the above features are not stabilized with the increase of the volume of excerpts, and their values vary in relatively broad limits, therefore the values for a certain author stay comparable (close) to the values of other authors ([Fomenko & Fomenko, 1983; Fomenko, 1980; Postnikov & Fomenko, 1980; Postnikov & Fomenko, 1982]).

The value 3), or namely the percentage of function words in a text, has been named author's invariant by Fomenko, because this value is constant (with high approximation) in the works of a particular author and, usually, is substantially different for each author. This invariant can be used for the attribution of unknown works and for the detection of plagiarism, however to be used with caution, as wrong deductions are possible, and authors with very similar results for this value can be found (for example Leonov and Fadeev).

Therefore, the value 3) – the frequency of the usage of function words – can be used for the determination of the authorship of a text; we should however clarify – that only within the Russian language. Whether this method can be used for such purposes in other languages it must be researched individually.

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### 5. The problem of the authorship of “And Quiet Flows the Don” (“Tikhiy Don”)

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In 1984 there was a book published from several Norwegian and Swedish scholars [Kjetsaa et al, 1984], on the matter of one of the most acute literary questions of the 20<sup>th</sup> century, bearing heavy political load; the suspicion of the authorship of one of the brightest works of the Russian literature – the novel “And Quiet Flows the Don”. The book [Kjetsaa et al, 1984] contains studies that confirm the authorship of M. Sholokov and refute the attempts to point a different author of the beginning part of “And Quiet Flows the Don”. The authors explore the distributions of word classes, the usage of combination of grammar classes, the length of sentences, the length of words and others. This way based on many features they confirm the authorship of Sholokhov [Hmelev, 2014].

The approach in the studies [Fomenko & Fomenko, 1983] is substantially different than the approach in the book [Kjetsaa et al, 1984]. The role of the “author's characteristic” is assigned to the above described “feature 3)”: the percentage of all function words (prepositions, unions and particles) in a coherent fragment of 16 thousand words.

This percentage (“author's invariant”) is different for each individual author, and its values are between 15% to 30% (here we are looking specifically at Russian authors and works from the Russian literature). This has given the opportunity of the authors of [Fomenko & Fomenko, 1983] to acquire a serious argument for plagiarism from Sholokhov's side, as the author's invariant (the value of the “feature 3)”) for the first parts of “And Quiet Flows the Don” (books I and II and the beginning of book III), is 19,55 ([Fomenko & Fomenko, 1996, p. 805]), which is significantly different from the author's invariant in all of the other Sholokhov's works, including the rest of “And Quiet Flows the Don”, that varies from 22,46 to 24,37 [Fomenko & Fomenko, 1996, p. 805]. This way the study [Fomenko & Fomenko, 1983] justifies the conclusion, that Sholokhov has used an additional source of information for the first parts of the epic.

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A further question is addressed in [Fomenko & Fomenko, 1996]: whether this «additional source of information» could be a manuscript of another author from the first half of the 20<sup>th</sup> century – F. Kryukov. From the stand point of our goals it is an important question, as the volume of Kryukov's works available for analysis was relatively low.

Their author's invariant is 21, 11 [Fomenko & Fomenko, 1996, p. 814] and is different from the author's invariant of the first two books of "And Quiet Flows the Don", however, not as much as the author's invariant of the second part of "And Quiet Flows the Don". The conclusion of [Fomenko & Fomenko, 1996, p. 815] is "M. Sholokhov's invariant is much further from the first two books of the novel, than F. Kryukov", as the authors note, there is a reason for the presumption that Kryukov might be the author, however in order for this to be proven more works need to be analyzed.

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## 6. The Letter Frequencies in Old Bulgarian texts

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Basic quantitative characteristics of the letter frequencies in Old Bulgarian texts from different editing's were published for the first time in [Dobrev, 1999]. In this publication they were used for comparison and grouping (through cluster analysis) of manuscripts, that were used for identification and classification of the manuscripts to different literary schools (or traditions) in the past.

