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ORIGIN of EUROPEANS

ZALOŽNIŠTVO JUTRO

Original title:

Izvor Slovencev in drugih Evropejcev, 3. izdaja, 2021

CIP - Kataložni zapis o publikaciji
Narodna in univerzitetna knjižnica, Ljubljana

903(4)
811
930.2:003.071

PERDIH, Anton
Origin of Europeans / Anton Perdih. - 1st ed. - Ljubljana : Jutro, 2022

ISBN 978-961-7024-16-6
COBISS.SI-ID 95915267

Acknowledgements

To my wife Nada for her great patience with me during this work lasting more than twenty years. Then to my sons Marko, Franc and Andrej for all their cooperation and help where I was not able to go on alone.
Also to Petr Jandáček for all his contributions and help, to Prof. Dr. Marko Razpet and Jože Skulj for their personal messages. As well as to all the others who have contributed important information about our past or who have pointed out certain information to me in the framework of the project "The Roots of the Slovene Nation", especially Dr. J. Rant and the project leader, Mag. V. Vodopivec. Special thanks are also due to Prof. Dr. Anatole A. Klyosov and Dr. Valery M. Yurkovets. As well as to the publisher S. Kodrič, who drew or improved the figures and maps.

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Preface to the English Edition

This is the revised and slightly amended English translation of the 3rd edition of my book *Izvor Slovencev in drugih Evropejcev*. The intention of the Slovene edition was to inform the Slovenes about their origin, whereas the English edition is the information for the rest of humanity.

I am aware that this book is only a step towards better understanding of our past and that the future achievements will additionally improve knowledge about the origin of Europeans.

Anton Perdih

Introduction

My parents were taught and my grandchildren are still being taught that the ancestors of Slovenes came from somewhere beyond the Carpathian Mountains in the 6th century AD. This started by the Germans who were mocking the Slavs by putting their origin into the valueless Pripyat marshes. The "beyond the Carpathian Mountains" has been shifted lately from the Pripyat marshes more and more to the east, while adding that some of them came some time earlier from the northern part of the central Europe. Oh, not only beyond the Carpathian Mountains. They are supposed to have been in the northern part of central Europe too, but not in Slovenia.

If we look at the data on which this doctrine would be basing, there exist no sources of that time, which would report about this arrival. There are only inferences by analogy: if others were migrating and immigrating at that time, then the ancestors of Slovenes must have migrated too, and the latest of all. As well as – "because when the Romans left the Slovenian territory, there was no one to write that the ancestors of Slovenes arrived". In spite of all the travelers, missionaries, and traders of the time.

Interestingly, this doctrine established in Slovenia the Slovenian scholars after the World War I. That was the time, when the Slovenians finally got out of the Austro-Hungarian Empire and established their own university, whereas the Slovenian scholars established the Austro-Prussian interpretation of the origin of the Slavs. Until then, however, the Slovene people had always known that the ancestors of Slovenes had been living on in the territory of Slovenia "*od nimr*" – since time immemorial.

After the Slovenian scholars silenced the last carriers of the tradition of the origin of Slovenes, they had peace for a few decades. Then, some 60 years ago, just at the time when M. Gimbutas introduced the Kurgan theory of the origin of Indo-Europeans in the West, I. Tomažič realized that no source of that time wrote about the arrival of the ancestors of Slovenes into the territory of present Slovenia. He concluded that it was yet to be found out, what it was really like. Remarkably, I. Tomažič never attended a Slovene school and until then he knew nothing about the history of the Slovenes, but he just began to learn about it.

He encouraged J. Šavli to find out what it was in fact. Šavli noticed the coincidence of the appearance of the linden tree in the center of the settlements outside the present Slovenian area and the names of settlements in Wend-, Wind-. He stated, alas, Wend-, Wind-, that means Veneti – the Veneti were the ancestors of Slovenes. Then he wrote that.

Revival of Interest for the Origin of Slovenes

Prior to the time of the Renaissance, roughly till 1500 AD, the Slavic peoples were confident and understood that their ancestors had lived from antiquity in Central Europe. Subsequently, with the understanding of the "Era of the Migrations of Nations" (Also known as "Migration Period" or Völkerwanderung, 376 to 800 AD) it was suggested that **if** the Germanic Peoples arrived on the territory of the Roman Empire at that time – then the Slavic peoples living east of them must have arrived somewhat later. This form of logic is known as "guilt by association". In time, this unfounded hypothesis became more and more elaborated until it was a doctrinal presumption that the Slavic Peoples migrated to their present lands from the Pripyat River marshes. This concept accepted and promulgated the German scholars and their disciples, including the Slovenian scholars.

Misled by the new studies and theories proposed mainly by German historians, Slovenian scholars uncritically accepted as well as implemented this doctrine. The few critical dissenting voices daring to oppose them were silenced.

For decades this issue remained untouched and unquestioned until a few amateur scientists like the Rev. I. Tomažič, Dr. J. Šavli, and the academician M. Bor raised again critical voices, opposed and questioned the historical truth of the accepted origin of the Slavic peoples.

Namely, in the nineteen sixties, the Rev. Ivan Tomažič, founder of the Korotan Hall of Residence in Vienna, Austria, attended a lecture by the late Prof. Milko Kos on the arrival of the Slavic people into the territory of Alps. He was amazed how in finest detail Prof. Kos described the advance of the Slavs upstream the valley of the river Drava without giving any actual proofs. For Tomažič this raised the suspicion that all the officially asserted history of that periode could be to some extent fictitious and false. This event triggered then his studies to find the true history of the early Slavs. At the beginning, due to his regular work and that of building and directing the Hall of Residence, he could not devote himself fully to this noble commitment.

In the beginning of the nineteen seventies, J. Šavli who had been researching Slovene toponyms in the Alps, arrived in Vienna to study for his PhD and met Tomažič. Mutual discussions on this and related topics resulted in two publications, published separately by the two authors in the periodical *Glas Korotana* [Voice of Korotan (i.e. Voice of Carinthia)] in 1981. Tomažič embarked on establishing a

"Foundation for the advancement of research and promotion of Slovene history". In the founding act Tomažič brought forward all questionable aspects of the currently held history of the Slovenian territories in the 5th and 6th century AD. He also gave a hint how to present the corrected history. He also published two papers by Šavli on the Carinthian Hat and on the heraldic black Carinthian Panther. In the same periodical in 1982 Šavli published a paper on the "Linden – a tree of life", pointing out the coincidence of the territory of the Wends and the territory of linden tree in the center of the settlement. This coincidence made him think that the ancestors of Slovenes were the Wends, i.e. Veneti, and from this new understanding followed the formulation of the "Venetic theory". At the same time Tomažič published a paper entitled "Some thoughts on the ancient history of the Slovenes", presenting an outline of his point of view on the early history of the Slovene peoples, a theme he was following till he passed away in 2014. In 1985 he published in the vol. 10 of the periodical *Glas Korotana* the Šavli's study "The Veneti, our distant ancestors?", a paper which was harshly criticised in the major Slovenian newspaper DELO and which triggered an avalanche of polemic writings, also answered by the I. Tomažič. When almost defeated by a phalanx of university scholars, the academician Matej Bor entered the scene by publishing his explanation of how to read and understand the Venetic scripts and writings. The exchange of polemic writings in Slovenian newspapers continued for another decade and in the end the newspapers closed the discussion on this issue.

