

# THE KNOT SCRIPT – THE LOST WRITING SYSTEM OF THE LATVIAN LANGUAGE

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**Abstract.** *The article analyses a writing system of the Latvian language that has been scarcely researched before. The evidence of the usage of the knot script and song clews is present in the Latvian folklore, although it has been commonly considered as a metaphor. At the beginning of the 20th century there were individuals still using it prior to the conventional literacy increase due to the general education. Similar knot scripts can be found in several cultures around the globe. The article encompasses a study of previous researches and evidence in periodicals, Latvian community in Lithuania, education of commoners in Latvia, reciprocal comparison of the Latvian knot script writing systems, interview with a contemporary witness and experiment on reconstruction of the Latvian knot script.*

**Keywords:** *clew, folk songs, knot alphabet, knot records, knot script, knot writing, Latvia, Latvian language, Lithuania, quipu, song ball, song clew, Vismantai, writing system, yarn ball.*

## Introduction

The Latvian people are often referred to as the Singing Nation. The Latvian Song and Dance Festival tradition has been uniting tens of thousands of voices since 1873, notably during the Singing Revolution that resulted in the restoration of independence of the Republic of Latvia, and thereby has been included in the UNESCO Intangible Cultural Heritage list since 2008. The Cabinet of Folksongs, made in 1880 comprises 268 815 leaflets, each having a Latvian folk song handwritten, systematized and advisedly batched in its relevant drawer of a theme-wise appropriate category by the prominent Latvian folklorist Krišjānis Barons (1835-1923), and was inscribed on the UNESCO Memory of the World Register in 2001 (LFK, 2005). Until intellectuals' initiative of collecting the national folklore during the New Latvians' Movement (lat. *jaunlatvieši*) between 1850s and 1880s, attempts of recording Latvian oral tradition in written form were scarcely exercised. There are 3 million units collected in the Archives of Latvian Folklore up to now, approx. 1 million among them are the Latvian folk songs having been summarized and published in 14 volumes (LFMI, 2016). While some Latvian funeral folk songs refer to the Early Iron Age (1-400 AD), others (LD 27796.0-9) even convey a relic from the tied up flexed burial practices that are exclusively peculiar to the Corded Ware culture during the Late Neolithic Period in Latvia (2900-1800 BC) (Straubergs, 1949, p.16-17; Dārziņš, 1965; LNVM, 2016).

Could such an immense amount of knowledge have been transmitted throughout countless generations entirely by an oral tradition until the very 16th

century when alphabet writing system was finally introduced by German missionaries to put a Latvian text on the paper for the first time? Or, conceivably, there existed other means than a conventional writing system, yet sophisticated enough to record and store the information?

The aforementioned enigma has been occupying not only my mind for a long period of time until a recent discovery of a paragraph in the book *The Nature of Language* by Sarma Kļaviņa (1941-) that provided me a clue into a new perspective I had not been aware of before.

The aim of the research is to carry out a study on the knot script, and, in particular, as a writing system of Latvian language, to clarify the history and circumstances of application, its types and structure by researching textual evidence, tracing a contemporary witness and conducting a probative experiment on reconstruction.

The research methods applied in this article are quantitative and qualitative content analysis, interview and experiment.

### **Theoretical Framework**

Indirect references to the ancient scripts of the inhabitants of Latvia – Letigallians, Selonians, Semigallians, Curonians and Livs, are provided by the folklore. For instance, there are evidences of the song clews (lat. *dziesmu kamols*), bast containers (lat. *vācele*) and dowry chests (lat. *pūrs*) i.e. the knot script (lat. *mezglu raksti*) being present in Latvian folk songs. Despite the aforesaid references are commonly considered as mere metaphors, there exist not a few evidences of the usage of knots, worsteds, threads and clews for recording the knowledge and events as well as magical purpose likewise. Analogous knotted cords emerge in numerous ancient cultures across the globe – the *quipu* for accounting until 19th century in the Inca Empire, the *jié shéng* named in the Chapter 80 of the *Dàodéjīng* “I would make the people return to the use of knotted cords, instead of the written characters” by Laozi in China, the head tax calculator *warazan* from 15th century in Japan until 1903 and others (Kļaviņa, 1997, p.75, 64; Legge, 1891, p.122; Nukata, 1993). Although there are some references in newspapers, apparently there is hardly any comprehensive research done with the focus on the Latvian knot script other than perceiving the topic of interest merely as a metaphor or symbolism.

