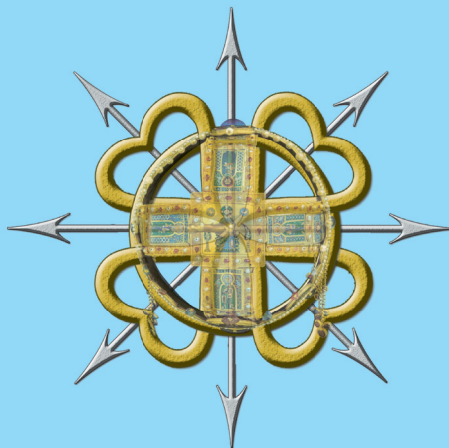


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**Was the Uralic Homeland
in the Danube Basin?**

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WAS THE URALIC HOMELAND IN THE DANUBE BASIN?

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Abstract: The location of a Proto-Finno-Ugric homeland was debated for a long time based on cognate words and paleobotany, whose consideration cannot lead to a firm conclusion. Recent archaeogenetic research showed a population movement from the Neolithic Danube Basin to Crete where the Minoan civilization flourished during the Bronze Age. In addition, the Minoan scripts have been deciphered as a Finno-Ugric language. These two facts suggest that the Proto-Finno-Ugric homeland was in the Danube Basin.

1. INTRODUCTION

Linguists have proposed a Finno-Ugric language family with a Volga-Kama or a Siberian homeland that existed about 5000 years ago (Kiss and Pusztai, 2018). The Finno-Ugric classification of Hungarian remains controversial for two reasons. First, the linguistic and geographic connection between Hungarian and other Finno-Ugric languages is less obvious than those connections among the Indo-European languages. Second, there is no Volga-Kama or Siberian archaeological site from around 3000 BC that can be identified as Finno-Ugric. In fact, the argument regarding the homeland was based on some combination of paleobotany and linguistics, for example by Hajdú (1964). Paleobotany can track the changes in the habitat areas of various plants due to either climate change or human activity such as the spread of agriculture. Unfortunately, paleobotany and plant name

cognates can tell neither the location nor the time of the homeland. Any attempt to find these falls into one of the following two cases.

In the first case, the time of separation from the common homeland is assumed. Then, from the probable native plants, paleobotany, and the supposed separation time from the homeland, the homeland's location is deduced:

(native plants) and (paleobotany) and (separation time from homeland)
→ (homeland location)

In the second case, the location of the homeland is assumed. Then, from the probable native plants, paleobotany, and the location of the homeland, the time of separation from the common homeland is deduced. For example, the lack of common agricultural crop names and the theory of the Volga-Kama homeland suggest that the homeland existed before farming reached the Volga-Kama region ca. 6000 years ago. Hence the deduction is:

(native plants) and (paleobotany) and (homeland location) → (separation time from homeland)

Hence, the time of separation from the homeland may determine the location of the homeland, and vice versa, but we cannot infer both at the same time. This finding is true even if we have perfect knowledge of paleobotany. However, our current knowledge of paleobotany is still quite uncertain.

Instead of paleobotany, archaeogenetics aided the investigation of Hungarian origins in recent years. The archaeological evidence shows that the 9th century conquerors of the Carpathian Basin were genetically closest to Hunnish and Turkic groups. Árpád, the leader of the 9th century conquerors, shared Y-chromosome with a Hun from Mongolia (Keyser

et al., 2021). His Y-chromosome haplogroup may originate in Northern Afghanistan (Nagy et al., 2021). Therefore, it is unlikely that the 9th century conquerors brought the Hungarian language into the Carpathian Basin, as previously assumed. There are many examples in history of a small conquering group having little effect on the local language. For example, after the Norman conquest led by William the Conqueror, English remained the language of Great Britain. English grammar and basic vocabulary are still clearly of Germanic origin, although English borrowed many words of French origin after the Norman conquest. It seems to me that the Hungarian language has changed similarly, because it has remained a Finno-Ugric language in the Danube basin, while taking many Turkish words from the incoming peoples. Cser and Darai (2008), Magyar (1930), Krantz (1988) and Radics (1992) also agree with the indigenesness of the Hungarian language in the Carpathian Basin. These authors clearly support the indigenesness of the Hungarian language in the Danube Basin, because the Danube Basin includes the Carpathian Basin.