One of the goals of this research is to determine the minimum volume of a text excerpt needed for consistent results of the frequency of the usage of letters.

The variations of letter frequencies are different for different letters; in addition they depend on the "volume" of the excerpts (fragments of text, used for the calculation). In [Dobrev, 1999] they are calculated from excerpts of 1 kiloliter (i.e. 1000 letters) – the preferred amount of letters in many of today's philological studies [Dobrev, 1999, 57]. Some of Dobrev's acquired results for medieval oldslavic manuscripts are presented in Table 1 – on the right hand side for Bulgarian manuscripts editing and Russian on the left hand side. In Table 2 we have the data from all the manuscripts from Dobrev's research – Bulgarian, Russian and Serbian editing.

The letters in these tables are sorted according to the size of the standard deviation: the stronger the frequency of a certain letter varies, the higher it is in the table. For example Table 1 – on the left hand side starts with the letter "И", which has an average frequency of 5.44 and standard deviation from this frequency 3.15. The Russian manuscripts studied from Dobrev had shown a higher uniformity: in them the highest standard deviation of the letter frequency is 1.02 (for the big nasal speech sound). It is important to note that the letters **В**, **Д**, **М** and **Р**, which frequencies we will be using later, are missing in Table 1. This shows that their frequency is "stable" and varies in small amounts.

For comparing texts (few texts) Dobrev has reached the conclusion, that the more the texts are similar in their origin, the greater the amount of the excerpt needs to be included in the research [Dobrev, 1999, 88-89].

This is because, when similar in origin, close values for the letter frequencies are expected, and with small differences in these values the deviations from the "average amounts" need to be reduced to their minimum.

This logic can be expressed in another way: *with high differences between the frequencies the texts are not "close according to letter frequencies" and smaller excerpts can be used for groundwork of the conclusions.*

With diverse – "distant"- excerpts the deviations from the average values of letter frequencies are higher: this can be seen in Table 2.

**Table 1.** Letters with the highest standard deviations in frequent usage – in medieval Old Slavic manuscripts: Bulgarian editing (on the left) and Russian editing (on the right) [Dobrev, 1999, 69 and 68]:

Буква	Средна стойност	Минимална стойност	Максимална стойност	Стандартно отклонение
н	5.44	1.65	9.30	3.15
і	2.51	0.04	6.12	2.40
ѡ	1.24	0.00	2.86	1.24
Ѡ	0.88	0.00	1.98	0.86
ѡ	1.54	0.20	2.73	0.75
Ѡ	3.57	2.70	4.80	0.69
ж	1.77	0.80	2.74	0.53
ї	0.50	0.00	1.85	0.51
га	0.49	0.00	1.21	0.50
о	8.87	7.74	10.22	0.45
д	6.04	5.21	7.35	0.38
w	0.43	0.02	0.97	0.36
Ѳ	0.26	0.00	1.14	0.30

Буква	Средна стойност	Минимална стойност	Максимална стойност	Стандартно отклонение
ж	0.78	0.00	2.70	1.02
ѡ	3.31	1.82	5.52	0.88
ѡ	2.58	1.40	3.71	0.69
о	8.93	7.42	10.21	0.56
га	0.88	0.23	1.95	0.56
оу	2.12	1.10	3.14	0.55
Ѡ	2.20	1.62	3.18	0.40
ю	0.70	0.07	1.38	0.39
н	8.35	7.41	9.21	0.30
т	5.40	4.16	6.38	0.30
Ѡ	2.57	2.06	3.40	0.30

**Table 2.** Letters with the highest standard deviations with high usage – all of the Old Slavic manuscripts – Bulgarian, Russian and Serbian editing's that were studied by [Dobrev, 1999, 70]:

Буква	Средна стойност	Минимална стойност	Максимална стойност	Стандартно отклонение
Ѣ	4.28	0.00	11.09	2.71
И	7.46	0.16	10.13	2.38
Ь	2.82	0.00	7.53	1.76
І	1.11	0.00	7.17	1.74
Ѧ	1.41	0.00	4.00	1.03
Ж	1.00	0.00	4.18	1.02
Ѧ	0.42	0.00	3.86	0.93
Ю	0.45	0.00	3.45	0.79
ОУ	1.91	0.46	4.73	0.70
Ѣ	2.94	1.61	5.41	0.68
О	8.87	6.29	12.35	0.67
Е	6.03	3.95	9.36	0.57
Ѧ	0.80	0.00	2.33	0.56
А	6.46	4.41	8.65	0.55
Ѣ	0.86	0.00	2.02	0.55

Буква	Средна стойност	Минимална стойност	Максимална стойност	Стандартно отклонение
Ѣ	0.38	0.00	1.67	0.53
Ѣ	5.37	3.07	7.38	0.52
Ѣ	0.54	0.00	2.60	0.51
Ѧ	3.25	0.91	6.34	0.49
Ѣ	3.43	1.85	5.40	0.42
С	6.29	3.67	8.18	0.42
Ѣ	5.59	3.11	7.21	0.41
Г	2.53	1.27	4.27	0.40
ї	0.35	0.00	4.35	0.40
Ю	0.58	0.00	1.99	0.38
Н	4.60	3.22	7.59	0.35
Ѧ	3.35	0.00	4.92	0.34
Л	3.07	1.09	4.35	0.33
Ѣ	0.66	0.00	1.80	0.33

## 7. Letter frequencies in the inscription from Preslav

We are using the representation of the text of the Great inscription from Preslav in *Cyrillic* letters (Figure 2) according to [Dobrev & Dobrev, 2001, 89]. We eliminate the numbers as we are unaware how they were pronounced.

The rest of the text is:

**ЖИТКОИ ИЧИРГУ БУЛЕ ХУМШИ КЮПЕ ТУЛШИ ЕСТРОГИН КЮПЕ ТУЛШИ ТУРТУНА ПИЛЕ ЖОПАН  
ЕСТРЮГИН КЮПЕ ТУЛШИ АЛХАСИ КЮПЕ ХЛУБРИН**

It includes 97 letters in total.

Let us examine the frequencies of the letters: among them we can find four: - В, Д, М and Р:

Letter	В	Д	М	Р
Amount in the inscription	0	0	1	5
Percentage in the inscription	0	0	1	5

We are going to treat the names (personal - of the rulers, clans and calendar names) in *The Nominalia of the Bulgarian khans* ([Nominalia, Wikipedia]) in an analogical way.

## 8. The text of the Nominalia of the Bulgarian khans

The *Nominalia of the Bulgarian khans* (Bulgarian: „Именник на българските канове”), also more known as „Именник на българските ханове”) is a short chronicle, containing the names and clans of some of the early Bulgarian rulers.

Inside it we can find the dates and length of the periods of their ruling. Interestingly, the title “Khan” has not been mentioned next to any of the names listed. The only mentioned title is „княз”, or prince, used next to the name of Iperih (“Исперих”) and his five predecessors.

The Nominalia of Bulgarian rulers or “Именник на българските ханове” has been found in 1861 from the Russian scholar Alexander Popov during the study of Russian chronicles. There were three Russian transcripts found: the earliest of them – The Uvarov’s, dates to the end of 15<sup>th</sup> century, the rest two – Pogodinov’s and the Moscow one are considered to be from the 16<sup>th</sup> century. Amongst the three there are few differences in the transcription of the names of the rulers. The text (Table 3) of the work has been included in the book *Hellenic and Roman Chronicle* („Елински и римски летописец”), between *The Forth book of the Kings* and the *Chronicle of Georgi Amartol*, without being separated from them.

