

Using Script Against Undesirable Readers: The Coded Messages of Mihovil and Antun Vrančić

Milenko Lončar, Diana Sorić

Abstract

During the period of their correspondance, the brothers Mihovil and Antun Vrančić would occasionaly write messages in code^[1]: Antun in a letter written while on a diplomatic mission in Paris in 1546, and Mihovil in four letters written in Šibenik some twelve years later. While conducting the necessary research required for our investigation, we discovered that one letter had, until now, remained unknown. We succeeded in deciphering Mihovil's system of signs by comparing the frequency of signs in the coded parts of the text with the frequency of signs in those parts of his letter composed in Latin script. The majority of the signs are derived from the Latin script and only their quality has been changed. It seems that this was influenced by the *Polygraphia*, a work by the then contemporary cryptographer Iohannes Trithemius. In addition, a certain number of Arabic signs as well as signs from other scripts have been included.

Most of the hidden content deals with investments in real estate and other buisiness ventures, thus the purpose of this secret system of writing was evidently to prevent the competition from gaining a possible advantage over Antun and Mihovil. At the time, after a four-year diplomamtic embassy position in Turkey, Antun had been awarded by the Emperor Ferdinand and his income had increased significantly. The need for caution and discretion is evident in two messages in which we find Mihovil warning his brother to be wary of two other brothers who have a dubious moral reputation.



Antun's extract remains unsolved as he wrote using a different system. Additionally, the text itself is quite brief so an analysis of the frequency of signs is of little use.

Keywords: Mihovil Vrančić, Antun Vrančić, correspondance, cyphers, decyphering, Šibenik, investments, rennaisance diplomacy

The Corpus

It was in 1863 during the publication of the seventh volume of the collected works of Antun Vrančić that Laszlo Salay informed the scientific community that the two oldest and closest brothers of the Vrančić family had a habit of using a secret code in their correspondance. As a footnote to three of Mihovil's letters from 1558 and 1589, the editor had cautioned (in Hungarian) that certain passages of the text were written in a secret script (Verancsics 258, 290, 336). [2] He neither attempted to reproduce these passages nor did he attempt to interpret them.

Almost a century and a half later in his comment on the unpublished papers of the Vrančić family (which are stored among the collection of manuscripts in the National University Library of Zagreb), Darko Novaković pointed out an intersting fact that there is a passage written in code in Antun's letter which was sent from Paris in 1546. He pointed out the type of code and the reasons for secrecy: "The code is based on the characters of the *bosančica* script, which the brothers obviously assumed would pose too great a cryptographical challenge for the many curious agents of the secret service who might chance along the way between Paris and Šibenik" (161-162). Besides this, he also pointed out that on several occasions Antun had expressed certain concerns to his brother over a sack containing his most important (and thus encrypted) writings (162-163, 166, 168).

The co-author of this paper, while collecting material for her dissertation on the familial corespondance of Antun Vrančić from the Sczéchenyi library in Budapest, obtained a photographed copy of Mihovil's handwritten manuscripts. Now one can gain further insight into this topic and the types of letters written by both brothers.

Although it is evident from the archived correspondance that Antun and Mihovil exchanged letters for over thirty years, from 1538 to 1539^[3], there is a paucity of letters written in code. There are only five in all: Antun's letter from 25 January 1546, approximately two lines of tekst (NSK Ir-2v) and



four letters written by Mihovil (the first from 6 November 1558, a nota bene at the end of the letter comprised of five and a half lines (Séchenyi 236r); the second from 27 December 1558, five extracts comprised of five then one, two, four and seven lines respectively (Séchenyi 241r-243v); a third from 11 January 1559, with a postscriptum of eight lines (Séchenyi 262r-263r) and a fourth - a note which belongs to a letter from 9 February 1559, comprised of nine lines (Séchenyi 262v).

Mihovil's letter from January 1559 had managed to evade Szalay and Wenzel and so it was not published in the series of books Monumenta Hungariae Historica. After perusing photographed copies which had been sent form Budapest it is clearly evident that it cannot be found among the corpus of letters marked under 1681 fol. Lat. Besides this, one cannot find any of the markings which were most likely used by Szalay and Wenzel while collecting this material for publication. On the basis of these findings one can easily point out that one must be prepared for new discoveries when attempting to sytematise and classify the epistolary corpus of Antun Vrančić and his correspondents. Other than this, it is perhaps possible that someone might find the sack that Antun cared so much about, as it seems that it contained other letters that were written in code. Although he referred to these letters as his "writings" on three occasions, there is a passage in a letter from Vienna, 17 October 1558, in which he refers to them as his letters (NSK 6, Ir):

Quum huc adueneris, referas mihi torbam istam cum scriptis meis, quam ex Turcia ad Ioannem et ad te destinaueram: sunt in ea quedam scripta mea ziffris exarata, que interpretari desiderarem, ut tandem mee epistole in ordinem redigantur. Once you have arrived here, bring me that sack with those writings of mine which I sent from Turkey to you and to Ivan; in it are some of my writings that are marked in code which I would like to interpret, so that my letters can finally be set in order.

Unless he was using the term *epistola* in its wider meaning, one may surely assume that Antun is referring to the confidential diplomatic mail that he had sent to Vienna. It will remain unknown whether the *ziffrae* he is referring to are identitical to the ones found in the letter from Paris.

Mihovil's Letters



Deciphering

In our endeavour to understand an elusive text, we thought that, at first, we should ask assistance from our collegues who research old Croatian letters. Meanwhile, the response was that no sense could be made out of them, and that it was impossible to conclude in which language they had been written. What remained was to reconcile ourselves to the fact that there would be several *lacunae* in the prepared critical edition. Another option was that we put to use our acumen in deciphering the elusive content.

The challenge itself was indeed tempting. As a start we compared only Antun's coded extract (**Figure 1**), seeing that it is the oldest and contains signs derived form the *bosančica* script. The results were non-existent because we could not uncover any discernable meaning. There was a second attempt with the aid of the *glagoljica* script but this was also unsuccesful. Upon closer inspection it had become evident that the numerous signs used by Antun did not correspond to those of the *bosančica* script (because of this we will be using the term *bosančica* with cetain reservations, in quotation marks). Greek characters can also be found and some of them are of the same value as their corresponding Latin characters. In addition, certain letters do not seem to belong to any alphabet that we could recognise. Most interesting of all is the fact that the signs, used by Antun and Mihovil respectively, correspond only in minor details.

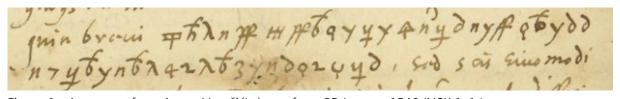


Figure 1 - An extract from Antun Vrančić's letter from 25 January 1546 (NSK 1, 1r)

The Shortest Passage

Our next task was to analyse Mihovil's more numerous and longer extracts. To begin, the shortest



passage was selected (**Figure 2**), with the assumption that, as it is the shortest passage, it would be the easiest to surmise its meaning by relying on the context of the letter itself.



Figure 2 - An extract from Mihovil Vrančić's letter from 27 December 1558 (Széchenyi 241r)

In order to make the analysis easier, the coded text was transcribed into its corresponding signs that can be found on almost any computer. The cited passage, along with its Latin context, would look something like this:

As is evident, the Latin portions of this message are also rather cryptic. If we have understood this correctly, mention has been of a group of people that Mihovil holds in low regard. They had decided upon something, but had changed their decision, yet may even fforfeit this decision upon the return of an obviously influential member of the group, who will most likely become a member of its governing body. In this instance the reference is to a monastic community in Šibenik.

Because this extract begins with the preposition *de*, the ablative case must be present in the question. It is for certain that, beside this ablative, we will find a word in the genitive case (as in *De coniuratione Catilinae* or as in *De humilitate... Christi*). It was a fortunate circumstance that the first two signs (g3) were exatly the same as the last two, only that they are facing in the opposite



direction (3g). The duogram *HH*, if it is not a *geminata*, is most likely a border between two words, which would certainly make deciphering easier. Furthermore, the same sign is repeated two more times in the later parts of the text, and in addition, the sign *p* appears in the fourth and the seventh part.

We continued by combining the case endings for the genitive and ablative, and contrariwise, of all five declensions in the singular and the plural. We hoped that the shortest case endings were not the only ones used, as this would barely be of assistance to us. We gained little from this. We were still faced wih a great deal of aporia. It is worth noting that only later it became apparent that the "poorest" case endings were the most prelavent: the a-declension for the ablative singular and the o-declension for the genitive singular.