László (1999) thought that the Avars could have brought Hungarian language speakers with them, but the archaeogenetic data do not show a clear difference between the Avars and the 9th century conquerors. Therefore, it is more likely that the Hungarian language is native to the Carpathian Basin and borrowed certain words from Avar or Turkish conqueror groups. The Hungarian etymological dictionaries, such as Zaicz (2006), call these words pre-conquest Turkish loanwords.

During my research on the Minoan civilization, I gradually concluded that the Finno-Ugric homeland was in the Danube Basin. I believe that there is now enough scientific evidence for a Danube Basin homeland to convince objective researchers everywhere. In Section 2, I review my research on the Minoan civilization. Then in Section 3, I summarize the arguments for the Finno-Ugric homeland in the Danube Basin. Finally, in Section 4, I give some conclusions.

2. THE DECIPHERMENT OF THE MINOAN SCRIPTS

I accidentally discovered the Minoan-Hungarian linguistic relation when I was learning Greek as a J. William Fulbright Scholar and Visiting Professor at the National and Kapodistrian University of Athens in Spring 2008. I saw that some Greek words are surprisingly like Hungarian words phonetically and semantically.

I discovered the Hungarian and Greek cognate words independently of similar observations of Aczél (1975) and Varga (2006). Unfortunately, these authors used their discovery to unscientifically argue against the existence of the Finno-Ugric language family. In contrast, I have noticed that in the Hungarian-Greek cognate word pairs, the Hungarian word originates from the proto-Finno-Ugric language according to comparative linguists (Rédei 1988), while the Greek word is a Pre-Greek word according to Greek etymological dictionaries (Beekes 2009). The Pre-Greek words were likely borrowed from the Minoan language. Hence, instead of Greek-Hungarian cognates, it is better to talk about Minoan-Finno-Ugric cognates. Minoan-Finno-Ugric cognates show regular sound changes (Revesz, 2020b). Furthermore, I managed to show the existence of front-back vowel harmony in the Minoan language (Revesz, 2020). Front-back vowel harmony is a characteristic of the Hungarian language and can also be found in other Finno-Ugric languages.

I wrote my Ph.D. dissertation at Brown University under the supervision of Paris Kanellakis, a Greek professor of Cretan descent. He showed me the Phaistos Disk, a famous spiral Minoan writing that no one could decipher for more than a hundred years. At that time, I became interested in deciphering the disk, but I wrote my dissertation on “Constraint Query Languages.” It was not until 2008 that the question of translating the Phaistos Disk came up again. It was then that I first thought that if the Minoans spoke a language related to Hungarian, I might be able to decipher the Phaistos Disk. The essence of the solution is to find the phonetic values of the signs, which, after consistent substitution, give us a meaningful text

with Proto-Finno-Ugric words instead of current Hungarian words. The text of the Phaistos Disk is a prayer to the sun goddess (Revesz, 2016).

In addition to the Phaistos disk, I also managed to decipher twenty-eight Linear A inscriptions (Revesz, 2017) and the Arkalochori axe inscription (Revesz, 2017b). Linear A is a more advanced, abstract form of writing used by the Minoans in later times (Olivier, 1986). Of these twenty-eight Linear A inscriptions, most contain different fragments and variations of another prayer, commonly called the libation formula.

3. ARGUMENTS FOR THE DANUBE BASIN FINNO-UGRIC HOMELAND

One of the main problems in identifying the homeland is that, except for artifacts with writings, archaeological finds reveal nothing about the spoken language. Even inscriptions solve the question of spoken language only if there are enough of them for decipherment. Unfortunately, there is no generally acceptable decipherment of the Neolithic Danube Basin writings due to their small number and briefness. In contrast, the Minoan civilization has left us with about two thousand records written by Cretan hieroglyphs or the Linear A script (Olivier, 1986). This more favorable situation helped me decipher the Minoan writings.