After that, Tomažič published two special issues of the *Glas Korotana*, the books *Veneti, naši davni predniki* [also translated into German, Italian, English (Veneti First Builders of the European Community), and Russian], *Novo sporočilo knjige Veneti naši davni predniki* [New message of the book The Veneti, our distant ancestors]; *Z Veneti v novi čas* [With the Veneti into a New Era]; *Etruščani in Veneti* [The Etruscans and the Veneti (translated also into Russian)]; *V nova slovenska obzorja z Veneti v Evropi 2000* [With the Veneti into new Slovene Horizons in the Europe of 2000], and finally, on the occasion of his 80th birthday, a book *Slovenci Kdo smo? Od kdaj in od kod izviramo?* [Who are we Slovenes? When and from where do we originate?], dedicated to the Slovenian people. In Slovenia and all over the Europe he delivered numerous lectures devoted to his favorite topic.

Several other authors published books or papers about this topic, too, for example A. Ambrozic, F. Jeza, A. Rant, J. Rant, L. Verbovšek, V. Vodopivec, L. Vuga.

Independently and entirely ignorant about the ideas of Ivan Tomažič, in 1971 Petr Jandáček was working on his PhD in Anthropology at the Southern Illinois University, Carbondale, Illinois, USA. Jandáček's personal orientation was "Slavo-Centric" and very unpalatable to the "Kelto-Germanic" paradigm promulgated by all institutions of higher learning in the "Western Countries". Professor Joel

Origin of Humankind

About the origin and development of humankind we know more and more. For example, our ancestors separated from the ancestors of chimpanzees about 13 million years ago. The ancestors of both of them were at that time not like present people or present chimpanzees, since they developed each in its direction. Where happened this separation we do not know yet. There appear more and more indications that it did not happen in Africa but in Eurasia, possibly even in Europe or Near East. One of the reasons for this is that just in Eurasia there are happening the greatest changes of weather during the year as well as the changes of climate – coolings and warmins, wet and dry periods. These variations force the humans to steady adaptions and migrations as well as developments. It appears that some branches of humankind migrated into Africa, where they survived or not.

Human-like beings lived about 9 million years ago in central Europe, 7.2 million years ago on the Balkans, about 300,000 years ago in northern Africa. Traces of human activities are observed in Europe for at least 400,000 years ago. It is supposed that our ancestor was *Homo erectus*. As well as that already the *Australopitecines*, which originated about 4.5 million years ago were able to speak. There are appearing the explanations that different kinds of primordial humans were the ancestors of people of different present human races and that mainly the females transferred these racial characteristics.

About 800,000 years ago diverged from the common ancestor in Eastern Asia the Denisovans. About 360,000 years ago diverged from the common ancestor in Western Asia the Neanderthals. They met in Central Asia, where they had common offspring. What and how much contributed they to the modern humankind is still being studied.

The Neanderthals arrived into the central and western Europe about 140,000 to 120,000 years ago. They mixed here and there with people of our kind and for this reason we have in our genom few Neanderthal characteristics. People of our kind arrived central Asia again less than 60,000 years ago from Europe. There they met the rests of Denisovans and other now extinct branches of humans, which left some genetic traces in the inhabitants of the southeastern Asia, Australia and Melanesia.

Europeans

Across Europe, the Y chromosome haplogroups I, R1a, R1b, J, E and N are now the most common in males, while haplogroups G, Q and T are much fewer and the others nonexistent or almost nonexistent. This has happened gradually, at different times. The most common mt-DNA haplogroups are H, U, J, T, K, HV, etc, of which mt-haplogroup U is the original European haplogroup, while the others arrived in Europe mainly with the advent of agriculture.

Human ancestors and the ancestors of the closest apes, the chimpanzees, diverged from a common ancestor about 13 million years ago. We do not yet know where this separation took place. But human-like, not ape-like teeth have been found in the Rhineland, around 9 million years old, and in Bulgaria and Greece, around 7.2 million years old. Among other data, this suggests that humans evolved in Europe, not Africa, but that they did or did not migrate to Africa resp. survive there.

About 800,000 years ago, Denisovans split from our common ancestor in the eastern half of Asia, and about 360,000 years ago Neanderthals split in the western half of Asia. Both met and mixed in Central Asia, e.g. in the Altai Mountains. It remains to be seen when the first representatives of our species arrived into Asia. But they were wiped out by a cosmogenic mega-tsunami about 68,000 years ago.

In Europe, traces of human activity go back at least 400,000 years. Neanderthals arrived into Europe from western Asia later, around 140,000 to 120,000 years ago. Therefore, the ancestors of Africans who migrated from Europe to Africa before the arrival of the Neanderthals (i.e. males of the Y chromosome haplogroups A00, A0, A1a, A1b1 as well as their females) did not carry Neanderthal genetic traits.

The ancestors of the current members of our human species arrived into Central Asia from Europe less than 60,000 years ago, and possibly even less than 50,000 years ago.

From the original inhabitants, i.e. males of the Y chromosome haplogroups BT → CT →→ F →→ IJK → IJ, the males of haplogroup I evolved and remained in Europe, and are still found all over the Europe. People of the Y chromosome haplogroups BT, CT, IJK, IJ lived among them, e.g. in the Pannonian Plain, until about 4,000 years ago, when they were wiped out by people of Y chromosome haplogroup R1b.

About 8,000 years ago, males of the Y chromosome haplogroup G2a began to bring agriculture to Europe from the Near East, accompanied by some males of the haplogroup H2 and other haplogroups. Their females introduced into Europe

most of the current diversity of the mtDNA haplogroups. By about 6,000 years ago, agriculture had spread throughout most of Europe.

Towards the end of the spread of agriculture, males of the Y chromosome haplogroup R1a are also detected north of the Alps. They originated around 24,000 years ago in Central Asia. After the end of the Last Glaciation, they migrated from Central Asia, *inter alia*, via northern Iran and the Near East to Europe.

Significant changes across Europe caused the males of the Y chromosome haplogroup R1b. These people originated around 21,000 years ago in Central Asia. After the end of the Last Glaciation they migrated from Central Asia via northern Kazakhstan to the central Volga region, where they developed the pre-Kurgan and Kurgan cultures. Whether the original inhabitants of the Y chromosome haplogroups from IJK to K and I were exterminated there is not yet known. But the observation that some of the Y chromosome haplogroup R1b males had later the mt-haplogroup U suggests that they did. They also sent visitors far to the west, as we find their descendants with native females as far as Italy and the Baltic.

From the Volga region they raided westwards, and about 6,500 years ago they also invaded and plundered the eastern Balkans and the Pannonian Plain. To defend against them, some hill-forts were built in the southeastern and central Slovenia. The local folk tradition of the dog-headed warriors and the werewolves also reminds of them. From here, they took the early Bronze Age industry and drove miners and metalworkers, mostly the Y chromosome haplogroup G2a males, to the eastern side of the Black Sea up to the Volga region. This enabled them to invade Mesopotamia past the Caucasus Mountains until about 6,000 years ago. The part of them that remained at that time north of the Caucasus Mountains developed later the Yamna culture there.