Table 3. The text of the Uvarov's transcript ["Nominalia", Wikipedia]

Авитохоль жить лѣтъ. ѿг. рѣд ему Дуло. а лѣтъ ему дилѣмъ твирем. Ирникъ. жить лѣтъ. ѿри. рѣд ему Дуло. а лѣтъ ему дилом твиримъ. Гостунъ наместникъ съї два лѣта. рѣд ему. Ерми. а лѣтъ ему дохсъ. втиремъ. Курт: ѿѣ лѣтъ дръжа. рѣд ему Дуло. а лѣтъ ему шегоръ вечемъ. Безмеръ ѿг. лѣтъ. а рѣд сему Дуло. а лѣтъ ему шегоръ вемъ. сїи ѿе княз. дръжаше княженіе обону страну Дунаа. лѣтъ. ѿф. ѿеі. остриженами главами. И потѣм прииде на страну Дунаа. Исперих княз тожде и доселѣ. Есперих княз. ѿѣа лѣтъ. рѣд Дуло. а лѣтъ ему верени алем. Тервен. ѿка. лѣто. рѣд ему Дуло. а лѣтъ ему текучитем. твирем. ѿки. лѣтъ. рѣд ему Дуло. а рѣд ему дваншехтем. Севаръ. ѿеі. лѣтъ. рѣд ему Дуло. а лѣтъ ему тохалтом. Кормисошь. ѿзі. лѣтъ. рѣд ему Вокиль. а лѣтъ ему шегоръ твиремъ. Сїи же княз измѣни рѣд Дулов. рекше Вихтунъ. Винех. ѿз. лѣтъ. а рѣд ему Оукиль. а лѣтъ ему имаше Горалемъ. Телець. ѿг. лѣта. рѣд Оуганъ. а лѣтъ ему соморъ. алтемъ. И сїи иного рад. Оуморъ. ѿм. днїи. рѣд ему Оукиль а ему дилѣм тоутѣм.

### 9. The names of the Nominalia of the Bulgarian khans

We remove the "Slavic" words from the text, and we leave only the names (personal – rulers, clan names, and calendar names):

**Авитохол Дуло дилѣм твирем Ирник Дуло дилом твирим Гостун Ерми дохс тирем Курт Дуло шегор вечем Безмер Дуло шегор вем Исперих Есперих Дуло верени але Тервен Дуло текучитем твирем Дуло дваншехтем Севар Дуло тохалтом Кормисош Вокил шегор твирем Дуло Вихтун Винех Укил Горалем Телец Угаин сомор алтем Умор Укил дилѣм тутѣм**

The letters here are 269.

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## 10. Letter frequencies in the names of the Nominalia of the Bulgarian khans

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After counting the letters B, Д, M and P the results were the following:

Letter	<b>B</b>	<b>Д</b>	<b>M</b>	<b>P</b>
Amount in the Nominalia	15	13	20	21
Percentage in the Nominalia (approx.)	6	5	8	8

Now we can compare the frequencies with the frequencies of the same letters = sounds B, Д, M and P in the Preslav inscription (Table 4):

**Table 4.**

Letter	<b>B</b>	<b>Д</b>	<b>M</b>	<b>P</b>
Amount in the Nominalia	15	13	20	21
Percentage in the Nominalia (approx.)	6	5	8	8
Amount in the inscription	0	0	1	5
Percentage in the inscription	0	0	1	5

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## 11. Conclusion from the comparison of the letter frequencies in the names of the Nominalia of the Bulgarian khans and the Preslav inscription

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As we can see from Table 2, in the old Slavic manuscripts the letters **B**, **Д**, **M** and **P** have relatively low deviations (they are in the second part of the table). This makes them suitable for our goals.

If we take into consideration the following:

1. The relatively high differences between the letter frequency of the letters B, Д, M and P in the The Nominalia or Bulgarian Rulers and the Preslav inscription (Table 4);
2. The effortless spelling and pronunciation of these letters (and their corresponding sounds) in Old Slavic and Greek letters (the letters both the The Nominalia of Bulgarian rulers and the inscription were written in);
3. The low standard deviations of B, Д, M and P in old Slavic manuscripts, we can make the following conclusion.