Frequency of Signs

After our initial dissapointements, we came up with a new idea: to construct a table of the frequeny of signs from the bosančica script, the Latin signs from the remainder of Mihovil's letter and of the Latin signs from a Croatian text from the literary remains of both brothers, which, truth be told, does not belong to Mihovil but to Antun. We hoped that, seeing that the other sources were lacking, they would serve their purpose to reveal in which language the messages were written. We are referring here to Antun's prayer which was published in the Navk Karstyanski (44-47; facsimile in Horvat 196-200), which is in turn a translation of Bellarmini's Dottrina christiana breve. It was only then that we realised that, by calculating the frequency of signs, we had made our first step in deciphering the language of this text. The Arabic scholars had already used such means in the Middle Ages (Weber 7) and today one can easily find the tools for such a task on the Internet. These are the results:



	со	ded passa;	ges]	Latin scrip	ot	the Croatian prayer				
: 0	sign	total	%	sign	total	%	sign	total	%		
1	a	148	11,4	е	177	14,1	i	157	14,3		
2	g	139	10,7	i	165	13,2	0	120	10,9		
3	Н	118	9,1	s	105	8,4	e	118	10,8		
4	t	113	8,7	r	100	8,0	a	81	7,4		
5	đ	106	8,1	t	94	7,5	s	80	7,3		
6	р	105	8,1	u	87	7,0	v	74	6,7		
7	3	94	7,2	a	77	6,2	n	70	6,4		
8	0	78	6,0	m	76	6,1	t	60	5,5		
9	y	73	5,6	n	72	5,8	m	55	5,0		
10	ħ	69	5,3	o	69	5,5	r	39	3,6		
11	h	58	4,5	d	42	3,4	1	37	3,4		
12	s	44	3,4	с	35	2,8	j	34	3,1		
13	ж	38	2,9	1	35	2,8	p	33	3,0		
14	n	31	2,4	р	32	2,6	g	31	2,8		
15	7	24	1,8	q	16	1,3	u	24	2,2		
16	T	20	1,5	f	15	1,2	đ	20	1,8		
17	е	15	1,2	ь	14	1,1	h	19	1,7		
18	1	14	1,1	v	14	1,1	k	19	1,7		
19	8	10	0,8	gg	11	0,9	С	12	1,1		
20	x	5	0,4	h	11	0,9	ь	9	0,8		
21	q	1	0,1	x	2	0,2	z	6	0,5		
22				j	1	0,1					
23			· ·	у	1	0,1		e e			
24	3			z	1	0,1					
total	8	1303		8	1252	2		1098	;		



It is not difficult to see that there is a greater congruence between the *passages in code* and the *Latin script* than in the *coded passages* and the *Croatian prayer*. In the *Latin script* and in the *passages in code* the signs in the first and the second part are quite close, as are the signs in third and the fourth part, whereas between the second and third part there is a noticeable gap. In the *prayer* there appears to be a greater breach between the first and second, third and fourth parts, and a greater closeness to the numbers in the second and third parts, which is the definate opposite of what we found in the *Latin script* and in the *coded passages*. This was our first sure sign that these camouflaged passages were written in Latin.

Thanks to this insight, we continued by combinining the case endings for the gentive and ablative with even greater ambition, and yet the text still seemed to escape our understanding. The reason being that our *exemplum* text was found to be insufficient to make a more certain calculation of the frequency of signs. The closest we got to a correct combination was a variation of *i-n-s-uao-?-e-?-?-r-n-i*, in which the first three signs (*ins-*) and the last three signs (*-ni*) were defined correctly, as later became apparent. Besides this, the first of the three proposed signs in the fourth part (**u** ao) had also proven correct, but we could get no further than this. Also unsuccesful, was our attempt, based on the phrase *gregem illum*, to discover which family from Šibenik (Šupuk 126-162) this phrase in the text is referring to. One must note that a *geminata* is incorporated into their surname.

The Number 400

After another defeat, a detail from the second extract of the same letter (**Figure 3**) attracted our attention. Among a series of incomprehensible signs we noticed the number 400 written in Arabic numerals.





Figure 3 - An extract from Mihovil Vrančić's letter from 27 December 1558 (Széchenyi 241v)

Transcribed, together with the Latin text that surrounds it, the extract appears as follows:

Ceterum nunc si unquam alias tempus et occasio est emendi stabilia, | qui sumptibus abundat. Tamen inter alia nunc prostant $npax|hseabgoaxyttattgy3atg3g3tphHxabpgsepåghataå|xph3eabgoamH7bgsHåaaåoH<math>^{\perp}3ap3HatåghhH8pa|mpabH$ åaxgtsyxg3y3a3tgtxbymhyba3dt 400 Hhg|yhgoxaåbgxHbgtyågxby300, altera gognaiorum 100 altera 40.

It is now as otherwise, if ever, the time and the opportunity to purchase real-estate. And yet among other things there are offers for $npamp|hseabgoamyttattgy3atg3g3tphHmabbgsepaghataal|mph3eabgoamH7bgsHaaadoH<math>^{\perp}$ 3ap3HataghhH8pa|mpabHaamgtsymg3y3a3tgtmbymhyba3dt400Hhg|yhgomaabgmHbgtyagamby300, on of 100 gonjaj, and the other of 40.

We surmised that before every number we would need to find the term used for a certain currency in the genitve case, especially due to the fact that we found y in seven signs before a number in the second part, and in the fourth a (h y b a 3 d t). It seemed to us that this might mean d u c a tor(um) or perhaps the Croatian variant d u k a tov, but there seemed to be no other possibilities. Likewise, we did not succeed when we used floreni, another type of currency of which Mihovil makes mention in his letters, per e.g. in the letter from 16 November 1558 (Széchenyi 236r;



Verancsics 1, 257). This time round, fortune did not smile upon us, but was cruel, as florin was actually the currency mentioned in the text, but it was in the Latin *ablative*. In order to get to the correct reading, we needed to include one more sign in our calculations, the eighth sign before the number 400.

Cryptography

After yet another defeat, we thought it was time to try something else. We researched the history of cryptography, which had been developing with greater intensity in the Occident at the very beginings of Humanism (Weber 5-13).^[7] The reason why certain messages were encrypted was to protect mercantile and political interests. When we consider the times in which they lived and Antun's social position, it becomes clear that there is nothing strange in the fact that there are enigmas in the correspondance of the two Vrančić brothers.

It is of the greatest interest that at the beginning of the 16th century the German priest Ionnes Trimethius published the *Libri polygraphiae VI*, ^[8] in which he perfected a system similar to Caesar's. Towards the end of the book he included several writing systems (Norman, Frankish...) among which one can find signs that correspond to those used by the two Vrančić brothers.

»Qu« saves the day!

Suddenly, while continuing an unsuccesful search with minds almost powerless, were we struck by the fact that in Latin there is a (semi)indespensible conjunction between two signs, and this is - qu - . If one is dealing with Latin, among the encrypred phrases, one is certain to find a repeated combination of two signs, in which only one sign will be found in the conjunction, while the other will be found on its own too, in the company of other signs. And certainly, it quickly became apparent that they are the signs marked as - 8p -. Their appearance together in the text is tenfold.

[9] p appeares frequently without 8, and in combinations with other signs, that it is uneccesary to cite examples. It is interesting that the sign marked as 8 (ie. q) appeares once (Szechenyi 236r) without p (ie. p). The reason for this being that the word itself is shortened behind the sign marked



as 8 (in the phrase uobiq(ue), where one can notice that the final s from the dative uobis has been left out deliberately).

Geminatae

With a renewed enthusiasm we came up with the idea that led us toward recognising the first word. We constructed a comparative table of the frequency of signs that were *doubled* in the Latin and in the coded text. We took into account the possibility of superposition in the Latin script in which a previous word ends with the same same sign with which the next word begins. We placed instances such as these in brackets. Here are the results:



	cod	ed text	Latin script					
ordinal number	geminata	frequency Of appearance	geminata	frequency Of appearance				
1	hh	6	SS	10				
2	tt	5	tt	5				
3	pp	3	mm	3				
4	TT	2	(ee)	2				
5	НН	2	(ss)	2				
6	00	2	nn	1				
7	33	2	ff	1				
8	уу	1	11	1				
9	aa	1	(mm)	1				
10	gg	1	(cc)	1				
11		3	(dd)	ĭ				



We began with the premise that the most prevalent *geminata* in both writing sytems would match, meaning that the *hh* and the *tt* from the *bosančica* script would be represented by *ss* and *tt* in the Latin script, or prehaps on the contrary, by *tt* or *ss*. We took into account the signs that surrounded the *geminata*: two signs to the left and right of each other. We immediately noticed two identical *geminatae* in the extract *?yttattqy* (**Figure 4**).

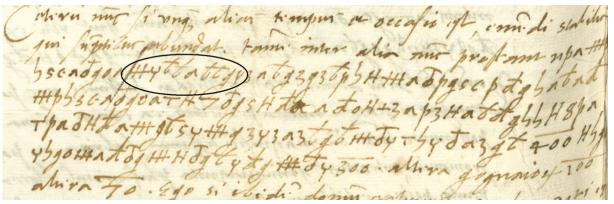


Figure 4 - An extract from Mihovil Vrančić's Letter from 27 December 1558 (Széchenyi 241v)

One must recall that a and g in the bosančica script are signs of the first and second rank and, the counterparts of which are e and i in the Latin script. Once they have all been placed in the series of ?yttattgy, one will find four different variants: ?y - ssessi -y / ?y - ttetti -y / ?y - ssisse -y / ?y - ttitte -y. The first variant appeared as the one that would provide us with the most definite result, as it seemed possible that it might mean po-ssesi-o. We were, in fact, correct. What followed was much easier.