From Mesopotamia, some of them advanced into Egypt and then across the North Africa, reaching the Iberian Peninsula around 4,800 years ago. There they developed the Bell Beakers culture and spread it across the Western Europe to Scandinavia. Initially, they spoke one of the Altaic language group of that time rather than Indo-European. Eventually, they eliminated most of the indigenous males in the lowlands and took their females. At the same time, they also invaded the central Europe and in western Slovenia there was built a system of hill-forts to defend against them. The advance of people of the Y chromosome haplogroup R1b stopped around 3,500 years ago in the Rhineland and in the middle of the Po valley. But even later, in historical times, they occupied the territories of the original inhabitants and alienated them.

The people of the Y chromosome haplogroup N, which is now characteristic of the North Asian peoples and in Europe of the Lapps, Finns and Balts, is also found in large numbers in the present-day East European Slavs. It originated about 37,000

years ago in south-east Asia, where most of them still live. Some of them gradually spread northwestwards and reached the Urals about 6,000 years ago. Linguists say they spoke Uralic languages of that time. About 3,500 years ago they began to spread across what is now, especially northern, Russia and after a few centuries they reached the Baltic and the Carpathian Mountains.

A few people of the Y chromosome haplogroups E, H and J came to Europe during the spread of agriculture, but most of them eliminated later the people of the Y chromosome haplogroup R1b. Most of the ancestors of the current people of the haplogroups E and J came to Europe during the time of the Roman Empire and spread around afterwards.

These data show how the present European peoples came to being.

Balts, Finns, Lapps

In the Lapps, the currently known frequency of the Y chromosome haplogroups is: N1a > I1 > R1a > R1b > others. In Finns, it is N1a > I1 > R1a > R1b > others, as well. In Estonians, it is N1a ~ R1a > I1 > R1b > others. Among the others, the haplogroups E1b and T are particularly interesting in Estonians, as they are much more abundant in Estonians than in others around. The Lapps, Finns and Estonians speak Uralic languages, and these are characteristic of people of the Y chromosome haplogroup N1a, which is predominant among them. People of the Y chromosome haplogroup N1a came to Finland about 1,500 years ago from beyond the Urals. Individual finds suggest that people of the Y chromosome haplogroup R1a arrived in what is now Finland around 7,000 years ago. People of the Y chromosome haplogroup I1 were the original inhabitants who settled there after the end of the Last Glaciation. The Lapps, Finns and Estonians are therefore dominated by the language of the relatively late arrivals, whose descendants make up now the majority of the population.

The frequency of the Y chromosome haplogroups in other Baltic Sea peoples is as follows: in Latvians, R1a ~ N1a > R1b > I1 > others, and in Lithuanians, N1a ~ R1a > I1 > R1b > others. We have no information about the frequency of the Y chromosome haplogroups in the extinct Prussians.

The original inhabitants around the Baltic Sea were the people of the Y chromosome haplogroup I1, who settled there after the end of the Last Glaciation. People of the Y chromosome haplogroup R1a appeared in significant numbers along the eastern and southern Baltic in the late Neolithic, around 6,000 years ago. Later, around 2,800 to 2,500 years ago, one branch of people of the Y chromosome haplogroup N1a arrived into their area from beyond the Urals, and another branch arrived Finland around 1,500 years ago.

people of other origins. Genetic data have shown that the Greeks also have Hamitic ancestors who came to the territory of the southern Proto-Sloveni and introduced the Kentum characteristics. Some linguists have looked for the origin of these features in the Sudan. This information raises the possibility that some of the ancestors of the Mycenaean Greeks were part of the Egyptian army that fled to Crete after they were defeated by the Hyksos some 3.7 thousand years ago and were sent by the Proto-Slavic Minoans as mercenaries to the Proto-Slavic Peloponnese to administer it for them. After the eruption of the Tera volcano and the destruction of the Minoan state, the surviving tenants took over the Peloponnese and spread their rule around. The influence of the "Peoples from beyond the sea" and other later settlers would also have to be taken into account.

Latins

The Latins appear to have been formed after a part of the defeated army of the "Peoples from across the sea" fled to the Apennine peninsula, subjugating the Proto-Slovenic original inhabitants there, and spread later as the Roman Empire elsewhere in Europe. Some Latin-like features can be seen in the Baltic languages, including Estonian, but not in Finnic and Slavic languages. Data on the distribution, origin and development of the Y chromosome haplogroup T, and the Akkadian etymology of many Greek and Latin words indicate the direction of Latin origins.

Slavs

The common Slavic term for the Slavs – *Slovani, Sloveni, Slaveni*, etc – was developed at the beginning of the 19th century to establish a common name for all Slavic peoples, just as the Germanic, Celtic and Romance peoples of the time had for their nations. Apparently, after the division into different nations, the Slavs forgot that they were formerly Proto-Slavs = *Sloveni* with different pronunciations of the name, e.g. *Slaveni, Slovjeni, Slavjeni*. The denomination *Sloveni, Slovenic* will be used to represent the Slavic people before they were divided into different Slavic nations.

Scholars generally consider the Slavs to be a very young formation, having originated shortly before the 6th century AD, when (according to the most scornful interpretation) from the Pripyat marshes they suddenly spread across half of Europe.

Inheritance

Figure 2 shows schematically how inheritance takes place on the various chromosomes. Inheritance on the male side (Y chromosome) and on the female side (mtDNA) proceeds only along these sides, while the inheritance on the other chromosomes is more or less random.

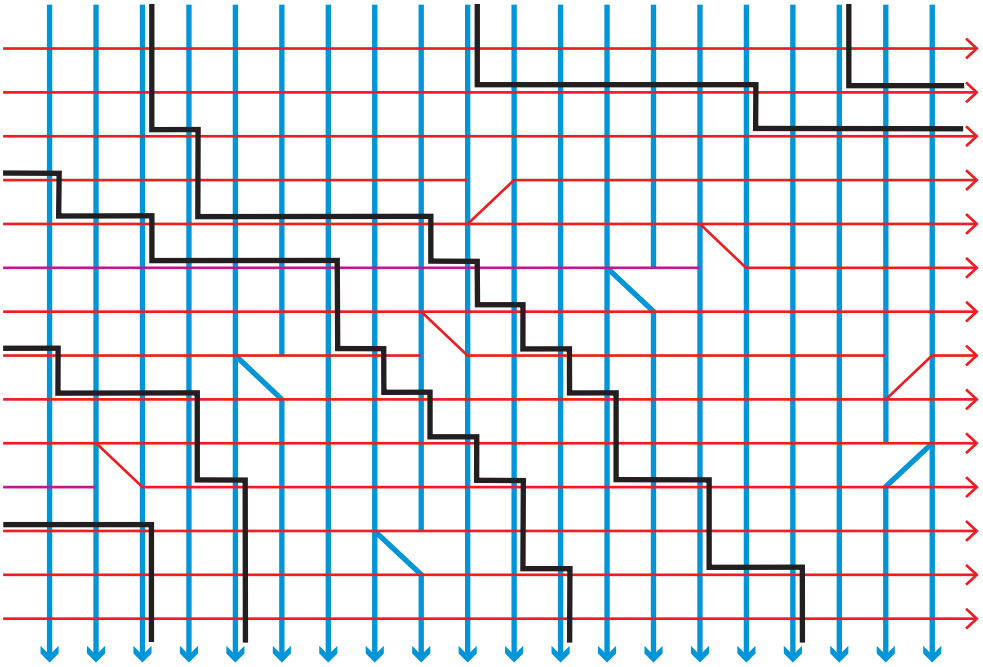


Figure 2. *Schematic representation of the inheritance of mutations. Inheritance on the female side, i.e. by the mitochondrial DNA (pink horizontal lines), on the male side, i.e. by the Y chromosome (blue vertical lines), and on the other chromosomes (black lines).*