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It is more probable that the language of the Great inscription from Preslav is different from the language of the "people of Isperih", than it is probable that it is the same.

This conclusion points us towards the unbiased search for more arguments and landmarks for the dating and attribution of the Preslav inscription in broader chronological terms.

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## 12. YNE = 455 or ONE?

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The first from the numbers in the Great Preslav Inscription, written in the form "YNE" (Figure 3), can be transcribed as "une", which is **one** in Wallachian. If the inscription is indeed a list of military armor (including weapons), it is natural that it will begin with an important weapon or equipment, that is maybe an only one, for which the whole word is written spontaneously and out of respect, meaning it is a single one.



**Figure 3.** The number YNE (une, one) in the Preslav inscription

This word points us towards another dating of the inscription, different from the considered one: and namely, the end of 14<sup>th</sup> and the beginning of 15<sup>th</sup> century, when on the territory of Dobrudzha other than Bulgarians and Greeks, there were Tartars, Gagauz and Wallachians – all of them under the Ottoman dynasty. In this era it seems natural that some military forces use "eastern languages".

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## 13. "Pile Zhupan" („ПИЛЕ ЖОПАН")

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The word Zhupan means administrative ruler of a regional union of the southern Slavs in the past [Online Dictionary, жупан]. It has been widespread and in Wallachia in the XV-XVII century. Ill. 4 represents an excerpt from the text of a Charter of Mikhail voevod, ruler of Wallachia, issued in Targovishte in 1418 [Miletic & Agoura, 1893, 332]. In this excerpt the word Zhupan (жупан) is repeated twice. In addition in the third line we find also the name Pile (Пиле), accompanied by the title *logothet* (Figure 4). This makes logical the interpretation of "PILE ZHORAN" („ПИЛЕ ЖОПАН") as "zhupan Pile". In this text along with Pile are mentioned names like Vojko, Radul, Stancho (2 times), which are common Bulgarian names; but because "pile" is a common Bulgarian word, probably it has been used also as a name.

моу ѿ ѿжчена дѣша тѣла и крѣве христовы: † и се свѣдетеле: жупан  
 Коико. Радлаъ ван. Яга ван. жупан Шербан Любитѣла. Станчо Ерѣбѣла.  
 Станчо Мѣзѣк. Крѣстѣк Тжтарѣла. Бора Нѣнчюл. лѣгодет Пилѣк и азѣ  
 Михаил еже исписахъ въ Трѣговице въ тѣо вѣкѣмѣ, когда прѣиде родител  
 ѣка ти госпожда ѿ Кжгрѣ мѣца протоѣюѣна ѣв. лѣт. ѣѣцкѣ. ендикѣон ѣи.

Figure 4. Excerpt from the text of a Charter of Mikhail voevod, ruler of Wallachia, issued in Targovishte in 1418 [Miletic & Agoura, 1893, 332]. The word Zhupan (жупан) is repeated twice

ЛѢГОДЕТ ПИЛѢК

Figure 5. "Logothet Pile" in the text of a Charter of Mikhail voevod (Figure 4)

#### 14. Final argument and our hypothesis

As a final argument for the hypothesis formulated below we can add the following reason: the word "Hlubrin" ("ХЛУБРИН"), which according to [Dobrev & Dobрева, 2001] means "siege tower", according to [Venedikov, 1946] – helm, according to [Minkova & Ivanov, 2010] – blacksmith, can be interpreted as Culverin "*кулверина*" (in German *Kolubrine*, in French *couleuvrine*, in Italian *colubrine*; from the latin word *coluber* = *serpent*, literally means "like serpent") [Culverin, Wikipedia]; this is an early fire arm, predecessor of the musket and arquebus. The earliest report of it dates back to the beginning of 15<sup>th</sup> century; it is used by the ground troops of France in the middle of 15<sup>th</sup> century [Culverin, Wikipedia].

The above considerations give the basis for our **hypothesis: The Great Inscription from Preslav is an artifact, created during the 15<sup>th</sup> century.**

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