By this stage, we had seven recognisable signs: 8 = q, p = u, t = s, a = e, g = i, ? = p, y = o. Besides this, other *geminatae* began to appear like the Latin (e.g. in *pahhađa* (Széchenyi 242r). Based on the frequency of signs, it seemed most likely that the equivalent of *hh* would be *dd*, *cc* and *ll*, would provide us with *uedette*, *ueccete*, *uellete*). Thus, aid was given us by characters that we had had recognised, a context that also became more palpable by the comparative frequency of signs. We managed to decipher Mihovil's entire alphabet!^[10] The results are as follows:



ordinal number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
code	Н	7	s	n	а	Т	1	Е	g	h	o	3	у	ж	8/x	ħ	t	đ	р	q
Latin script	a	ь	С	d	е	f	g	Н	i	1	m	n	o	р	q	r	s	t	u	х

The Origin of These Signs

It would seem perfectly natural to ask what kind of writing sytem Mihovil had, in fact, used. For a moment it seemed that there were multiple sources. The greatest number of signs, more than a third, are equal to the Latin signs as can be found in the remainder of letters (s, n, a, g, h, o, p). Although they are not written in his handwriting, H, y, x and q are certainly of Latin origin, which, when added up, is more than half. Three arabic numerals (s, s, s) are also of equal value in both of the alphabets that he used. [11]

It is also entirely uneccesary to look for the origin of T outside of the Latin script. Although it is regularly written as a letter in lower case, therefore in the midrange, (as is not the case with H, which is placed in the upper range) it would be reasonable to consider the influence of the greek letter?

The most unusual symbol, +, which we noticed in Capelli's *Dizionario* (418) as the medieval symbol for the Roman nuneral 50, is in fact the same as the upper symbol (T), only that it has been inverted. What supports this conclusion is its proximity in the alphabet: T represents f, and + represents g.

The sign for the letter *e* looks a little different in the manuscript as the greek letter ?,^[12] which means that this is most likely its origin, although it shows some similarities to the same letter in the *bosančica* script.



The sign for \check{z} in today's cyrillic script (?) is equal, as it appears in the manuscript, to the number 600 (occasionaly it is used for 700) in the *bosančica* script (cf. Zelić-Bučan 20 and Table II), to the sign for the number 30 in manuscripts written in the *glagoljica* script (Zelić-Bučan Table III) but also to the sign for m in the Old Frankish alphabet (Trithemius 586) and to the g in the series of abbreviations devised by Cicero (Trithemius 601).

The sign for the letter t in the manuscript is more rounded at its lower end which makes it similar to the jat(j) in the bosančica script (Zelić-Bučan 20 and Table I).

We are still unsure of the orign of b, originally concieved as a circle in its fundamental field from which a verticle line ascends which is crossed by a horizontal line of shorter length. It reminds one of the sign for 100 in the *glagoljica* script (Zelić-Bučan Table III).

Nor could we ascertain the origin of d. One should not entirely disregard that this was of Mihovil's own invention. He wrote the letter d in Latin script in much the same way, so it is quite likely that he simply added a short horizontal line to it.

The last three signs are all quite similar (t, b and d) and when we began we asked ourselves if there really was any difference between them or if they were merely the work of an unsure hand. The author himself was surely aware of the difference as he placed them next to each other (they represent, thus, r, s, t), and he most certainly wanted to make the possibility of deciphering more difficult by doing so.

The foundation for this code is therefore Latin. The use of Greek, bosančica and glagoljica script is almost non-existent. The trace of a possible influence can be seen in the fact that the quality of an unignorable number of Latin letters converge with the value that can be found in the book by Trimethius! This is as follows (587, 591, 592): H = a, s = c, s = c, s = c, s = c, s = c. In addition, it is indicative that this concerns the first three signs of the alphabet, as well as two from the middle and a sign from the end of the alphabet as well.

It seems that the cryptographer from Šibenik has *arranged* these signs, to a certain extent, in a systematic fashion. As this is the case, the signs e, g, and h are moved three spaces to the right (and thus represent h, i, and l), p and q have been moved five spaces (they represent u and x), and n (= e) and y (= o) have been moved eight spaces to the left. The movement of other signs are



more particularised: a (= e) has been moved four places to the right, s (= e) has been moved fourteen spaces to the left, and o (= e) has been moved two spaces.

The fact that there is no completely unilateral system in this code, in its choice of signs or in the arrangement of its symbols, is the greatest value of this system and also its greatest safeguard.

Deciphered passages

When one changes the signs of the coded text in Mihovil's letters for the signs they represent in the Latin script, one will recieve a clear text in Latin despite the occasional mistake made by its author, which was most likely the result of either a lack of concentration or a lack of practice. We will now present to you all the coded extracts with their surrounding context, and will place a transcription and a translation beneath them.

The 1st Letter, Šibenik, 6 November 1558 (Széchenyi 236r; Verancsics 257-258)

The Abbey in Šibenik

uađ butna7HtH3yymma dtpHoH7H|sgHobatg \perp HbadydHhgdabpy7g8|tantgophadtaoahp3Ho7y3HotpooHo|pphdidestphdbHoghhanpsHdyt|p(ro) inde respondete ad hoc.|pHhadHpdaoH33pHdgoxpHnbg3 \perp a3dyt|7y3ytadatdnyog.

Uetrus [!] de Basano offert suam abaciam resigare [!] totaliter uobiq(ue) [!] sed simul et semel unam bonam summam uult idest ultra mille ducatos; p(ro) inde respondete ad hoc; ualet autem annuatim quadringentos bonos et est domi. 13

Petar de Bassano is offering you control over the abbey, but all of a sudden he wants much money for this, ie, over a thousand ducats; so make a reply; it is worth at least a good four hundred a year and it's close to home.

Mihovil crammed into this same piece of paper what he had only hinted at earlier on in the letter and had promised to soon make clearer (in its lower left corner). He had already written that the "buisiness in Trogir" did not progress, but that something "similar" had been offered in Šibenik by



Petar de Bassano, the father of a young man who had recently visited Mihovil in Hungary.^[13] One may discern from the secret text that *negotium* refers to an investment, and the phrase "a clearer notification" refers to a definite buisness offer, the price and the yearly earnings of the abbey.

Petrus de Bassano was also the name of a contemporary notary in Zadar (1531-1570),^[14] so it is difficult not to identify him with the bidder from Šibenik. Mihovil mentions him again in the next letter, written a month and a half (27 December 1558), which we will comment upon a little later. In the letter he writes about the same offer only in greater detail and with an appeal for a reply. It seems that he found this buisness offer quite attractive. Mihovil also writes about Petar's son Ivan with much elation at the end of the letter, as Ivan congratulated Antun to his father because he had greeted him hospitably (Verancsics 296), and again on 9 February in the same fashion (335-336).

The 2nd Letter, Šibenik, 27 December 1558 (Széchenyi 241r-242r; Verancsics 290-296)
The Business in Split

Spaletum profectus egi rem diligenter et multis verbis et auditus sum benigne et cum multa comitate. Tandem sic mihi respondit: si nepotes non haberet, quorum alteri cedere episcopatum decreuerit, esse neminem in tota hac prouincia et alia, quocum id negotii et tucius et etiam libentius confecisset, sanguinem solum obstare quominus efficere possit; illa autem que illi ex Constantinopoli miserat accepit et egit gratias.

Having remained in Split, I presented the matter carefully and with much prolixity, and I have been heard with benevolence and with much kindness. He replied to me thus: if he did not have any nephews, to one of whom he has decided to bequeath the episcopacy, that there is noone else in this or any other region, with whom he would carry out this task willingly and with surety, only blood has hindered him from doing so; that which you sent to him from Constantinople he has accepted and congratulated



This is probably the most puzzling of all the passages in code. After much effort and consultation with others, we concluded to interpret this as though Mihovil had offered a joint task to an influential personage in Split, but that the said personage had refused this as he had nephews. Due to familial obligations he has reserved these tasks for them, otherwise he would most willingly carry this out with the Vrančić brothers.^[15]

It is possible that *this task* is the same thing as *to bequeath the episcopacy*, which depends upon whether or not one can assume that either of the two adverbs 'already' and 'otherwise' are present (thus "to one of whom he has *already* decided – or: *otherwise* decided – to bequeath the episcopacy"). It seems, though, that there are two different matters at hand. It is as if the episcopacy has been mentioned as an afterthought, as an example of a familial obligation which is a hindrance to some other buisiness, and this other buisiness remains unnamed to ensure a greater security. (Mihovil mentions the buisiness in Trogir^[16] allusively, as well as the buisiness in Dubrovnik).^[17]

What aids such an understanding of this passage is the context in which the younger brother provides an account of his tasks, in a letter composed two months later (Verancsics 243-244):

Quod reliquum est, ea que perficienda fuerant mihi iniuncta per dominationem vestram reuerendissimam, partim confecta sunt, partim vero iis proximis diebus diuino auxilio conficientur. Vt puto, domus conductio, hortus, insula, negotium Spalatense et similia. Of what is remaining, that which your most honoured lordship has assigned me to complete, is completed in part, and part will be completed, with the help of God, in the days ensuing. I am thinking of, for example, the lease of the house, the garden, the island, the buisiness in Split and similar things.