Due to more or less random inheritance, determining the inheritance by mutations on other chromosomes is much more uncertain than determining the inheritance by mtDNA or by the Y chromosome. As an example, the methodology for determining origins from mutations on other chromosomes is now so crude that it does not enable the distinguishing the populations and cultures dominated by the Y chromosome haplogroup I or R1a, from populations and cultures dominated by the Y chromosome haplogroup R1b. The methodology based on mutations on the Y chromosome easily allows it. Therefore, genome-wide geneticists often rely on explanations or assumptions from other disciplines to interpret their results, because they do not have their own data to make reliable interpretations.

As things stand, the determination of inheritance by mutations on other chromosomes is much less reliable than by data on mutations on mtDNA and even

less reliable than by data on mutations on the Y chromosome. This is also due to the methodology used by the most advanced current genome-wide geneticists. The averages they rely on "hide" both the random inheritance between males and females and the mix of people of different origins. Only when they can apply a methodology similar to that using the Y chromosome, which allows tracing the origin and dispersal or migration of people, will they be able to improve their explanations somewhat. Because of the randomness of inheritance, this tracing will never reach the precision of that using the Y chromosome data. However, tracing via other chromosomes also has its good side. It can trace remnants of inheritance from extinct branches of humanity, which the mutation data on mtDNA and on the Y chromosome do not trace. On the latter, there are only mutations in the ancestors, not in the extinct branches.

Determination of the Y-chromosome inheritance has several advantages over mtDNA determination. There are several thousand times more base pairs on the Y chromosome than on mtDNA. As a consequence, there is much more potential for useful information on the Y chromosome than on mtDNA. In addition, in most of the world, females of different mt-haplogroups are mixed up locally much more than males of different Y chromosome haplogroups. This gives the explanations based on mutations on the Y chromosome greater and more accurate predictive value. In addition, while mtDNA mutations appear in the form of single nucleic base substitutions, there are two independent types of mutations on the Y chromosome – one in the form of Single Nucleotide Polymorphisms (SNPs), and the other in the form of changes in the number of Short Tandem Repeats (STRs). Both occur by accident during the DNA copying by the enzymes. The Single Nucleotide Polymorphism (SNP) on the Y chromosome is practically irreversible, while a change in the number of Short Tandem Repeats (STRs) is reversible.

Since these two types of mutation are independent of each other, both are helpful to estimate the time to the common ancestor as well as to verify independently the results internally. There is an important difference between the two. Single Nucleotide Polymorphisms (SNP) substitution data tell us when the mutation occurred, regardless of the subsequent events. Data on changes in the number of Short Tandem Repeats (STRs), on the other hand, tell us when these males either originated, or barely survived or immigrated. This results most dramatically in Africans of the Y chromosome haplogroup A00. They originated about 240,000 years ago and survived a near extinction about 700 years ago. With haplogroup BT, which is the ancestor of most other humans, we see that it originated about 131,000 years ago and barely survived about 64,000 years ago.

Data based on Single Nucleotide Polymorphisms (SNP) on the Y chromosome is collecting and editing the YFull team, which is using the currently known data

to classify haplogroups and subgroups into a haplogroup tree and to determine the times of common ancestry in relation to the number of different subclades. The current benchmark for the generation times is 144 years for a single mutation on a section of the Y chromosome of about 8.5 million nucleic bases. The uncertainty of the results now extends to 30%.

More than a decade ago, based on his decades-long research on enzyme action and his knowledge of the mathematical presentation of the time dependence of this action, Klyosov has developed a new branch of this kind of research, namely the mutation-based DNA genealogy, or, in short, DNA genealogy. His work bases on the knowledge that such phenomena as the reversible change in the number of repeats of Short Tandem Repeats (STRs) on the Y chromosome are described by the first-order kinetics. First-order kinetics also describes the course of the radioactive decay, the laws of which are widely used by archaeologists to date their finds. So the same regularity applies both to dating the finds and to dating the mutations, and thus to dating the evolution of humanity.

For this first-order kinetics, Klyosov determined the reaction rate constants for both individual markers and for different panels of markers, ranging from 6 to 111 markers.

However, the haplotype data must be sorted first by a hierarchical clustering method into groups that share a common ancestor. Then, either "by hand" or with help of the Kilin-Klyosov calculator, there are determined times to common ancestors. Then, to these common ancestors are determined times to their common ancestors, and so on.

In this calculation, both the number of samples and the number of markers in them are important. Haplotypes with fewer than 20 markers, e.g. 6 markers each, give rather coarse data, so that in many places the haplotypes look identical when they are in fact different. The fewer markers a haplotype has the more similar or identical it looks to other such haplotypes. Currently, a standard haplotype has 111 markers. However, haplotypes with 67 markers also give good results. Comparing a larger number of haplotypes with the same common ancestor and a larger number of markers gives a narrower range of uncertainty in the result. The average uncertainty of the times to the common ancestor estimated this way is now around 10%, in some cases even less. When comparing different results, these uncertainty ranges should also be taken into account.

The sequence of data on times to common ancestor and the sequence of characteristic subclades in both present-day humans and ancient skeletons provide information on the times and direction of dispersal of humans of particular haplogroups, and this is the basis for new interpretations of the ancient past. Importantly, the results obtained using the DNA genealogy methodology and calculated from

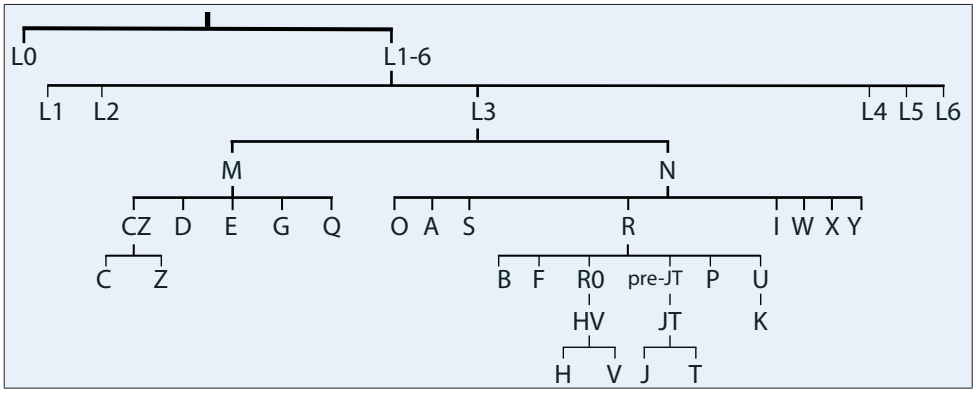
the mutation status of present-day humans agree well, within the uncertainty of the method, with data obtained from ancient skeletons with which they share common ancestry, as well as with archaeological dating. All times are given here as the approximate number of years before present.