### **Methodological Framework**

Undergoing the Master’s thesis research, on behalf of Kārlis Tomariņš (1923-) I was given an opportunity to study and analyze the doctoral dissertation written in 1985 by Edgars Jundzis (1907-1986) on Latvian individuals in Lithuania who had sustained their knot script literacy. My exploration for a

contemporary adept in Latvia followed. I providentially found and managed to interview Betija Strautniece (1930-) from Burtnieki, who has witnessed the usage and inherited the knowledge of the Latvian knot script in childhood from her grandmother. Study and analysis of historical sources, periodicals, scientific articles and the Cabinet of Folk Songs, interview with a contemporary witness, comparison of the Latvian knot scripts and experiment on reconstruction was conducted during the research for this article.

### **Findings: The knot script in periodicals**

Periodika.lv – the portal of periodicals of the Latvian National Digital Library of the National Library of Latvia was used to find references of the knot script in newspapers and other periodical media on March 30, 2016. Among other unrelated results there were 9 (duplicate and derived articles not included) relevant articles in Latvian, 2 in German and 1 in Russian found in total. Earliest articles in 1880, 1909 (in German), 1929 and 1938 (in Latvian) are about tying a knot in a handkerchief to remember things and the knot script originating in China 6000-7000 BC as well as its later expansion across Mexico, Peru and Inca where it reached the highest level of sophistication – the *quipu* – once being taught for Peru children likewise ABC for our children, however there is no relation to Latvia mentioned. Only starting from 1980s there are articles referring the knot script to Latvia (Periodika, 2016).

In the article *The song clew – knot script* by geologist and folklorist Viktors Grāvītis, there are direct references to the individual users and witnesses of the knot script in Latvia. Jūlija Ozoliņa (1875-1962) and her mother Liene Voits (1832-1924) who had been using a white yarn and multicolor knots tied in for making calendar of important events starting the year from Miķeļdiena (autumnal equinox), and songs were recorded by the knot script as well. Pauls Stradiņš (1896-1958) found that a baptism invitation for neighbors was written in the knot script. People from Kuldīga remember a midwife Grencene, being in her 70s around 1935, using old folk medicine methods – she kept a grey clew, around 10-15 cm in diameter, where she tied a knot after each delivery as a summary of her work, pleading the paper inconvenient. In the vicinity of Smiltene, rheumatism (lat. *dzirksts, džerkste*) was alleged curable by counting to 27 backwards with 27 knots tied in a [red] yarn. In Vārme village wart treatment was enforced by tying knots in yarn, as many as warts are, and throwing it backwards over the shoulder letting it rot away (Grāvītis, 1980). According to the Russian article *A Knot to Remember* by Alexandr Milovskiy, Grāvītis had collected also a testimony of a Liv woman Hermīne Zīberte (1890-?) from Košrags village, Western Latvia about her mother's calendar – a large red clew where each day of year was marked as a knot and holidays had even separate threads attached to the knots (Миловский, 1987). In 1985 an elderly local historian Jānis Kučers [1901-1989] in Zemītes,

Gulbene Municipality is said to have known about secrets of the ancient Latvia knot script. In 1988 the head of the Popov radio factory film amateur studio Dzintars Liepiņš has managed to save such a unique heritage as the knot script that was remembered by a man in Semigallian village, who is deceased by now. The 10-min documentary *Vismanti. Mezglu raksti* has been aired once on his owned TV *Annīņa* 11:00 April 26, 1995. On September 21, 1992 Dievturi congregation *Sidabrene* hosted an event *Latvian knot script* performed by Betija Strautniece (Periodika, 2016).