Taken together, these are all investments so it is certain that the "buisiness in Split" can be included among them, as was the case with the abbey in Šibenik. Antun returned from a four-year embassy position in Constantinople the year before and for this was awarded with hounours by the bishop of Eger (Novaković 132). Besides this, his earnings increased and certainly led to a "wave of investments in Dalmatia" in 1558 and in 1559, immediately after Mihovil's return from Vienna. He obviously recieved accounts concerning this while he was still in the North.



It remains a matter of conjecture with whom he had spoken to in Split. The care for the nephews and not for one's own children and the bequeathing of the episcopacy all indicate that it was with a member of the clergy.

We are unsure of the meaning of "to bequeath the episcopacy." Does this refer to the episcopal see or to the management of the bishopric, or to a lease?

Haec provincia et alia most certainly refers to the Venetian and Habsburgian part of Dalmatia, although other interpretations cannot be entirely excluded, prehaps including Croatia with Dalmatia.

Antun and Mihovil had recieved a reply that was polite and honest, but ultimately negative. It is not entirely obvious whether or not the gift from Constanople was of any assistance, which was definately more than a souveneir, as Mihovil had also written a record of this in code.^[18]

For a moment we thought that Antun and his nephews were mentioned allusively in the reply. If this were the case, the meaning of this passage might be that an important personage in Split agrees with Antun's choice to select one of his own nephews as succesor based upon his abilities, only that this would not be the correct move due to mutual blood relations. At the time Antun actually had two nephews, Faust born in 1551 and Kazimir born in 1557. But after careful analysis we decided to let go of this variant, as it is illogical that, whoever it was in Split, would have bearing on Antun's reply on who he would most willingly and with the most security take as a buisiness partner. Besides this, Faust was only seven years old at the time and it is difficult to concieve that Antun would already be making serious consultations about his future career, although his father had congratuled him on his future prospects at the end of the letter.^[19]



Krapanj

De insula autem Crapani videtur gregem illum mutasse sententiam, tamen data est mihi spes non vana ad dies paucos, mutatis senioribus, in eam opinionem reuersuros, nam ille qui id facere constituerat, in dies expectatur.

Concerning the Island of Krapanj it seems that that herd has changed its decision; and yet a not unwarranted hope has been given me that in a day or two, once the elders have been changed, that they will return to their previous decision, for he who has decided this is expected every day.

The island of Krapanj is therefore the answer to the shortest of Mihovil's puzzles, which we placed under closer inspection at the beginning of our article, but this is not enough. Taking all into consideration, as we noted earlier, a community plays a part in this. It is perhaps a monastic community, which most likely has rights to, or property on the Island of Krapanj, in which Mihovil has some interest. One remains unsure whether he referred to this evasively because they had changed their decision or because they might have had a bad reputation.

His report on the failed negotiations to purchase a house (which was, without a doubt, in Šibenik) is in much the same fashion and the reasons are much the same as regards the island of Krapanj that we have seen previously:

The House of the Mišić Widow

De nyoy Hpđaopgn paogtgse 3 y t đbasy 3 đg \perp p Htghgs a đao a 3 n H Hpđ κ abopđH3 n H3 phh Ht κ atat đ, miru(m) genus hominu(m) et intractabile.

De domo autem uidue Misich nostre contigua silicet [!] emenda aut permutanda nulla spes est; mirum genus hominum et intractabile.

Of purchasing or exchanging the house of the widow Mišić, which is close to ours, there is no hope; a strange and obstinate kind of people.



Although Mihovil, further on in the letter, amongst other news from Šibenik, writes that *loannes Longus alias Misich* has died, this is not directly connected to the Misić widow so we cannot be sure if it has something to do with same family.

In Šibenik there are two houses known to bear the emblem of the Vrančić family (Kurelac 2008, 67-68, 78-79; 2011, 100-105), so the widow's house must have been in the vicinity of one of them.

The Island of Prvić

Ceterum nunc si unquam alias tempus et occasio est emendi stabilia, qui sumptibus abundat. Tamen inter alia nunc prostant due pulcherime [!] possessiones in insula Peruich utiles et pulcherime [!] fabricate et magne, una est illa que fuerat episcopi Nonensis pro florenis 400, ali[a] olim Petri Parisoti pro 300, altera gognaiorum 100, altera 40. Ego si ibidem itd.

For whoever is full of assets, it is otherwise now the time and opportunity for the purchase of real estate. And now, amongst others, two beautiful properties on the island of Prvić are being offered, useful and beautifully constructed and large, one of them belonged to the bishop of Nin, for four hundred fiorins, the other to the deceased Petar Parizota, for 300, one of a hundred gonjaj,* and one of 40. If I wanted to build a house there, as this is necessary, I would barely be able to complete another of the same amount, with its field and garden. Because of this it seems, at any rate, a better idea to purchase one of them; for either the building or the land will come as a gift.

Before the rather strange *tamen* at the beginning of the second sentence it seems that one should assume the following: "I am not one of those with a plenitude of assets. *Yet* (I will mention:) amongst other things..."



Of the two properties on the island of Prvić one was in the possession of the bishop of Nin (it is possible that this concerns the property of the Divnić family, to which the bishop of Nin, Juraj, and his succesor, Jakov (died 1558) belonged. The other property was in the possession of one Petar Parisoti. It seems that the Vrančić brothers bought at least one of them, as one can read in Mihovil's letter from January 1564. In this letter Mihovil, no longer using code gives a report to Antun concerning two investments - the purchase of two barns for cattle and the purchase of a garden in Crnica near Šibenik^[20] as well as the purchase of the Lukočić property on the island of Prvić which was *right next to the Vrančić property*. [21] The Lukočić property was of particular value, so Mihovil claims, first of all due to the fact that it was next to the existing property and because this house was the birthplace of their father Frane Vrančić.

It seems that a third property on the island of Prvić was also condidered. In a letter written on 1 October 1558, Mihovil includes a short passage written in Hungarian, in which mention is made of a house with a vineyard which was in the possession of Petar Skruanović, and for which he does not have the funds to complete the purchase.^[22] For this reason we are still unsure as to the property next to the Lukočić property, which was purchased at a later date.

It is interesting that the surname Lukočić belonged to two brothers who had quite a bad reputation, and it is to them that Mihovil dedicates his last two messages. But seeing that he does not connect them to the property of the same name, we should not either, although we are tempted to think that he took advantage of the sale of this property at a much lower price.

Another interesting fact is that Mihovil used Hungarian when writing about his first intended purchase. It is certain that he did not feel safe using it so he incorporated code in his letters some time later. Yet after the purchase had been completed, he no longer keeps it a secret, but mentions it openly. That the sending of mail entailed a great risk at the time was something that Antun's friend complained about to Mihovil from Venice 1558 (Verancsics 7, 224): Quod plus est, neque scribere ad dominationem vestram reuerendissimam per eorum nuncios audet, nam littere aperiuntur eius et accepto succo ex ilis pro suis mittunt . ("What is more, he dares not write to your most honoured lordship through his own messangers; for his letters are opened and the core has been taken out of them, they send them as their own.")



The Abbey in Šibenik II

Porro H7HsgHoeH3stg7a3gsa3taoeH7adgtdagppa3gtgyH3|3at8pgat dHmpn. D. V. R(everendissi)ma(m). agptmHdabmadbmal ptna|7HtH3y alias bp3abH, pahhadaHobatgb3HbD. V. R(everendissi)me.|dydHhgdabquia 3apdabmghgybpoagptpphdshabg|sHbgtantgophadtaoah7y3HotpooHoymdHdfacit aute(m)|totam sum(m)am H3pHdgo7y3yt8pHnbg3b1a3dytmhyb1a3yt|g3pg3yadmbpb1g7ptadHmgsdg7ptspooyngsgtaqb2gtaqtaltgt. Quare D(ominatio) V(estra) R(euerendissi)ma perpendat et rescribat mihi, quid|agere debea(m), p(er)tentet etiam istu(m), quid animi habeat.

Porro abaciam hanc Sibenicensem habet iste iuuenis Ioannes qui est apud D. V. R(everendissi)ma(m). Eius pater Petrus de Basano alias Gunera, uellet eam resignar [!] D. V. R(everendisi)me totaliter quia neuter filiorum eius uult clericari, sed simul et semel bonam sumam optat, facit aute(m) totam sum(m)am anuatim (!) bonos qadringentos florenos in uino et frugibus et afictibus cum modicis expen|sis. Quare dominatio Vestra reuerendissima perpendat, et rescribat mihi, quid agere debeam, pertentet etiam istum, quid animi habeat.