Haplogroups of Present-day People

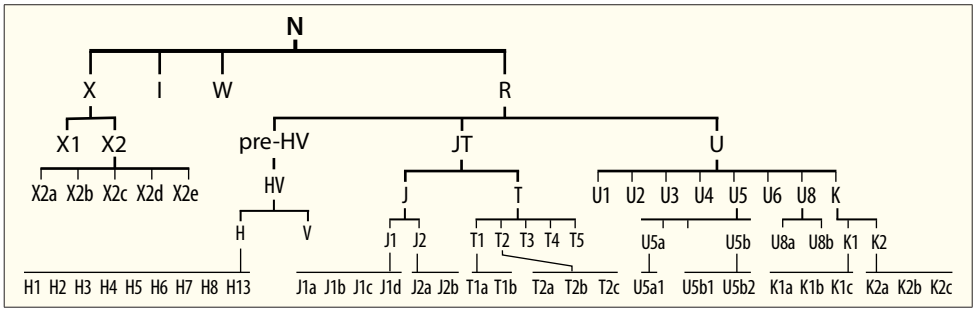
Table 1 gives some information on the origin and formation of the haplogroups currently known on the Y chromosome.

Some information on the origin and formation of haplogroups on mtDNA is given by Scheme 1 for all humans and Scheme 2 for Europeans.

Scheme 1. *Evolution of haplogroups on mtDNA (humanity).*



Scheme 2. *Evolution of current European haplogroups on mtDNA.*



Neither the presently known Y chromosome haplogroups nor the mt-haplogroups formed in Africa; they formed in Eurasia (Klyosov; Árnason).

A schematic representation of the origin of the oldest currently known Y chromosome haplogroups and their migrations gives Figure 3. Using the method for calculating times to the common ancestor based on changes in the number of repetitions of Short Tandem Repeats (STRs) on the Y chromosome, Klyosov

Models

In science, we know that if we have several different, often conflicting explanations for a phenomenon, it is very likely that none of them is the right one. Each of them may contain some truth about what it is trying to explain.

Therefore, in such cases, it is important to compare data from as many different perspectives as possible. The stress is on data, not on existing explanations. The basic rule in science is that explanations have to be basing on data, but not censoring the data basing on explanations. Therefore, in principle, no explanation can be eternal, and explanations should undergo a modification when there appear new data that do not support previous explanations. This is the only way the science can progress. If "eternal" explanations prevail, then it is no longer science, but an ossified doctrine.

Often the influence of the model prevails in the development of an explanation. For, "…(if) we have no verification, science can be arbitrarily wrong in setting up models. … Agreement among scientists can set up a mental model, which assumes the role of dogma. … The assumptions made in such a model are contained in the result of the application of the model. … The model may be partly correct, partly incorrect. Reality may confirm certain explanations, but the others possibly not. … Each model is hypothetical, but not each hypothesis is a model. It only concerns a certain slice of reality. … In science and philosophy, it is only arguments that decide, not the consensus plurium" (Hlebš).

If, for example, we accept the model that people have only ever immigrated to Slovenia from elsewhere, then we interpret all the data in this way and believe that this is what has happened. Therefore, the models must be broad enough to allow for all possibilities, or at least the most important ones. E.g. not only that they immigrated, but also that some of them survived in Slovenia and also moved from Slovenia to somewhere else.

Other models of similar kind are for example:

- The model of the late formation of Slavs followed by the arrival of Slavs in the 6^{th} (5^{th} to 7^{th}) century AD.
- The model of the Proto-Indo-European language and how to reconstruct it basing on Peripheral Indo-European languages, which contain many characteristics of other, non-Indo-European language groups.
- The model of glottochronology, which assumes a quasi-linear development of languages and which does not take into account the facts that in isolation

> the characteristics of languages change slowly, whereas in contanct with other languages, in changed environment, technology, culture, etc, the languages change much faster. The basic words approach improves the situation to some extent but introduces the overlooking of other data.

We can get closer to a better knowledge of what it was really like by confronting and refining individual interpretations. However, in time this ends. Then we need to bring in additional data, independent of the previous ones, even and especially data that the previous interpreters did not know or did not take into account. Often only an independent "outside" view reveals new aspects and makes it possible to improve the interpretations.

Therefore, in establishing the past, it is necessary to take into account the information provided by many sciences. For the more recent times, this is especially the historiography. For ancient times, it is especially archaeology, anthropology, linguistics, paleoclimatology, paleobotany, paleogeology, folk tradition, genetics, etc. A synergistic evaluation based on data, rather than on previous interpretations, must prevail. Historians should be trained also to coordinate or lead such synergistic evaluation based on novel data.

Corded Ware pottery vessels from the Gröndal 1 (centre) and Jönsas burial sites in Vantaa, southern Finland – ca. 6800–2300 years BC. Photo: István Bolgár 2008, Finnish Heritage Agency

Climate Changes

Climate change and other external influences that severely affect humanity can be divided into two groups: those that recur more or less regularly and those that occur only occasionally.

Seasons are regularly recurring. Warming and cooling periods as well as wet and dry periods recur over longer periods. In the long term, ice ages and interglacial periods recur more or less regularly. The changes in the orbital parameters of the Earth, the Sun and the Moon, which recur every 26,000, 13,000 and 2,000 years, respectively, are the main cause of them. Every 26,000 years changes in the Earth's precession cause repeated glaciations and interglacial periods. Every 13,000 years, differences in conditions in the hemispheres do occur. Every 2,000 years, cooler wet and warmer dry periods occur due to the simultaneous influence of the Sun and the Moon on the tides and the consequent release of methane from the ocean floor due to the Sun's and the Moon's combined influence on the tides and the consequent release of methane from the ocean floor. All these changes repeat in 92,000 years. Glaciations and warmings in the Southern Hemisphere do not have much effect on sea level, but glaciations and warming in the Northern Hemisphere do.

Changes in the Sun's radiation are also recurring. The 11-year recurrence is well known, but changes in radiation also recur over longer periods and have a major impact on the climate.

Many changes in human haplogroups and archaeological cultures coincide with changes in climate. These data have been compiled and some of them illustrated, e.g. by Yurkovets, who provided a timeline of climate and the Y chromosome haplogroup changes over the last 80,000 years, Figure 16. The figure shows that in favorable climatic conditions new haplogroups form, while in glaciations only those people who are successful enough in unfavorable conditions survive. The coincidence of the climate changes over the last 50,000 years with different archaeological cultures shows Figure 17. Yurkovets also explained the events at the Black Sea.

It is necessary to compare these data with the data obtained by examining the ice drilled in Greenland and Antarctica, because they point to other events on the Earth as well.

There are also other issues with recurring events. For example, why the last glaciation in the Northern Hemisphere was mainly along the Atlantic Ocean and not the Pacific Ocean. One possibility as to why this was the case is that when there

Origins and Development of Agriculture

During and after the last glaciation, we can observe some of the stages of development that led to some ancient civilizations. Watkins presented data showing the permanent settlement of fishers around 20,000 years ago along the Lake Gennesaret. He also showed that they domesticated in the Fertile Crescent around 10.5 thousand years ago several types of cereals and legumes, as well as sheep, goats and cattle.