In 1993 the natural monuments' researcher Guntis Eniņš referred to the logography of Latvian ancestors stored in woolen shawls and sashes, engraved in sandstone rocks and the knot script wound in clews, which had been kept in the Latvian Academy of Sciences cabinets for some time. During Soviet era research of them was regarded discrepant to the leading role of the Russian language and communist ideals, furthermore, moths managed to infest the clews and some chief had ordered to throw them out. Theology professor Edgars Jundzis discovered a village called Vismantai in Lithuania, where Latvian community has been living in isolation, thus preserving the Latvian language. Jundzis met few last villagers who have been using the knot script even in the 20th century and brought some clews home. After Jundzis's death, his grandson Arno inherited grandfather's work along with the remains of the knot script clews and performed a topical seminar at the Latvian Nature and Monument Protection Society on February 9, 1993 (Eniņš, 1993). In 1996 a summary of Edgars Jundzis's research was published posthumously. If in Latvia the school education had been carried out for 300 years, the first school – a private school – in Vismantai was opened only in 1920 by the spinning wheel turner Adulfs Kelerts. However, after two winters the school was closed. One of the 9 schoolchildren, Jānis Briņķis [1912-1987] began to collect folklore of Vismantai villagers in 1928, paying attention particularly to the knot script (Jundzis, 1996). In 2011 an article *Vismantu Briņķis un mezglu raksti* by prof. Arnis Vīksne has been published on *LĀZA Apkārtraksts* Nr.159/160, but it is not currently accessible (Periodika, 2016).

### **Latvians in Lithuania**

The Livonian Rhymed Chronicle, covering the period 1180-1343, holds a detailed record on the papally sanctioned Northern Crusades campaigns against the non-Christian people in the Baltics – the last Christianized region in Europe. Stanzas 11427 – 11637 reveal the last standing Semigallian fortress Sidabrene (ger. *Sydobre*, lit. *Sidabrė*) after the other two – Rakte and Dobeles being burnt down. Intransigent resistance by the local people had hard times withstanding frequent plundering, sieges and fires caused by Teutonic knights. Eventually in 1290 Semigallians left Sidabrene and took refuge in Lithuania (Meyer, 1876). The bulla of Clemens V issued on June 19, 1310 in Avignon alleges that “more than a

hundred thousand [Semigallian] men and women had been cruelly driven into exile to the land of pagans [Lithuania]” (Dogiel, 1758). Henryk Łowmiański, however, estimates the total population of the 13th century Latvia as 145 000 and Lithuania 170 000 people (Łowmiański, 1931). Furthermore, Friedrich Benninghoven estimates the Semigallian population being only 17 000 – 24 500, as opposed to more numerous 22 000 – 31 000 Curonians and 50 000 – 70 000 Lettigallians (Benninghoven, 1965; Mugarēvičs, 1997). Taking into consideration the maintaining opposition to the crusaders for several decades and serious losses during the Latvian-Lithuanian joint freedom battles<sup>1</sup> of the 13th century, the overall number of Semigallians who managed to flee to Lithuania could hardly exceed 20 000 people.

Later, although almost assimilated into Lithuanians, certain Curonian, Semigallian and Selonian descendants persistently kept their ethnic identity in closed communities across the regions outside the Livonia i.e. the present-day Northern Lithuania and the Curonian Spit even until the 20th century. In 1836 there were 6341 Latvians settled, mostly by purchasing felled lands, however according to the Russian Imperial Census of 1897, already 35 188 Latvians were living in the territory of the Kaunas Governorate, near the border of the Kurzeme Governorate. Some more Latvian communities settled inland circa 1860 – notably in Papilė and Vismantai<sup>2</sup> of Šiauliai County (Jēkabsons, 2006). About 200 Latvians were living in Vismantai in 1940 (Brinķis, 1940). According to the Lithuanian Census conducted in 2001, 2955 Latvians and in 2011 – 2025 Latvians were living in Lithuania (Každailis, 2012, p.20).

In 1680s during the Swedish rule, parish schools were founded and elementary education for peasants began in Latvia’s Vidzeme. In nearly all cases, however, the language of instruction was German – a condition that did not change substantially until the 19th century (O’Connor, 2015, p.42). However, on August 23, 1738 the Latvian Teachers’ Seminary was established by Unitas Fratrum (lat. *Brāļu draudzes*) in Valmiera and based upon the modern principles of Comenius’s pedagogy. Diverse meetings were held as well, thus becoming a stronghold for education of Latvian commoners (Ceipe, 2011). The changes of the Latvians’ literacy rate over time as follows: 1897 85.72%, 1920 84.33%, 1925 89.21%, 1930 89.91%, 1935 92.09% and whole Latvia data – 1959 99.10%, 1989 99.45%, 2000 99.75%, 2011 99.90%. However, in Lithuania 32.64% were still illiterate in 1923 (Salnītis, 1938; Skujenieks, 1930; TGSE, 1979; UIS, 2011; Inga, 2014). Importantly, this is solely an alphabetic literacy statistical data.