Furthermore, this abbey is now in the hands of that youth Ivan who is now with your most honoured lordship. His father Petar de Basano also known as Gunera would like to acceed it to your most honoured lordship in toto, as neither of his his two sons wish to become members of the clergy, but together and immediately want good money; but together they provide a yearly sum of 400 fiorins in wine, fruit and rents with moderate expenses. For this reason may your most honoured lordship consider this and answer as to what I should do; may he ask him and what he has in mind.

We once again encounter indiscernable particulars in a message of rather clear foundations.



The 3rd Letter from Šibenik, 11 January 1559 (Széchenyi 57r-57v).

The Brothers Lukočić

Ceterum interest et hec addere: duo faliti eo prfecti [!] sunt, Simon Lucocich et Rafael, qui squaquaratis²⁴ omnibus bonis suis pleni mendaciorum et stulticie peregrinationem hanc susceperunt, alter eorum Simon scilicet clam sine literis [!] meis se proripuit qui inter alias uirtutes etiam duas habet uxores, unam hic, alteram in Murlachia et fidem Rascianam suscepit. Quid de hoc agendum fuerit, eius integerimo [!] relinquo iuditio, mea culpa nulla certe est, nam eius animum bene novi.

Besides, it is important to add the following: two irresponsible men have gone to travel there, Šimun Lukočić and Rafael, who having spent all their assets, full of lies and stuptidiy, have undertaken this trip: one of them, Šimun, secretly rushed off without my letter: he has, among other virtues two wives, one here, and the other in Morlacia and has accepted the faith of Raška. What must be done in this case, I leave to your most unprejudiced judgement, all in all I am entirely inoccent, I know your temperament very well.

If one them has rushed off without the letter (which was most certainly adressed to Antun), does this mean that somebody else has taken it? The last sentence is especially puzzling. First of all we are uncertain if the second *eius* (sc. *animum*) in this letter refers to Antun, or perhaps to Šimun which would be more difficut to comprehend. As it is, it seems that Mihovil held his older brother in such a high regard that he had refused to give him any advice so that it would not seem as if he were imposing something on him, which was something which Antun obviously could not tolerate.

Taking all into account, it seems that Mihovil found the entire situation rather discomforting, as he repeated the message again two weeks later, in a special addenda in the following letter.



A note added to the 4th Letter from Šibenik February 9th, 1559 (Séchenyi 241r; Verancsics 7, 333-336.).

The Brothers Lukočić II

Interim hisce diebus p(re) teritis npymHhg å a 7 a t å ga | Hnpyt æ bym a s å a t p 3 å t g o y 3 h p s y s g s e a å bH m H e h | a å æ p 7 h g s H m H o H a t å 8 p y n t g o u 3 æ by æ å a b å y å | mp b å H s y o g t t H 3 H o 8 p H o æ bg o p o bH 3 s y h g 3 p t | s H æ å p t a t å o y q H p t p bg å y o 3 g 7 p t g 3 t g g t a t H h g y | 8 p g 3 o a 3 n H s g t t g o p t e H 7 a å H p å a o n p h t p g y ba t | p 3 H o e g s H h g H o å 3 g 3 g g o p bh H s H o g h h a p a by H h g | p t a g 3 y 3 g b å y å p t a t å 3 p 3 s a å g H o æ a g y b8 p H o | æ bg p t 8 p g n s p o å H h g 7 p t o y 3 t å bg t H ba 3 n p o t g å | ipsa optime co(n)siliu(m) capiat, ex preteritis.

Interim hisce diebus preteritis duo falite bestie ad uos profecte sunt, Simon Lucocich et Rafael et publica fama est quod Simon propter tot furta comissa, nam quam primum Rancolinus captus est, mox aufugit omibus insiis [!], es [!] alioquin mendacissimus, habet autem duas uxores, unam hic, aliam Tninii, Murlacam; ille uero alius ei non ignotus est, nunc etiam peior quam prius. Quid cum talibus monstris agendum sit, ipsa optime consilium capiat, ex preteritis.

In the meantime during the last few days two irresponsible beasts have travelled over to you, Šimun Lukočić and Rafael, and it is spoken in public that Šimun has left for so many acts of larceny: for as soon as Rankolin was arrested, he fled immediately so that no one had noticed; besides this he is the biggest liar; he has two wives, one here, the other in Knin, a Morlac woman; the other brother is not unknown to you, he is even worse now than he was before. What is to be done with such monstrosities, you will best decide according to what has been stated.

In this reprisal we find out why Šimun had left Šibenik so suddenly. Next to the sins of wantoness, bigamy and apostasy, acts of larceny are added. The mention of Rankolin adds a new dimension to this. Seeing that Mihovil mentions him without any other attributes, it is certainly the the name of a public personage on the other side of the law. Perhaps mention is being made of social unrest, as had occured twenty years later (Stošić): "in the year 1582 the people rebelled, who were led by Ivan Ručić and his brothers, Nikola Rankolin and Luka Rajčević. It seems that this was a political uprising."

We can only surmise what the connection was between the Rankolin mentioned in this letter (1564) and the Nikola Rankolin mentioned in the cited article, and yet some of those with the surname Rankolin, according to Mihovil's views were not among the respectable inhabitants of Šibenik.^[23]



Antun's Letter

We were taken by no small surprise when we attempted to apply the quality of Mihovil's characters to Antun's coded passage. It is not the same alphabet! Should one attempt to locate the first sign used by Antun, for example, (which reminds one of the greek letter?), it is impossible to find it. The same applies to the third sign (the greek letter?), to the fifth, the ninth (the greek letter??), the eleventh, the twelfth, the sixteenth, and in the second line to the ninth and tenth.

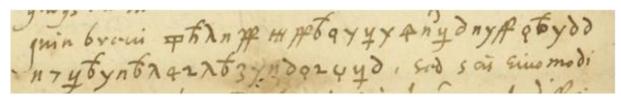


Figure 5 (=Figure 1): Antun's passage

There is a convergence only between a smaller group of signs, seven of them, some of them might come close, but a good portion of them are simply different.



Figure 6 - Passage from Mihovil's letter from 28 December 1558

Only a smaller number of them are derived from the Latin script, and there are several new signs whose origin still awaits investigation. It is no wonder that Antun's letter cannot be read by using Mihovil's system as a guideline, despite several attempts to find different convergences between the two series of signs. Therefore, either the shape and the value of these symbols had changed in the meantime, from Antun's letter in 1546. To Mihovil's in 1558-59, or the two brothers had their own respective systems.



Calculating the frequency of signs is also of little assistance, obviously due to the brevity of the passage, only 45 signs in all, half a sentence.

The context of the message is rather clear:

Ego in Franciam Dei munere saluus perueni. Ab hoc Rege| non citra meam sententiam sum exceptus. Nec dubito aliqualiter| quoque omnia ad uota mihi successura, neque multum aberit,| quin breui φ h λ n M \varkappa c M t ρ y ψ y 4 n ψ δ n y M ρ t y δ δ | n 7 ψ t y n t λ 9 2 λ t 3 y n δ ρ 2 ψ ψ sed scis eius modi| negociorum, quale meum est, principia habere paulo diffici|liora propter meliorem deliberationem. Itaque sat hoc tibi,| sat reliquis meis omnibus, Deum tantum exoretis et laudetis.

I have arrived in France, with the grace of God, safe and sound. I have been recieved by the king not contrary to my expectations, Furthemore, I do not doubt in the least that all will succed according to my wishes and that it will not take long φ h λ n M \varkappa M t ρ y ψ y 4 n ψ δ n y M ρ t y δ δ n 7 ψ t y n t λ 9 2 λ t 3 y n δ ρ 2 ψ ψ but you yourself know that the kind of work like mine begins with more difficulty so that better decisions can be made. Because of this, enough to you, and enough to all closest to me, only pray and give thanks to God.

As much as we can gather from all this, Antun presented a proposition to Isabela the Queen of Transylvania which proved fruitful, yet it took some time to come to a final decision (if we have interpreted the meaning of the verb *consulere* correctly). Meanwhile hatred between the two princes proved a hindrance to this. If one of them was the King of France Francis I, the other would have to Karl V (1500-58, emeperor of the Holy Roman Empire since 1589), who was his rival for dominance in Europe during the course of his life. We cannot be entirely sure whether Francis's preoccupation with the conflict with Karl was what hindered the expected result or whether the emperor was directly aganist it.

As a diplomat, Antun, with some caution, is awaiting the semingly assured success in his embassy service to Francis I (the King of France since 1515), only that we do not know what this success entails. In a long and warm letter to his friend Carlo Capelli he recounts the same task in hindsight, just after he had completed it, in almost the same words, yet with such generality and inscrutability that it is impossible to discern the exact content (Verancsics 6, 186).