The Minoan civilization began on the island of Crete in 3000 BC and ended in 1450 BC, when the Mycenaean civilization conquered Crete, where Linear A writing was replaced by Linear B writing reflecting the Greek language (Olivier, 1986).

The origins of the Minoan civilization have long been disputed. By a reanalysis of the Minoan archaeogenetic data of Hughey et al. (2013) and Lazaridis et al. (2017), I was able to establish that the ancestors of the Minoans lived in the Danube Basin and the western Black Sea littoral area in

the Neolithic (Revesz 2019, 2021). In addition, using a mathematical metric, the closest parallels of Minoan art motifs were also found in the Neolithic and the early Bronze Age Danube Basin (Revesz, 2019b). Archaeogenetic and artistic connections both suggest that the Minoans arrived by ship from the western shores of the Black Sea to the island of Crete.

According to my decipherment, the Minoan scribes spoke a language that was close to Proto-Ugric or Proto-Hungarian. It is not certain that the language of the scribes is the same as the language of the Minoan people. Perhaps only the language of the ruling class was recorded in the Minoan writings. Such duality has occurred elsewhere. For example, in medieval Hungary, Latin was written, while the people spoke Hungarian. Even if Minoan writing was the only language of the ruling class, their contemporaries in the Danube Basin spoke the same language as the Linear A scribes. Hence, from the fact that the Minoan scribal language is like Proto-Ugric or Proto-Hungarian, we can conclude that the Danube Basin was the homeland of the Proto-Hungarians. The question arises whether it was also a Proto-Finno-Ugric homeland.

The Minoan civilization was a Bronze Age civilization, which means that the separation between the Minoans and Proto-Hungarians must have occurred at the beginning of the Bronze Age. In contrast, the separation between the Hungarians and the Baltic and Urals area Finno-Ugric peoples must have occurred before the beginning of the Neolithic period, because there are no cognate agricultural words between Hungarian and the Ob-Ugric Khanty and Mansi languages, which are considered to be the closest to Hungarian. Therefore, the separation had to occur during the Mesolithic period. During the Ice Age, the Danube Basin was a human refuge area.

Krantz (1988) believed that the Proto-Finno-Ugric language developed in the Danube Basin during the Mesolithic. The Danube Basin was also inhabited during the Ice Age. Presumably, as the climate warmed, the ancestors of the Samoyeds and the Finno-Permians migrated northward. The Uralic and, within it, the Finno-Ugric language family tree, can be explained

by assuming that the groups that are furthest away from the Hungarian language in the language family tree separated earlier. Instead of a Danube Basin origin, László (1961), Makkay (2003), Szabó (2004) and Wiik (1997) supported a Pontic Steppe origin of Finno-Ugric peoples. They also gave various theories about the Finno-Ugric peoples' migration northward.

The early spreading and mixing of Finno-Ugric groups with the local population means that there are few common genetic links among Finno-Ugric peoples. A large percentage of early European hunter-gatherers belonged to the U5 mitochondrial haplogroup, which is inherited maternally. The Finno-Ugric peoples still have a relatively higher percentage of the U5 haplogroup than their non-Finno-Ugric neighbors. Although the mitochondrial chromosome is small relative to total DNA, the mitochondrial chromosome is very important because it is closely related to spoken language in matrilineal societies, which were common in Europe before the arrival of Indo-Europeans (Gimbutas, 1991).

However, not only the hunter-gatherers but also the Corded Ware Culture farmers spread from the Pontic Steppe to the Danube Basin and the Baltic area, leaving a genetic trace in present day Estonians (Saag et al., 2017). This explains the relatively high percentage of the R1a y-DNA haplogroup in both Estonians and Hungarians even today.