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<sup>1</sup> e.g. the Battle of Saule (lat. *Saules kauja*, lit. *Saulės mūšis*) on September 22, 1236 which ended with victory over crusaders has been commemorated and declared as the Day of Baltic Unity in Latvia and Lithuania in 2000.

<sup>2</sup> Vismantai – the village name originates from Latvian “*visa manta*” – many Latvian settlers fled from serfdom in Kurzeme “with all their belongings”. (Skudra, 2014)

## Latvian knot script in Lithuania

The retired artist and ethnographer Jānis Krauksts [1896-?] with the literature specialist Līgotņu Jēkabs [1874-1942] in 1920-30s, while visiting Latvian communities in Lithuania, met around 60 y.o. Debeika, around 70 y.o. [Mikus] Briņķis [1863-1923] and around 80 y.o. Burba, who are all deceased now. They all had wooden tubs full of cherished knotted clews in the attic. The start point of the yarn was fixed to a peg which was in the middle of the clew. The clews were unwound first as the reading should start from the peg onward. There was ancestry, life events and song lyrics recorded in clews. However, there was a difference among individuals in terms of marking and tying techniques. To those who didn't know the knot script such clews may seem witchcraft related. Actually, the magic clews and magic yarns can be found in some Latvian folk tales. Perhaps even now, somewhere there are song clews storing melodies and still waiting for someone to unwind them (Grāvītis, 1980).

Although there is a multitude of evidence in folklore from antiquity – more than 500 folk songs referring to the song clews, yet there was no researcher who had ever held the real song clews in one's own hands, so the attitude to their existence was skeptical. Even in 1960s when a local historian Jānis Briņķis [1912-1987] from a Latvian village Vismantai in Lithuania sent some song clews to Riga, nobody expressed much interest in them as it seemed too improbable to admit “songs wound in clews” being actually a real thing. Fortunately, Grāvītis happened to know about the materials sent by Briņķis and visited Vismantai in 1965 by himself to meet Briņķis for the first time. Upon arrival of Grāvītis, since Debeika's and Burba's heritage of clews had perished already, only two old clews of Briņķis, as the memory of his parents, had been survived. Although Briņķis knew the knot tying principles and meaning of several shapes, he couldn't decipher the whole information entirely. Thus, Briņķis handed over the clews and his notebook, comprising the scripts used by his late neighbors supplemented with respective present Latvian alphabet letters, to Grāvītis for the further research.

20 years later, Milovskiy and Grāvītis were on their way to meet Briņķis at his sister's house in Eleja, Jelgava Municipality of Latvia where he had moved to. On the seat in a plastic bag with the smell of naphthalene to avoid moth damage there were two clews once given to Grāvītis – the only material evidence of the knot script existence in this region. A woman in Latgale, the Eastern Latvia who died in 1984 is known to be having last will of burying her together with the clew comprising record of her life story. White bearded Jānis Briņķis with short stature<sup>3</sup>

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<sup>3</sup> A matrimonial ad published on *Magazina*, Nov 12, 1937 p.28 stating “Dear girl, answer my call – a dark-haired Latvian man in Lithuania, 28 y. o., 158 cm, with serious marriage intention, wishes to become acquainted with you. There is no limit on your age. Being materially independent is preferred. First answer guaranteed to everyone. Jānis 10262 – in Vismantai” matches the name and age of Jānis Briņķis that time; presumably he is the submitter.

recognized the clews and his notebook immediately. Once unwound, the more complex clew skein spread over 7 m long base thread of black and orange yarn and dozens of derivative thread “daughters” (Figure 4). Seven 30 cm long flagella tied with small gaps to the base thread meaning high honor, distinction, love and felicitations – likely a congratulatory address wishing happiness and prosperity. We must look for old people who remember the ancient letters as there still are knots waiting for their researchers. Grāvītis has high hopes for the young philologist Aija Celma whom he entrusted two Brinķis’s clews and explanatory notebook to (Миловский, 1987).