Scito igitur, me ex Galliis incolumem Venetias rediisse, et hoc biduo, publicis rebus exigentibus, in Transsylvaniam promoturum. Omnia in eo regno mihi non omnino inprospere successerunt,



nostraeque factioni, fortasse etiam adversae, brevi idque facile consultum iri sperarem, si odia sua duo principes ad catastrophen venire jam aliquando paterentur...

You must know, thus, that I have returned form Gaul to Venice safe and sound, and that I will in two days, as this is demanded of me by public service, to continue into Transylvania. All has succeeded for me and my side almost according to all expectations, prehaps for the other side as well, so I am hoping that all will be swiftly decided with ease, should the two princes finally allow their hatred to come to an end...^[24]

The theme of the Transylvanian-French discussions might have concerned Antun seeking assistance against the Turks; towards the end of the 1530s, his uncle, the Transylvanian bishop Ivan Statilić (1528-1542), found himself in the same place with the same task (Novaković – Vratović, 46). Yet it is equally possible that what was discussed was assistance for the Transylvanian initiative towards independence from Austria and its ruler, Karl's brother Ferdinand of Habsburg. One must also keep Protestantism in mind, which had become a problem, not only in Karl's Germany but also in Francis's France and Antun's Transylvania.

In hope of an answer, what remains for us is to dedicate ourselves with more time and imagination to unraveling this mystery.

Conclusion

After four and a half centuries, the veil has been removed from the secret messages of Mihovil Vrančić. Attention was directed toward them for the first time after the publication of the Hungarian edition of the collected works of Antun Vrančić in the 19th century. In Croatia attention has been directed only recently to the fact that, in the National University Library in Zagreb, one of Antun's letters contains a hidden sentence written in code. Also, it has been suggested that it might be written in the characters of the *bosančica* script. While preparing the scholarly edition of the familial correspondence of Antun Vrančić, which was also part of her doctoral dissertation, the co-author of this paper discovered a letter by Mihovil, which likewise contains a passage in code and which had remained unknown until now. When she came upon the discovery she turned to her supervisor for assistance – the second author of this paper.



Our attempt to decipher this passage with the aid of the *bosančica* script gave no results. We concluded that the *bosančica* script does not play a part here, and that it is certain that Mihovil used a different system of signs than Antun. Attention was directed to the shortest of Mihovil's passages, which provided us with the hope that by calling on the context of these letters and Latin case endings for assistance we would be able to recognize certain signs. However, this proved unsuccessful as did our attempt to recognize the term for a certain currency in front of the Arabic numeral 400 in the second passage.

Only a systematic approach provided us with the solution: by calculating the frequency of signs in the coded passages as well as those in the parts of the text written in the Latin and Croatian alphabet. A comparison confirmed that the secret portions of the text were most probably written in Latin. We grasped something that would prove conclusive when we realized the fact that, in Latin, there is a semi-compulsory connection between the signs q and u and also by having found the corresponding combination among the signs in code. We had yet to calculate and combine the frequency of double letters in the "bosančica" and the Latin script to secure our foundations for recognizing the first word. It turned out to be possessio hidden in the code ?yttattgy. The remaining text almost deciphered itself.

The system of encoding and its probable paradigm have also been described. The majority of signs originate from the alphabet, including some Arabic numerals, some Greek signs and some from the *bosančica* script; only that their phonetic quality has been changed. It is interesting that all except one sign can be found in the Polygraphia, a book by the German cryptographer Trithemius dating to the beginning of the 16th century. It is even more interesting that the phonetic quality of a third of Mihovil's signs concur with the qualities found in Trithemius' alphabet. It would not be surprising that the Vrančić brothers used this or a similar guidebook, seeing that cryptography was a compulsory means of communicating diplomatic and business matters in the 16th century, and it was certain that it comprised a part of Antun's diplomatic education.

The content of these secret messages was translated and commented primarily with the aid of certain facts from the further correspondence of the brothers from Šibenik. Mihovil would report to Antun about economic opportunities for investing in and purchasing real estate in Šibenik and also on the islands of Prvić and Krapanj. It is unclear what the business matters in Split were, in which



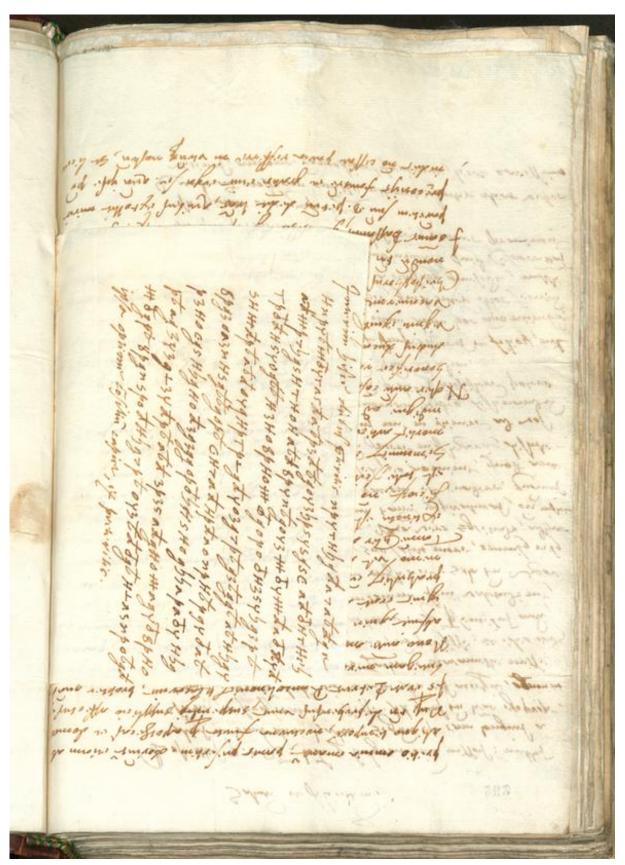
Mihovil apparently negotiated with a person in the upper echelons of the church. The reason why he made recourse to code was obviously to keep this business matter a secret, and certainly to get there first before any other interested parties. Mihovil's letters to Antun were sent from Šibenik at the end of 1558 and the beginning of 1559. The investments began after Antun was promoted to the position of Bishop of Eger, by Ferdinand I of Habsburg for his long and difficult embassy service as ambassador with the Turks in Constantinople.

In two of the messages personal safety is the predominant theme. Mihovil warns his brother that the two Lukočić brothers are now heading toward him in Hungary, and they have the reputation of being utterly dishonorable and dangerous men.

Antun's letter concerning his expectations of diplomatic success at the court of the French King Francis I remains a mystery, where he, at the beginning of his career, was an ambassador of Isabela the Queen of Transylvania. The Vrančić brothers were so cautious that each brother used his own system of code. Unfortunately, having cracked Mihovil's code in no way assists in uncovering Antun's message, which is itself too brief for any other means to be of assistance.

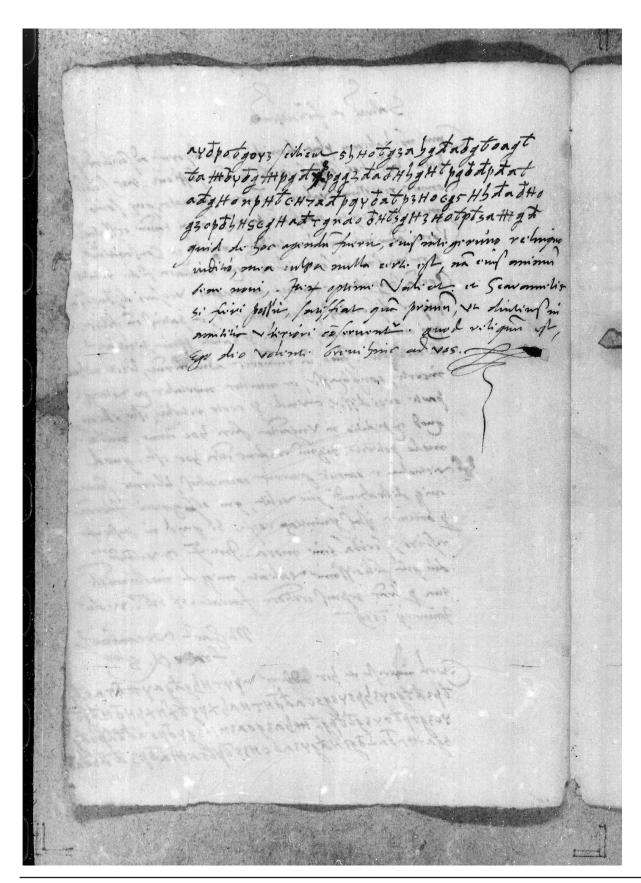
Other than this challenge, there is much space open for further illuminating the theory and practice of cryptography in the early modern period and how the code of the Vrančić brothers relates to it. As far as the content is concerned, we need to place the *realia* from Mihovil's passage in a more precise economic and social context, so that we can gain the larger picture of an episode in the life of this illustrious family from Šibenik.