Zohary and Hopf gave a time for the emergence of agriculture in the Near East of about 10.6 thousand years ago, Figure 18. From there it spread beyond the Caspian Sea between 8.8 and 7.5 thousand years ago. It reached the Indus Valley around 8.3 thousand years ago. The central Danube (Starčevo) region it arrived around 7.8 thousand years ago. The western Mediterranean it arrived around 7.6 thousand years ago. It arrived Ukraine around 7.2 thousand years ago and Central Europe around 7 thousand years ago. The Alps it arrived around 6.5 thousand years ago, whereas Scandinavia around 5.6 thousand years ago. These data point to an earlier spread towards Central Asia and India than towards Europe.

Mann also gave an overview of events in the Fertile Crescent. There, hunter-gatherers lived 15 to 12 thousand years ago. About 12 to 10.5 thousand years ago, there were settlements with communal storehouses, grand buildings and ritual art. Between 10.5 and 8.25 thousand years ago, animals and plants were domesticated. After about 11,000 years ago, sheep and goats were domesticated, followed by pigs and cattle.

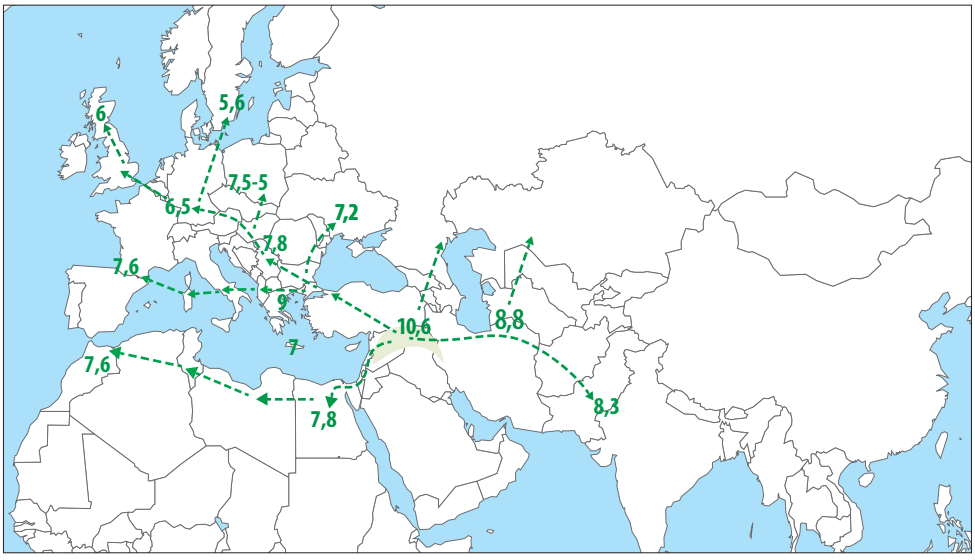


Figure 18. *Spread of agriculture according to Zohary and Hopf (2004).*

Some Linguistic Issues

Mate Kapović has shown that as early as the 15th and 16th centuries, scholars such as Agricola/Huisman (1443/4-1485), Gelenius/Hrubý z Jelení (1497-1554) and Elichmann (1601/2-1639) noticed similarities between various Indo-European languages. However, van Boxhorn (1612-1653) can be considered the father of Indo-European linguistics, who in 1647 theorised that Greek, Latin, Persian, Old Saxon, Dutch, German, Gothic, Russian, Danish, Swedish, Lithuanian, Czech, Croatian and Welsh (but not Hebrew) were descended from "Scythian". Salmasius/de Saumaise (1588-1653) added Sanskrit to these. Van Boxhorn also drew attention to important elements of comparative linguistics. The similarities with Sanskrit mentioned Sassetti (1540-1588) as early as 1585 and others continued it, including Jones (1746-1794), who is unjustly called the father of modern linguistics. The work continued Grimm (1785-1863), Rask (1787-1832) and Bopp (1791-1867). Since they considered only Sanskrit, Old Persian, Greek, Latin and Germanic, they called this group Indo-Germanic, see e.g. Szemerényi. The concept of Indo-European languages proposed in 1813 Young (1773-1829).

Except by van Boxhorn, Slavic languages were not included. However, if Gothic and Celtic are mixed with very different features, one must also ask whether Slavic languages may have been mixed with foreign features or whether they have avoided major mixing with foreign languages.

Hilferding found that there are no significant differences between Slavic languages and Sanskrit. The Slavic languages, the Lithuanian language and Sanskrit form a separate family among the Indo-European languages outside of which are Persian and the Western European languages.

The division of the Indo-European languages into the Kentum and Satem languages completed several authors in the 1890s. Debates on the origin and scope of this phenomenon are still ongoing. It has sometimes been portrayed as a fundamental division of the Indo-European languages. Of the five explanations of the phenomenon, that of the three-tectal system has prevailed (Tischler), although it is not universally accepted and some argue for a two-tectal system. However, in 1965 Solta showed that the Kentum-Satem division had been given too much importance. This criterion is not suitable for dividing Indo-European languages into two clearly defined groups, as it is only one of many isoglosses (Tischler). More and more linguists are following this conclusion and no longer give it the same emphasis as before.

Alinei's Statements

An important geo-linguist of the second half of the 20th century, M. Alinei, presented in detail the strategies to solve the question of Indo-European languages including the Slavic ones and he pointed to several foci. He stressed that as many studies show, the paradigm of Arian, Pan-Germanic and colonialist ideology and their emphasis on Indo-Europeans racial superiority with inclination towards war and conquest deeply influenced the foundation of scientific Indo-European research in the 19th Century. Within the Arian superior race, the German "father-founders" of Indo-European (at that time Indo-Germanic) studies preferred to see the Germanic people as the supermen (Herrenvolk), the purest and the closest to the original blessed race. In turn, the Pan-Germanic ideology and its political context gave rise to yet another important myth, the consequences of which are still dominating the field of Indo-European studies.

Namely the myth of the extremely late arrival of the Slavs, ergo if the Germanic people were the closest to the pure Arian race (Übermenschen), then the Slavs must certainly be the farthest ones (Untermenschen)! Despite their enormous numbers (half of Europe is Slavic), the Slavs were thought of having been hidden somewhere, magically leaving no archaeological trace whatsoever of their presence, until in the Middle Ages they unexplainably (and quite regretfully!) emerge and swarm over Eastern Europe. After WW2, with the end of the Nazi ideology, M. Gimbutas introduced a new variant of the traditional scenario, which soon became the new canonic Indo-European theory: Baltic élites represented best the Proto-Indo-European Battle-Axe super-warriors instead of Germanic ones. Although it explains why the founders of Indo-European studies came to the preposterous idea of recent invasions of Neolithic Europe by superior Indo-European warriors, the conclusion illustrated above reached by history of archaeology and linguistics is to be seriously rechecked.