According to the extensive research by Edgars Jundzis, the earliest, *Debeika script* uses two parallel threads of different color (e.g. white yarn and red yarn) and consists of 11 characters, each obtained by combining two clusters – [!] the white knot around the red thread and [≡] the red knot around the white thread. The next and most versatile, *Brinkis script* also uses two threads of different color and is made of 20 characters, each obtained by combining two clusters likewise. The third and most complex, *Krauksts script* uses single thread, while having two clusters of different tying – [.] the knot and [!] the loop – and 32 characters. Each script has another variant of writing [resembling Cuneiform] useful for carving, birch bark and textile embroidery (Jundzis, 1985, p.37-42). Neither of these scripts contains H and F, as they occur only in later acquired loanwords in Latvian; hence character P may serve as a substitute.

A	O	U	E	I	J	B	P	D	T
!	!!	!!!	i	ii	iii	!i	!!	!!!	!!!
			-	=	≡	-	-	=	≡
K	G	L	R	M	N	V	Ć	Ś	Ż
!!i	i!!	!iii	i!!!	!!ii	ii!!	!!iii	!!!i	!!!!	!!!!
-	-	≡	-	=	=	≡	≡		≡

O	A	Ā	E	Ē	I	Ī	U	Ū	J	
.	..	!	...	!..	....	!...	.....	!....	!	
-	=	-	≡	=	≡	≡	≡	≡	-	
B	P	D	T	K	Ķ	G	Ģ	L	Ļ	R
..!	...!	!!	!!.	..!	..!!	!!..	!!...	!!!..	!!!!..	!!!!
=	≡		-	-	=	=	≡	=	≡	-
M	N	Ņ	V	C	Č	S	Š	Z	Ž	DŽ
...!!	!!!	!!!.	!	!!!!.	!!!!...	!!!!	!!!!.	..!!!	...!!!	!!!!
≡		-			≡		-	=	≡	-



Figure 1. **Debeika script, Brinkis script and Krauksts script character chart**<sup>4</sup>

Figure 2. **A birch bark box with the Brinkis script inscription**<sup>5</sup>

<sup>4</sup> Character chart compiled by the article author, based on data from Edgars Jundzis’s dissertation (Jundzis, 1985).

<sup>5</sup> A birch bark box (lat. *ciba*) made by Kaspars Zvirbulis (Ozoliņš, 2015) states: *Mēs puisīši vismantieši Mēs mācējām mezglus siet Tu meitiņa burteniece Gan mājēsi izlasīt* (\* there is misprinted **j** instead of **e**) “We, young men of Vismantai, We knew how the knots are tied; You, the girl from Burtnieki, You shall know how it is read.”

Jundzis has collected 47 Latvian folk songs referring to the knot script and song clews, 9 folk songs about bast containers and dowry chests, 8 folk songs about calendar as the sacred tree, as well as 67 Vismantai Latvian folk songs, 17 proverbs and 7 riddles about the knot script and song clews. In 1934, among the 60 members of the Society of the Saule library in Vismantai led by Jānis Briņķis, 13 were knot script literates, 24 had knot script literate parents or grandparents, 4 had heard of the knot script and 19 had not known anything (Jundzis, 1985, p.121). There are two illustrative examples comparing the girl's trouble of learning the contemporary alphabet and the pleasure of learning the knot script – *Grāmatiņa, grāmatiņa Skrej tu elles dibenā; Tevis dēļ mani kūla I rītos, vakaros.*<sup>6</sup> and *Man māmiņa iemācīja Dziju siet cilpiņās; Mīļus vārdus, skaistas dziesmas Satīt vienā kamolā*<sup>7</sup> (Ibid, p.124).

### **Interview with Arno Jundze – grandson of Edgars Jundzis**

The personal interview by email was conducted on April 24, 2016. Arno Jundze (1965-), grandson of Edgars Jundzis, has been carrying around, handing over and showing the clew to several people on diverse occasions, as quite many had been expressing an interest in it. During the [third Latvian National] Awakening (1986-1991) folklorist Andris Mičulis and the Latvian Research Laboratory of Forensic Medicine and Criminology, led by Valdis Birkavs (1942-), have been examining it. However, Arno Jundze admitted that he does not possess the clew anymore.