Appendix 8 - Note added to Mihovil's letter from 9 February 1559 (Széchenyi 262v)







Appendix 7 - Mihovil's letter from 11 January 1559 (Széchenyi? 57v)



1559 . jom . 11. 57 Salun on fickerstim. Jum no baliam plur dimidio bova aporir an ferilimon hafer har ber the firip, it your fufficien nor filies move in esceptu, naufour parit, brin temm cellalma Porro admini am hor widen, guida ex Conformino sivinter Emissi feat; ighin, qui sentara fich. vilile Porta Importoris - swearf, in magnis - vivani distribis proper dicordial filios inter for, in paris en filis. qui mitu mortis, ommir & salit. your, simon. di eveniren. Jose in rumeres - wim vin, lier alfue merchi, conflicto, in multor mortalist to way park weidiffer and g were netwhi, if whim qued expeditio in Vingovier five box anno, melle mode polivic. signi indinstina for it, good enig tighationdi gen verlit, gui elfignen furan I sommer ifted priming : 324. 5: grid in poperat referire, ferita sim mora. Junit 3. v. 2 min din gun filiciffimi valiar, migg di moder mich. sun g har siping withor frien it sit on this Jonnary 1559 Mifan 2 Novamint tp3 ttgoy3 bp545g5c ad THTHAG xpg 6xH+pH HA Yozgratayzgtapgt mbazgoaznusgyapo nattap sgattadas dys Hagy 3 ab cH35 Totsattabys at



Appendix 6 - Mihovil's letter from 11 January 1559 (Széchenyi? 57r)



242 my for aline fine march reasons as one of fac of bonest of nobiling, is magis quest problemate of in is mis to find of gomerali- opposition on Vongaria, him fich , ve himbe spine, medin but good Zongnenf ift offinfing in-blin me li met rough spirate of nation, males viening, pur non fate vyuso vivi stituine, sol or minution a fugal or more alis from no de ifto someregard it ingenirore mifi and a form from the I orro HTHS AHOCHS STATAROS AZ BAOCHT A Tyb tagpy az go gy Hz 3 nt sportt why now por agyt HH Hata & Hadopt na THE Hay aling spant H, passata Ho daty 3 H & D. tythlyta & ginn 3 aptad tyly y Tho agpt phats hatg SHOTEN trophattacas y 3Hoteooko youthat totam forman HapHatgo = 43 4 t 8/ Hndgs La3 Ay t Thy Jasyt gspasyate by syrpt at 4+ 45 tyrpo spoonings to ag HANZ tot from p.v. D. Spondal in vi evibre mifi, guid agove diton gumis criam ifthe quit ammi babant me Mus reme at how o. v. 73. secole on a frister a de mo alla Chiamo the ferite, forthe well, our whiter fiers polit, si vine notine qui produce corte ogo que prim how not ale son stimes, it conspicte one got milian maje orbation, none didoris definition quarie in her doner resperage for a mes defedires fatiffreven derveni, co magic quad a ver Agricor or fribe id pe po Lout no more aline man the site ovi Domerus from proint most a file profitation on Lines one ils me in Vinn date, nam ific mir retinaentis, no ita timor NE no libere peffine percent volitation for levere comodis D.V. F ino it omnier neshed. The Ma in de hoveling prints qui convince dem queli di pichi coni pro vevo in suco fui le quichere ? si ad rom facionda minufapine fuirim 272.



Appendix 5 - Mihovil's letter from 27 December 1558 (Széchenyi 242r)



Down vera rooms du parismi ed hier Mynimuf se qued A Goods bomily brom you not move from se still non the I viligion of powers offirm valet, me fortiles, at accide in D. v. 73 1 m om on, our mondate, vifus of to olavi of magno mimo tollerar fortum With simm on a Columnodo Inche fed win pluver mi gul smitty you officer whise it inwines som over They alim ever nouved mich thela ami in work offer mis for longer whim mility in frame les forminist whiar compile Vind myr pawiffine frager day from the acommunt. in whis among the sin ve a long to move where my i ring whim timper is occasis of com. again promont from mer when mer profin in Alwan is from sum is borts, why tow. or son ors is, no out provide nue town done



Appendix 4 - Mihovil's letter from 27 December 1558 (Széchenyi 241v)



18 dect. 27. Salus a Librar 241 paulo tou dem fireba and D. V. Ding our par more, in 190 promitiva, in canta oft, good rove cryli boming fine venica proprofestion, qui our true to punte penteroporer, evede polline. quining winn migdle mife comiffer at monifil wimpon subtractivity. The min longer sight in in her prinombute in ore confishions, bromber rom agare dier. Spoken profestor of in diagonite in mulii verbis in andien am formand or est musta comité tombé lie mis remonder, SizaHytatzyreHynBatspyJpoHbtatysana Framgtry HH H toonas Japaty toffe nomini in word bar frommen of alia gove in it migolist, it heing it thorm liberting conseiffer the 4 posnoto spay stathed a mo minm arrigenda Hoy to at. illa and que olli ox 5436 the tory Hybridge not the an Hytatatat gt 2 TH de 46 Quanto a borto almit water nichai Liffine, ver power velilis magno cofface mis a principio, ca comm fina galere poffermore som in marmine liffine fabrico se poffer brimowing with oster finingereguita pluf minu florenost ou grule pefor sol evan. nom mineris am vendere mille prets with, our ducates quadringitis it allow min beafords at enfichet iller ont portaon my afirmane vom firmen out wond in one and hite, hier up aforest, no mised mornigue acquire monafire acquire Daystab # HARAOS & HHHH3 f with in grigo iller mutoffice 5. minimam toma down of mile expert in some and down pances mutalis comoribus, in com apinion remy way no ille gou it freeze tafitures in dis opportation Ou mysy Hatnogampaggises y totas ys to spitty by sait ползпинаторанзинародный по потом Jomism of intractabile 271



Appendix 3 - Mihovil's letter from 27 December 1558 (Széchenyi 241v)



M. fol Lat. N.J. M. W.R. 254 1236 Hem der domine offen Salut or firmiliest notwent Come The reports comigin om feribere bufer Wart, or probindaries omma office megainerm, profestion mil sprinter semistr sufficien in pro mer Conficere das of men non smood offe a vineral medium of a plumin defideren of ving beat, as going labelif by valignes sommis philosoming or from a flowing of w for upon omme Gafir morning quel him. I mili quel famir vin somi lande dignis abidnit out our affinger no de fundim to quitufter gur forfa feir defichern De myslis tragminos mil fir fir off vin fimile sowone Juniong thing you fine my open on . De Win de Gafforno, med volis In & brown toming Clavery, I primpl michel in welight for my books britame for too. Joh or whi planes ris while a guing tou prosiper profler. In guily tolation albut forstood mymo, plan in I mile foright do prime. Some mount inf. mysten Pagafina milit in polit, via ve poment om gustishi driman, in on in if you, in your on A.v. 27 is firmmin & har. Life omenio lastoni, magre covir for coloring fring from will amight in profit fant. mie momine. In whigh you do is . R. Sophim. Valore de que Silvenio - die 6. Nombrig ахуптатитизучта в жернонти mign.20 an good national p3 40743 Hotpooto idyl photo Hogbbangs Haty o L. regionion of for pHhat Hydro HaspHagoxpuntgsLaster



Appendix 2 - Mihovil's letter from 6 November 1558 (Széchenyi 2363)

my falur to in famaa Dis munor salum purm, Abbac & sous Citia mia sniam in 30 why the dubits alig gross ora as usta mi suoressura, mod muthi abrice, 16344002449, 800 sai sino mi-u est, principia impossor, Ew many am a queda bandivio ano batifor de Jah . 1. sole ques to benetis udo ridderiaut more upi pmi sas heer , aut I home ipm prove fishinant out us Lapsi- indir amove- DEin - nd die Phituta amb Saliandir ab acception Cambij, no



Appendix 1- Antun's Letter from 21 January 1546 (NSK 1, 1r)

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^[1] Translation of article by Sorić (49-75).

^[2] "Következik nehány sor cryptograph irással." ("What follows are a number of lines written in code"); "Néhány cryptograph szó, valamint alantabb is, scintén pontokkal jelelve." ("A number of words written in code, here and a little lower in the text, also marked by punctuation"); "A levélhez külön papiroson néhäny cryptograph sor van mellékelve, e bevezetéssel: Interim, hisce diebus praeteristis, s e zárszavakkal: ipsa optime capiet consilium ex praeteritis." ("A number of lines written in code have been added to this letter on a separate piece of paper, with the following introduction: Interim, hisce diebus praeteritis, and with these concluding words: ipsa optime capiet consilium ex praeteritis.") – We give our most sincere thanks to Krešimir Međeral who translated the portions of the text in Hungarian that were important for our paper.

letters by Mihovil to Antun (published in Verancsics; unpublished letters: NSK; Mihovil's letter from 11 January 1559 was unpublished until recently: location unknown, most likely the Széchenyi library). Mihovil's letters were composed during the years 1538 to 1569 with an occasional lapse and cover a shorter period. We can state with certainty that those are not all the letters that the brothers exchanged amongst themselves, and the evidence for this can be found in many passages in the letters that Mihovil sent to Antun. We will cite the letter from January 1564 as an example in which Mihovil mentions twice that he had received Antun's letter: Litterae, quas per dominum Petrum Cippicum missas accepi ... Ad eius posteriores litteras, quas per Ludouicum Celium missas accepi ... ("The letter which I have received, sent by way of Petar Cippicus..."; "To your letter which I have received, by way of Ludovik Celius..."). Unfortunately, no letters written between the years 1559 to 1556 by Antun have survived, and from the above citations, it is evident that the brothers corresponded during those years.