Language and languages are much more ancient than traditionally thought. Consequently, also the record of their change and development must be mapped onto much longer chronology, instead of being compressed into a few, e.g. four millennia, as traditionally done. While traditional linguistics, by reifying language, reincarnated it into a sort of biological, organic law of language development. The extraordinarily fast tempo attributed to it would fit the required short chronologies of the recent invasion. (Rem. AP: In a similar way, the Slovenian linguistics compresses the development of numerous and very heterogeneous Slovene dialects into the period of centuries and explain this as the influence of rests of the non-Slavic speaking ancient and Roman people). The new, long chronologies of

Comparison of Linguistic and "Genetic" Data

We can address the linguistic data with the data provided by DNA Genealogy (cf. the chapter Demonstration of the origins and evolution of humanity, pp. 38-64). We can see that in Europe the Indo-European languages did not arise from the gradual branching of a putative Proto-Indo-European but by intrusions of peoples of other language groups into the territories where the Proto-Slovenic people lived.

The original European language was the language of Proto-Sloveni, i.e. of people of mainly the Y chromosome haplogroup I, and the mt-haplogroup U. This situation lasted till about 8,000 to 6,000 years ago, when agriculturalists of mainly the Y chromosome haplogroup G2a, and a variety of mt-haplogroups began to settle among them. Other Indo-European languages began to emerge in Europe later than 5,000 years ago, when people from other language groups began to settle among them.

"Celtic" languages began to emerge in Europe after about 4,800 years ago when the Altaic speaking people of the Y chromosome haplogroup R1b began to occupy the Western Europe and to replace the previous males.

The Greek language began forming about 3.700 years ago when the Minoans settled in the Peloponnese a fleeing part of the Egyptian army defeated by the Hyksos.

Italic languages began forming about 3.200 years ago, when part of the army of the "Peoples from beyond the Sea" retreated to the Apennine Peninsula after their defeat by the Egyptians.

The Germanic languages started to develop in Europe approximately at the same time, when another part of the army of the "Peoples from beyond the Sea", having also the Far East linguistic characteristics, entered into Europe, where they mixed with part of the developing "Celtic" people.

The Baltic languages started to form about 2,500 to 2,800 years ago when the Uralic people of the Y chromosome haplogroup N1a arrived the Baltic Sea and the Carpathian Mountains.

The explanation of forming the present Indo-European languages in Europe by spontaneous branching of the supposed Proto-Indo-European language is wrong. The formation of the present Indo-European languages in Europe appeared quite a different way. For this reason is the present reconstruction of the presumed Proto-Indo-European language wrong, since it is based mainly on the peripheral languages, which contain characteristics of the non-Indo-European languages. Uncritical use of present reconstruction of the presumed Proto-Indo-European language presents a danger that the forms of non-Indo-European origin are proclaimed as aboriginally Proto-Indo-European. Consequently, there are observed similarities between the presumed Proto-Indo-European language and the languages of other,

Slovene Pre-Christian Religion

The state Slovenia is in Europe, "between Venice and Vienna". The Slovenes have a rich and diverse folk tradition. This speaks among others about the male beings (*divji mož* = wild man, *ajd* = heathen, *velikan* = giant, *škrat* = dwarf, *povodni mož* = water sprite, *pasjeglavec* = dog-headed warrior, *volkodlak* = werewolf, wolfman, etc), about the female beings (*divja baba* = wild hag, *baba Pehtra* = hag Pehtra, *krivopeta* = bandyheel, *Torka*, *vesna*, *vila* = fairy , *žalik žena* = nymph, *rojenica* the Fates, etc), the games of tag, the dancing games that would have originated in the Palaeolithic; as well as about the tools and accessories from a time before the Roman occupation, etc. (Baš)

The Slovene folk tradition speaks about the "wild men" who lived at higher altitudes, i.e. on a hill or a mountain; see e.g. Šavli. It appears that these "wild men" were hunters/gatherers, while the "wild hags" were gatherers, and they spoke a language, which was similar to that spoken by the agriculturists in the valleys. According to the Slovene folk tradition, they were able to communicate about very detailed things.

In addition to this diverse folk tradition there are becoming known also the local versions of the old, i.e. the pre-Christian Slovene religion.

The Pre-Christian Religion in the Region of *Dolenjska* – Bird-hills near Hill-forts

Sever presented the remnants of the pre-Christian way of life and religion in the region of *Dolenjska* [Lower Carniola], i.e. in the central and southeastern Slovenia – the yellow part in the Figure 26. During his over 30 years lasting field research in the region of *Zahodna Dolenjska* [Western Lower Carniola], contacting over 5,000 inhabitants of the region, he collected the traces of the pre-Christian religion, which survived there the World War II and were gradually disappearing.

One of the characteristics of this pre-Christian religion was the revering of waters, i.a. the sources *Trmožnik* [Three-men-source]. The people were using the healing abilities of the holy waters well into the 20th century AD. Another characteristc was the believing that the birds, especially the cranes, carry the souls of the deceased into the sky, for example onto the other side of the moon. In this respect there is characteristic the often appearence of pairs of hills, i.e. of *gradišča* [hill--forts] and nearby *tičnice* [bird-hills].

The Pre-Christian Religion in *Posočje*

Posoško staroverstvo – the Old (pre-Christian) religion around the *Soča* River valley in western Slovenia at the present border with Italy was practicised as late as around 1970 AD, and some still existing traces of it are in research. This area is in Figure 26 in the light blue area above the sign GO in the yellow circle. The most comprehensive reports about it presented Medvešček and the research continue the members of the Matjar society.

Medvešček collected the oral tradition and sacred objects, mainly stones, referring to the (pre-Christian) *staroverstvo* [Old Religion] in the westernmost Slovenia, at the upper *Soča* River valley. To him were disclosed only some parts of this religion relating to males, whereas he was mainly not entrusted about the details relating to females.

Posoško staroverstvo was not only a religion. It was also the way of life in total freedom respecting also the freedom of the others.

There was worshipped only one god, the goddess *Nikrmana*, which was named in some places also *Velča mat* or *Velika mat* [The Great Mother]. There were worshipped also a lot of holy spirits (*Prh, zdravilec Belin* = Belin the healer, *nadduh* = head-spirit, *dobri duh* = good spirit, *črni duh* = black spirit, *podzemni duh* = sub-soil spirit, *vodni duh* = water spirit, *deževni duh* = rain spirit, *gozdni duh* = forest spirit, *veterni duh* = wind spirit, *ognjeni duh* = fire spirit, etc).

The good spirit created the Sun, the sky, the day and the man. The black spirit created the Moon, the Earth, the night, and the female.

The creation of the world proceeded as follows: Sometimes in the timeless time lived *Nikrmana* in the non-world, where shined many stars, moons and suns. The life was there rich and diverse. Because there was not enough place, *Nikrmana* planned to move part of that somewhere else. She recalled to her mind the Earth, where the darkness dominated and she sent there few stars. To know the effect she sent there the golden eagle. Upon return, the golden eagle reported that part of the Earth is still too dark. She sent there an additional moon. After the next visit the golden eagle reported that the moon is unsure since there shines sometimes only a half of it, next time the whole, the third time the moon is not there since it throws light to other parts of the Earth. To solve the lighting of that part of the Earth *Nikrmana* sent there the sun. Then the eagle reported that there is plenty of light. During the next days, she sent there big, heavy clouds full of water. They circulated for weeks above that part of the Earth and wetted it so that there appeared the rivers *Soča*, Idrija, Bača and other ones, as well as many brooks and springs. The bolts brought there the fire. When there was enough water, *Nikrmana* sent there

The Pre-Christian Religion in the Karst Region

Kras – the Karst region is in the southwest part of Slovenia near the city Triest (in Figure 26 it is the light blue area below the mark GO in the yellow circle). About the pre-Christian religion in that region reported Čok. Hrobat Virloget discussed it in view of the East Slavic pre-Christian religion.