### **Interview with Betija Strautniece – a contemporary witness**

The narrative interview was conducted on two occasions – on February 11, 2016 and March 4, 2016 in Riga, at home of Betija Strautniece (1930-), the founder and the head of the wood carving studio *Dzīne* (1974-2009), sculptor, teacher and folklorist; received the Cabinet of Ministers Award (highest award given by the Latvian government to distinguished individuals) in 2001. “Actually, there was an exhibition once in Riga displaying a birch bark box with an inscription in the knot script and an explanation (Figure 2). However, visitors could hardly realize that it is actually a script of our forefathers... Here is my story. All my ancestors are from Burtnieki Municipality; my mother is from Bauņi village in Matīši parish. I was about six years old, I presume, as at that time Kārlis Ulmanis was sending the five and six-year-old fatherless children to the countryside and paid the recipient farmstead owners for providing a separate bed and opportunity for children to spend the summer outside Riga in a fresh air.

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<sup>6</sup> “Book, oh book, Go to the pit of hell! I was birched because of you, Be it morning, be it night.”

<sup>7</sup> “Mother taught me well How to loop the yarn; Kind words, beautiful songs To be wound in one clew.”

The mother of my grandma Tonija had a house Blauviņas located in Braslava parish (14km west from Burtnieks lake). Grandma's fierce husband Pēteris Blaus warned me not to dare lingering in the attic, as grandma was having treasures there. So, the five-year-old me tried to figure out what could those treasures be – probably some sweet jam jars. Once I witnessed everyone leaving for the rye reaping on the field, I hurried up to the attic. I hardly remember how tall I was at that time, but there were wooden chests (lat. *tīne*; in a shape of truncated cone) in height up to my breasts and they were about 50 cm wide. The lid was so heavy to take off! As I was looking for the jam jars inside, I was totally frustrated finding it full of yarn clews instead of any single jam jar. There she had three such chests standing. I took all the lids off and ransacked them all over the place but nothing else was there except yarn clews. All in vain... Then grandpa returned home. I hadn't even closed the attic door as there were no treasures after all. He found me and birched me so harshly. I ran under the skirt of grandma crying that there was nothing special in the attic. But grandpa insisted on the importance of treasures I just can't evaluate. Thus, we couldn't reach a common understanding on the treasures.

Then the autumn and winter came. I sat with grandma by the fireside and we were singing together. She had those clews in her hands and so did I. That was so interesting to witness how the knotted yarn was scrolling through her fingertips. My grandma and great grandma were passionate singers and sang often. So, I have been actually tossing, ransacking, singing and witnessing them but unfortunately, I didn't manage to save those treasures myself... The Blaus family offsprings who are living there now, don't know anything about them either. There are many folk songs about song clews, for example – *Kuru dziesmu izdziedāju, To satinu kamolā; Kad aizgāju tautiņās, Pa vienai ritināju*<sup>8</sup> (LD 28-3; LD 27-1). Also, they tell about storing the songs in the bast containers and transporting them in cartloads. My grandma often asked me, which clew should she take – green or white? For instance, the white yarn was for sunny, light themed songs as *Jūriņ' prasa smalku tīklu* and songs of *Dievs, Māra* and *Laima*<sup>9</sup>. The green yarn was for songs of forest, meadow and nature. The black yarn was for wistful and sad songs as *Tec saulīte tecēdama*, which I didn't like much. There were blue clews as well – for children, silly and playful songs, such as *Kur tu teci gailīti*. Some clews were red, but I can't recall any song or theme of those. In case of the looped and knotted yarn only one thread was used. But as a parallel yarn for the knots, red and other colors, sometimes even multicolored yarn was used. Whatever color may be, more important was the distance and precision of knots.

My grandma seldom knotted the whole song entirely. Usually only the most important beginning couplets were knotted instead, as the remaining part was well

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<sup>8</sup> “Whichever song I sang, I wound it in a clew; As I got married, I unwound one by one.”

<sup>9</sup> Dievs, Māra and Laima – the main deities in the Latvian religion i.e. Dievturība.

memorized. However today we have become so forgetful – our poor memory is incomparable to the one back then. The place where a song ended was marked on the thread with a larger prominent knot. Each clew contained several songs in it. After the clew was unwound by singing, it was carefully rewound back to the initial position in order to keep the right sequence of knots. If the knot script, being older, was solely used for song recording, the rather recent script variation for use on the birch bark and embroidery, introduced in the 13th century by the Latvians who went to Vismantai, was applied for storing other information as well. Unfortunately, the yarn decays and doesn't last long so it was crucial to store the clews secured in dedicated containers keeping them out of the reach of children. There's even a song *Mazi bērni nerātņīši Manu dziesmu nicināja: Ielikuši vīzītē, Pa istabu vizināja*<sup>10</sup> (LD 1016-5). Our ancestors didn't let children enter the forest sanctuary (lat. *svētbirze*) as children don't understand the meaning of such a place. After coming of age one could enter it and communicate with *Dievs* and *Laima* there. Although there was a coexistence with deities on a daily basis, certain territories were considered as of limited access.”