^[4] *Viz* eg. The letter in the Séchenyi Library (193r), marked as *V. A. M. VII. K. 333 l (CXXI)*, which should be read as *Verancius Antonius, Monumenta*, *VII, kötet* (*volume*), *333 lapja* (page) (letter no.) *CXXI*.

^[5] The letter from Constantinople from 1 July 1555: cum quibusdam scriptis (NSK 2, Ir); from Vienna



17 October 1568: cum scriptis meis ; quedam scripta mea ziffris exarata (NSK 6, 1r) and from 17 June 1568: scriptorum meorum (NSK 9, lv.)

^[6] Many thanks to Slavomir Sambunjak from the Department of Croatian and Slavic languages for his contribution and readiness to assist us, which, although a step forward, proved to be an incomplete answer.

[7] Although there are earlier Egyptian and Indian examples that are extant, it is most interesting to us that Caesar used a form of coded writing when communicating with his generals. He achieved this by moving the value of the letters in the alphabet three spaces to the right. Thus a was written as d, b as e and so on. Furthermore, Arabic experts especially contributed to cryptography and in the Occident there was a rapid development with the growth of Italian cities and mercantile activity in the 13th century. In the second half of the 14th century, Gabrieli de Lavinde, the secretary of Pope Clement VII, produced a guide for the Pope's secret correspondence in which he combined the signs for certain letters in the alphabet, and even in entire words, while also creating signs that were meaningless which were to be used as a distraction. In the 16th century, the Holy See and the secular powers would send letters of classified information in code to papal clerics and ambassadors. In the middle of this century, the majority of Italian cities employed professional code-breakers. Venice itself had employed three. Methods of creating codes became more and more elaborate and difficult to break. Judging from the title it seems that the dissertation from ???????? is related with our theme. Yet we found out about this when it was too late. Compare also Julianna Katona. Many thanks to our colleague Branko Jozić for informing us about this work of scholarship.

^[8] A similar work by Trimethius, *Steganographia*, was placed on the *Indeks librorum prohibitorum* not long after it was published under the suspicion that it was a book of magic. The third book of the *Stegnographia* remained undeciphered for centuries. Jim Reeds resolved the enigma and freed the original author of these charges.

^[9] Four times in a letter from 27 December 1558 (Széchenyi 241r); one in a letter from 11 January 1559, Szechenyi?, 57v); five times in a leaflet from 11 February 1559 (Szechenyi 263r).



^[10] During the investigation of Vrančić's manuscript legacy, in October 2014 in the Séchényi library in Budapest, a piece of writing was found which deals with the coded writing which we mentioned in this paper and gives the corresponding letters in Latin. Thus, on the one hand, we were disappointed because we had taken the more difficult path than was needed, and on the other hand, we were pleased that our assertions were proven correct. The matter of this find will be elaborated in another paper.

^[11] The number 7 is the same as in the letter from 27 December 1558 (Szechenyi 241v): *ad 70 domus*; *dazdaros 70*. For the number 3 compare the letter from 28 July 1556, the last passage (Széchenyi 283r): *noluit fl.3*.

[12] Cf. Figures 3 and 4.

De negotio Traguriensi nihil fit. Hic offertur simile per parentem iuuenis illius, qui fuit nuper apud eam, silicet (!) Petrum de Bassano, modo velit domination vestra reuerendissima. Breui tamen clarus per proximos nuncios. ("Nothing will come out of the business in Trogir. Here the father of that young who had recently visited you, namely Petar de Bassano, is offering something similar, only if your most honoured lordship desires so. Soon some clarifications, by way of the first messengers"); Szechenyi 236r; v. i, Verancsics 257.

[14] Cf. per. eg. the list of bookkeepers from Zadar at: http://arhinet.arhiv.hr/_Generated /Pages/ArhivskeJedinice.PublicDetails.aspx?ItemId=15138 (29 November 2012).

[15] Many thanks to our colleagues Bratislav Lučin, Branko Jozić and most of all Emil Hilje for a particularly lucid suggestion as well as for their readiness to assist us and their useful advice.

[16] He mentioned it in the previous letter; see text in note 36.

"...circa negotuim Ragusinum nihil expeditur... ("...nothing is being resolved concerning the business in Dubrovnik..."); Verancsics 258.

^[18] Antun wrote about his gifts in greater detail in 1568: *De rebus aliis, ego vobis ac magnifico* | domino saptano Michaeli attuli Tur | cica munuscula, non solum coria | cea, sed etiam agrentea, credoque, | quod ei non minus placebunt, quam quae | accaepit a vobis in reditu vestro. | Sunt autem equestria et breui | ad vos perferrentur, vna cum | talaribus duabus, quibus me Tur | ca contexit . ("As far as other things are concerned, I have brought a few small Turkish gifts for the most magnificent



captain Mihovil, not only of leather but of silver, and so I believe that he will like them no less than those gifts which he received from you upon your return. They are of the equestrian sort and they will be brought to you shortly with two habits that a Turk had tailored for me"); NSK 8, 2v.

regards to your most honoured lordship, that he said that I bring my son Faust upon my return. And I myself have wanted to do the same, so that he will gain a pure knowledge from a tender age and learn languages; he is already big enough, mature enough for the venture. Of an alert mind, a healthy and truly noble appearance, neither stupid nor with I have decided to take him with me, if the offer by your most malicious of local habits."); Verancsics 295.

[20] Compare: emi in Cernice (...) duas domunculas lapideas (...) et partem hortus [!], quae nondum solvi . ("I have bought two stone houses in Crnica (...) and part of a garden which I still have not paid for."); Verancsics 9, 53.

emi etiam totam possesionem Lucocich in insula Pernich [!], his de causis, quod scilicet erat nostrae contugua; sed hoc nihil esset, magis autem, quod et olivetum ficetum habeat egregium; potissimum vero, quod est possesio nostra olim avitica, et quo din ea domo parens noster natus sit. ("I bought the entire Lukočić property on the island of Prvić for the following reasons: because it close to our own. But this is nothing really, for moreover, it has excellent olive grove and fig grove, and most importantly, it once belonged to our grandfather and because our father was born in that house."

Verancsics,

9,

53.

*A measure for a stretch of land in medieval Croatia (Dalmatia in particular) of 2370 m2.



Ceterum Provian szigetiben vagyon eladó egy szép ház szűleivel egyetemben, kinek mása nincsen ott; az házzal ípitésel, kerttel, gyiműcsivel, csatornakúttal és helylyel, id est, Scruanovics Péterí ki volt; de nem hiszöm, hogy annye pínznek szerit tehetem mennyét kírnek, mert tübb kelletik nigyedfél száz forintnál letennyi írette; de csak az ház odvarával és kertvel jobb kétszáz forintnál, anekül vagyon hetven mirtik fülde. Azám gonyai mind szőlő hasznos, olajmolnával. Quare summopere dominationem vestram reverendissimam rogo et supplico, ut huic negotio suppetias ferat, et quidem mature, si pro eius ratione fieri poterit, ne tam nobilis res nobis elabatur; ego tamen omnibus artibus, quibus potero, negotium differam ad responsum eiusdem vestre reverendissime dominationis, mert az a ki eladja csak engemet várt.

("Otherwise, there is a beautiful house for sale on the island of Prvić, together with a vineyard, that is without compare there, with the house itself, a garden, fruit trees, a cistern and space, that is, which once belonged to Petar Skruanović; but I do not believe I can do this due to the amount they are asking, for the value needed for it is three hundred and fifty forints, and yet the house with its courtyard and garden is itself worth more than two hundred forints, and without them there is seventy acres of land. Besides this, all the vineyards will yield, (and there is also available) and olive press. Because of this I greatly beseech your most honoured lordship to provide the support for this transaction, and this soon, and if possible according to your estimate, so that such a valuable thing should not escape. Because he who has been selling it has been waiting for me only") (Verancsics 7, 244).

^[23] In Mihovil's letter from the 9 February 1559, there is mention made of one Petar Rankolinović who was hanged as punishment for theft (Verancsics 7, 334).

^[24] We will cite a somewhat different and certainly well grounded suggestion by Bratislav Lučin as a translation for this passage of the text: "All my successes in this kingdom have been quite advantageous, and I hope that things will be quickly resolved for our, and perhaps for the other party. Once the two princes..."