The Exotic Croatian Glagolitic Alphabet

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Dedicated to the memory of Gordan Lederer (1958–1991)

Just for fun, one day I decided to write my own name in Glagolitic letters. I was very proud of the result: III WALLEY WITHOUT Creating TEX Prof. Donald Knuth probably would have never had opportunity to see his name written as

(The $h = L_d$ was dropped because it is not pronounced.)

The origins of the Croatian Glagolitic alphabet are still mysterious. The only thing we can state for sure is that it has existed in my homeland for more than a thousand years, i.e. since the ninth century. Croats have been living in their homeland since the seventh century and they were the first among Slavs to be Christianized. It used to be generally regarded that the Glagolitic alphabet was created by St. Cyrill, a Greek apostle from Thessaloniki, but now there exist several very different theories about its origins. However, the fact that Croats had already been Christianized when St. Cyrill was born (825), together with the unique multiorthographic tradition of written documents (Glagolitic, Latin, Cyrillic) in medieval Croatia, and above all, more than a thousand years' history of Glagolitic script in Croatia, seem to prove that the origins of Glagolitic script are authentically Croatian.

One of the earliest Glagolitic inscriptions we know of in Croatia can be seen on a stone monument found in the church of St. Lucy near the city of Bashka on the island of Krk, dating back to around 1100 AD. It is the oldest known monument written in my native tongue which mentions the name of Croatia (i.e. Hrvatska) and the name of the Croatian king Zvonimir.

Through the Glagolitic alphabet Croats kept in touch with other European cultures of the Middle Ages. For example, in 1347 the famous Czech king Charles IV established a Glagolitic convent near Prague, where Croatian priests were teaching the Glagolitic alphabet. Similarly, the Polish king Wladislav II Yagiell organized (in 1390) a Glagolitic convent near Krakow.

Especially interesting is the story of the old Glagolitic book handwritten on the island of Krk in Croatia, that somehow came from Prague to Reims in France. There, for centuries afterwards, French kings were sworn in by putting their hands on this holy book (it still exists).

In 1248, by the decree of Pope Innocent IV, Croats were allowed to practise Glagolitic liturgy (i.e. early Croatian), using holy books written in Glagolitic instead of Latin or Greek. This decision of the Pope was unique in medieval Europe—Croats were the only nation in Europe who were allowed to use their own language in liturgy instead of Latin.

Even today the Glagolitic liturgy is preserved in some parts of Croatia, with priests still singing in early Croatian language as in St. Cyrill's time (the ninth century!). The Glagolitic alphabet has probably been our most important cultural monument for thirteen centuries of difficult, but rich life in Europe.

As for the name of Croatia, let me mention by the way that the French and German names for tie—cravate and die Krawate—were coined from it. It would take us too far from our purpose to tell in detail this very interesting story.

There are thousands of monuments, pergament letters and books written in the Glagolitic alphabet. One of the most beautiful certainly is "Misal" (or Maahff), printed in 1483, most probably in the Croatian town of Kosinj, only 37 years after Gutenberg's invention, or only six years after the first printed books appeared in Paris and Venice, or 70 years before the first book was printed in Like Gutenberg's Bible, it has many Unfortunately, in 1493 there was a ligatures. penetration of the Turkish Ottoman Empire, which was stopped in Croatia (until the XIXth century!). This did not allow a normal development of printing as in other parts of Europe. Despite very difficult conditions many Glagolitic documents bear witness to surprisingly rich cultural activity in medieval Croatia, especially on the island of Krk and the Istrian penisula.

Glagolitic books for Croatian priests were also printed in Venice, which even had two Glagolitic churches at one time, then in Rome. With the help of Croatian protestants books were printed in Wittenberg and Urach in Germany. One of the founders of protestantism in Europe was the Croatian philosopher Flacius Illiricus. The Glagolitic alphabet was also taught in the city of Dubrovnik. Besides in Croatia, Croatian books and manuscripts written in the Glagolitic alphabet are now kept in Rome, Sankt Petersburg, Berlin, Vienna, Innsbruck, Moscow, Copenhagen, London, Oxford, Constantinople, Paris, Tours, New York, Krakow, Porto, Budapest, Trento, Padova, Sienna, and some other places.