There were mentioned the deities (*Triglav, Deva, Devač, Kres, Svarožič, Dajbog* (*Dajbugec*), *Makurška*, and *Mora*), the beings (T*ntava, Vedomec, Besi, Vilež, Štrige, Šembilja*, and *Krvavo stegno*), the important toponyms (*Triglavca*, *Trhlovca* (*Terglouca*, *Triglouca*), *Čuopa*, *Gluhi du*, *Uruće*, *Kres*, *Črne bukve*, *Trebenski kamen*, *Sodna jama*), several rituals, spells, bewitchments and dewitchments, fairy tales, etc.

Staroverstvo, i.e. the Old Religion, the pre-Christian religion, was practiced in secret till recently and some traces of it are still being noticed and researched. In different regions of Slovenia it is somewhat different.

The most archaic of them is the *Posoško staroverstvo* – the Old Religion around the upper *Soča* River valley. For it is characteristic the single, female god, the Great Mother, a number of male spirits, female rivers vs. male brooks, the importance of triangular features, of rocks and trees, of stone and wood, of holy mountains and caves, of way of life in peace, of reincarnation of the souls, as well as the religion knowledge and practice of females separate from that of males. The importance of stones and wood indicates the continuity of the Stone Age tradition, since there were revered and used such stones as they appear in finds from the Stone Age.

In view of the independent novel observations, the roots of the *Posoško staroverstvo* derive from more than 70,000 years ago in this and surrounding regions. The independent novel observations are i.a.:

- The cosmogenic mega-tsunami of 71,000 to 57,000 years ago, most probably about 68,000 years ago, coincident with MIS 4, which devastated most of the continents but leaved in Europe intact the area from the Alps till the Carpathian mountains including the three regions of present Slovenia mentioned above, cf. Figure 4, p. 45;
- The observation in old skeletons across Europe of the Y chromosome haplogroups (in parentheses the approx. time of their formation (years ago): BT (130,700), CT (88,000), C (65,900), F (65,900), HIJK (48,500), IJK (48,500) and IJ (47,200), I (42,900).

Slovenes

Slovenes are living in Europe, mainly in Republic Slovenia. Parts of them are living also as minorities in the surrounding countries, Austria, Hungary, Croatia, and Italy. According to the linguist M. Greenberg, those being Slovenes by origin are to be named Slovenes, whereas the citizens of the state Slovenia are to be named Slovenians.

There are conflicting explanations about the origin of Slovenes. Until the end of the 19th century, the general understanding was that Slovenes were indigenous. Slovene scholars educated at German-speaking Austrian universities introduced the Austro-Prussian explanation that the ancestors of the Slovenes came from the Pripyat marshes in the 6th century AD. Several different explanations have emerged as to how and where they came from. In 1985, however, Tomažič, Šavli and Bor revived the awareness that Slovenes have always lived in Slovenia. They have moved the date of their formation from the 6th century AD to the 12th century BC.

The new information known during the last decades gives us a more definite description.

In Tables 7 and 8 we see the data for Slovenia. In Slovenia predominate the Y chromosome haplogroups R1a > I > R1b >> others, while the Y chromosome haplogroup N has not been observed at all.

Table 7. *Y chromosome haplogroups (%) in Slovenia.*

Haplogroup / Reference	I1	I2* + I2a	I2b	∑ I	R1a	R1b	G	J2	J* + J1	E1b	T	Q	N
ydna.eu 2015	9	20,5	1,5	31	38	18	1,5	2,5	0	5	1	0	0
Zupan et alt. 2013	11,9	14,9		28,2	37,5	20,3	3	5,3	0,2	3,7			

Table 8. *mt haplogroups (%) in Slovenia.*

Haplogroup / Reference	U1	U2e	U3	U4	U5a	U5b	U6	U7	U8	U*	∑U
Ottoni et alt. (2011)	0	0,96	1,92	5,77	7,69	2,88	0	0	0	0	19,22
Zupan et alt. 2015	1,4	3,5	2,6	2,8	7,3	2,5	0,2				26,2

	H*	HV0	HV	J	T1	T2	K	N1	N2	X	M	L
Ottoni et alt. (2011)	47,12	6,73	0	9,62	0,96	4,81	3,85	1,92	4,81	0,96	0	0
Zupan et alt. 2015	11,2	2,7	3,8	11,2	1,9	8,7	5,9	1,9	0	1,2		

For Reflection

At an Assembly of the Slovenian Historians' Associations a historian said in the conclusion: "Anyone 'in the profession' reading the websites described here may ask himself one or more questions, perhaps even very unpleasant ones, about the very meaningfulness and existence of the profession as such." … He went on to say: "Perhaps we are all together in a more or less terrifying delusion, no longer called 'the profession', but in other words – colleagues, what if we have collectively missed our profession and – unknowingly! – our last hour is striking?"

If we contrast this with all the information known from before or only recently, e.g. that presented in this book, then we can say that the above observation of the historian is partly relevant. It is not that the historians have missed their profession or that they are in their last hour. It is only that they still adhere to the inadequate and outdated Austro-Prussian historical thought (which, admittedly, is still largely held elsewhere in Europe) and give the impression to the others that they are defending it on principle.

Instead of accepting novel findings, which were first pointed out to them, not always in an appropriate way, but nevertheless, by Slovene researchers of the Slovene past who have worked and who are working outside the academic societies. The main point is that the Slovenian historians, instead of adapting their interpretations to the available data in accordance with the scientific method, censor and reject data that are not in line with the interpretations they have learned and which they still uncritically maintain.

The Slovenian historians have not lost their profession and are not facing ruin, but only the necessity of replacing the outdated paradigm with a new and better one. The only question is how much longer they will put it off. Whether they will do it immediately and, by serious and imaginative work in accordance with the scientific method, put themselves to the top of this branch of world science, or whether they will continue to act as mere followers (we too) in a "more or less terrifying delusion", hanging back and copying from foreigners.

Rather than for the times in which there are no written sources taking the lead in a synergistic interdisciplinary evaluation of the data provided by other scientific disciplines. And not basing on outdated interpretations, as hitherto, but consistently on the basis of data.

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Anton Perdih

ORIGIN OF EUROPEANS

1st Edition

Typesetting and layout:
ONZ JUTRO

Published by:
Založništvo Jutro, Jutro d.o.o.,
Črnuška cesta 3, SI-1000 Ljubljana

Printed in Slovenia (print on demand), 2022.

Photos of The Neanderthal Flute *and of* The Wheel from Ljubljana Marshes *on the front cover and page 27 are courtesy of Narodni muzej Ljubljana and Mestni muzej Ljubljana.*

JUTRO d.o.o., Založništvo in trgovina,
Črnuška c. 3, p.p. 4986, 1001 Ljubljana, Slovenia

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