### Experiment on reconstruction

On April 10, 2016 in Riga, I conducted an experiment on the reconstruction of a text by hand knotting a yarn with each of the knot scripts. Resources: 2 clews of yarn (white and red), a stop-watch and a ruler. Measurements of the time consumption ( $t$ ) between first and last knot, total amount ( $n$ ) of knots and loops; and the total length ( $l$ ) between first and last knot of the outcome were taken during the experiment. The word *LATVIJA* was chosen as an example. In case of the Debeika script – 2 yarns,  $n[!]=8$  (red) and  $n[_j]=5$  (white);  $t=173s \sim 13.3s/knot$ ;  $l=21cm$ . The Brinkis script – 2 yarns,  $n[!]=6$  (white) and  $n[_j]=13$  (red);  $t=226s \sim 11.9s/knot$ ;  $l=25cm$ . The Krauksts script – 1 yarn,  $n[_.] = 12$  and  $n[!]=7$ ;  $t=399s \sim 21s/knot-loop$ ;  $l=64cm$ .

The results show the Debeika script as the least time consuming as there are fewer knots to tie, however, it has the highest probability of misreading. The Brinkis script has the same total knot-loop amount as the Krauksts script, however, the time consumption of the former is almost the half of the latter and the length of the former is 39% of the latter. The Krauksts script tends to consume more time since a loop is more thread consuming and complicated to tie and secure than a knot. Thus, the use of the most versatile Brinkis script is advisable, although it needs two yarns in contrast to a single one as in the Krauksts script, which is applicable in darkness and for people with visual impairments as the formation and reading of it is similar to the Braille.

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<sup>10</sup> “Little naughty kids Despised my very song: Shoved in the bast shoe, Dragged it ‘round the room.”



Figure 3. The word *LATVIJA* in the Brinkis script

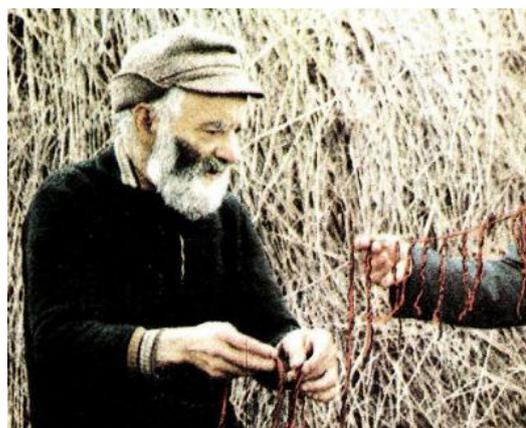


Figure 4. Jānis Brīņķis in 1987 (Миловский, 1987)

### Question for discussion

How the learning of the Latvian knot script basics could be implemented in school as a topic of Design and Technology, Housekeeping, History, Literature, Latvian and Foreign language lessons?

### Conclusions

1. The Latvian knot script, as its counterparts in other cultures – *quipu*, *jié shéng*, *warazan*, etc. – around the globe, is a heritage entirely overpowered by the more convenient written letters due to the expansion of alphabetic literacy.
2. On behalf of diligent researchers of the 20th century – Jānis Krauksts, Jānis Brīņķis, Viktors Grāvītis and Edgars Jundzis – we are able to rediscover our bequest and seek further information.
3. This article testifies that the old customs and traditions of the community are kept longer by preserved ethnic isolation in a foreign land than back home due to the stronger instinct for survival and sense of duty to preserve one's identity, even if the foreign land is a neighboring country.
4. The collected legacy of the Latvian villagers in Lithuania and the detailed testimony of Betija Strautniece – a contemporary witness from Burtnieki, Northern Latvia on the colorwise song categorization and the clew structure is invaluable.
5. The experiment on reconstruction of a text by the knot script revealed the versatility of the Brinkis script as well as the appropriateness of the Krauksts script for the visually impaired people.
6. The Latvian knot script could be a captivating topic for students, worth implementing in several subjects of the school curriculum.

7. The research should be continued in greater detail in order to identify further potential knot scripts once used by Latvian people.

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