There are a few Glagolitic letters that came from Greek, like Φ (f), \Im (e); the letter \coprod (sh) came

from Hebrew. You will also find these letters in Cyrillic script, created later by the followers of St. Method in Bulgaria on the basis of the Greek uncial script.

Of course, one can find some similarities with other Cyrillic and roman letters, but the difference is considerable. It is interesting to note that the Glagolitic $A = \hat{h}$ is almost the same as the Ethiopian 'ha'. I learned that in a very interesting article [1].

The complete font, together with numerical values, looks like this:

-					
ф	Α	1	B	O	80
Ш	В	2	П	P	90
Ш	V	3	P	R	100
Z 1	\mathbf{G}	4	Я	S	200
Ш	D	5	m	\mathbf{T}	300
Э	\mathbf{E}	6	æ	U	400
Ě	Ž	7	Φ	F	500
出	$\mathbf{D}\mathbf{z}$	8	ι	H	600
βa	${f z}$	9	뽀	Ot	700
四	Iže	10	쌈	$\check{\mathrm{S}}\mathrm{t},\check{\mathrm{S}}\acute{\mathrm{c}},\check{\mathrm{C}}$	800
8	I	20	${f V}$	\mathbf{C}	900
NP	\mathbf{J}	30	置	Č	1000
Z,	K	40	Ш	Š	2000
<u> </u>	\mathbf{L}	50	. B	Ja, Je	
M	M	60	贝	m Ju	
P	N	70			

It was created according to the above mentioned "Misal" from 1483. Note that the letter Υ = ch looks rather 'chinese'. From the table we see that some of the symbols had only numerical values, like Υ = 10.

The letters were also assigned appropriate numerical values, similarly to the old Greek script. For example the year 1254 could have been written as $\mathfrak{M} \cdot \mathfrak{A} \cdot \mathfrak{M} \cdot \mathfrak{A} \cdot \mathfrak{A}$. Numbers from 11 to 19 were written in the reverse order, for instance $\mathfrak{PT} = 12$. What do you say about the following arithmetic:

$$\mathbf{L} + \mathbf{L} = \mathbf{L} \mathbf{T}, \qquad \mathbf{L} + \mathbf{L} \mathbf{D} = \mathbf{L} \mathbf{L} \mathbf{C}.$$

Among many interesting ligatures let me mention a 'three storey m' = \$\frac{1}{2}\text{T}\$, which was used for [ml] (our language is not easy—remember the tongue-twisting island Krk), and 'double i' = \$\frac{1}{2}\text{R}\$ for [ili], which I like very much. Some of the ligatures are represented on the following list:

đπ	am	圃	jutr	agn.	mž	IIK	olju
阳	bl	፟	ko	₩,	ml	Ë	ot
Ę	bo	ďЪ	li	₩	$\mathrm{ml}\check{\mathrm{c}}$	ηđb	pl
Ē	br	R	lo	Ŋ	mo	lgp.	povr
क्री	il	Mu	lt		ms	පු	so
ХX	ili	ЩD	lv	Ą	no	anti	tvr
SD	it		lju	TK	ol	ЩЬ	vod
頂	jur	胍	ljud	邥	oli	₽G	zr

A few words about the TEX-community in Croatia. It is rather widespread. Many students prepare their graduation works using TEX, while among mathematicians it has become a routine means of creating documents. However, we still lack some basic literature, and we are still not organized as in other countries. We hope this will improve through collaboration with your excellent journal.

I would be pleased to contact anyone wishing to learn more about the Glagolitic alphabet. Let me take the opportunity to illustrate it by greeting my friends and colleagues in the USA who know Croatian:

րցետեմա ծածա Հանդում անագրության անագրության անագրության անագրության անագրության անագրության անագրության անագր

I would like to thank Sonja Šterc (Zagreb) and Barbara Beeton for help during the preparation of this article.

References

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