Table 1. Some horse-related cognate words.

language	ass	horse	halter	saddle	wagon	wheel
Finnish	hebo 'horse'					
Greek	hippo 'horse'					
Hungarian		ló	fék	nyereg	sze-kér	ker-ék
Khanty		loy	behch	nöyer	ji-ker 'sledge'	
Mansi		low	päk	näwrä		kir 'rotate'
Sumerian	kibid ₃	lal 'team of equids'	pa		u4-sakar 'half wheel' gigir 'wagon, wheel'	hara _x 'wagon part'

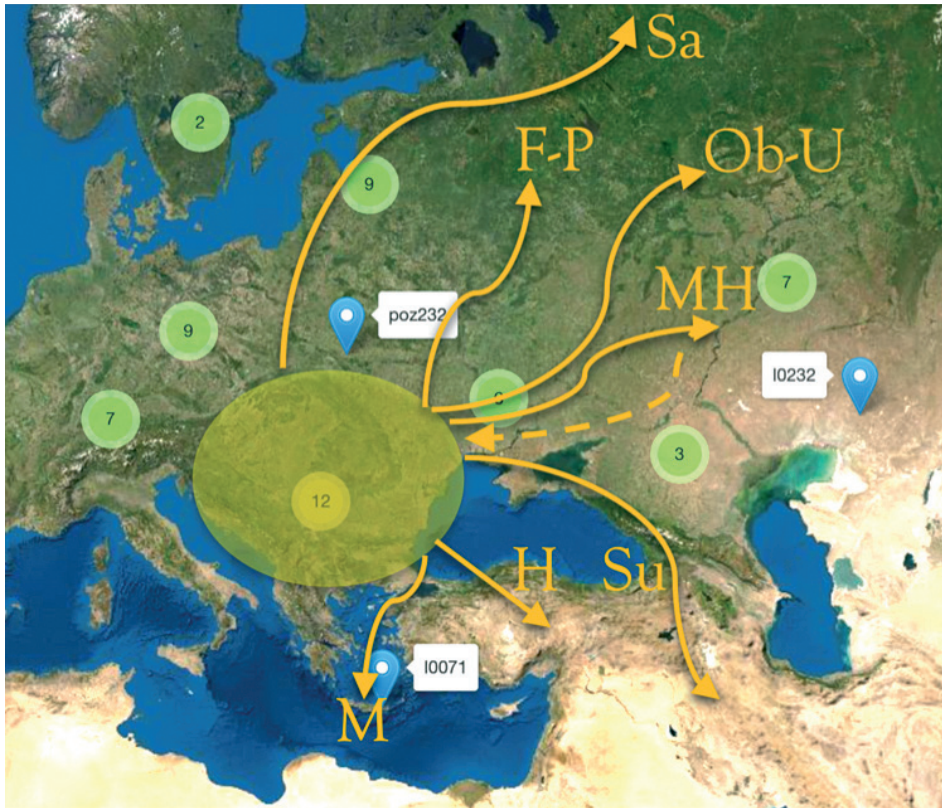


Figure 1. The Danube Basin Uralic or Finno-Ugric homeland (yellow oval) with the hypothetical migrations by the Samoyeds (Sa), Finno-Permians (F-P), Ob-Ugrics (Ob-U), Sumerians (Su), Hatti (H), and Minoans (M), and those Proto-Hungarians who went to Magna Hungaria (MH), some of whom may have returned to the Danube Basin (dashed arrow). The location of U5a1 mtDNA haplogroup samples from the Bronze Age or earlier are indicated using green circles (with the number of samples) or blue circles in the case of single samples. The U5a1 mtDNA data and background map is based on the ancient mitochondria database <https://amtdb.org> (Ehler, 2019).

The above simplified series of events needs some modification because the Hungarians and the Ob-Ugric peoples have some cognate horse-related words. These cognate words can be explained by the assumption that they are loanwords that spread from the Pontic Steppe from another

language group to both Hungarians and Ob-Ugric peoples, or more likely the Ob-Ugric people learned horseback riding on the Pontic steppe. The invention of horseback riding reduced travel time. Therefore, after separating during the Mesolithic and learning different agricultural words during the Neolithic, the Proto-Hungarians and the Proto-Ob-Ugrics were able to connect with each other. This connection may have resulted in an exchange of horse-related words between the Proto-Hungarians, the Proto-Ob-Ugrics, the Sumerians and some other groups as shown in Table 1. Sumerian *gigir*, *lal* and *pa* appear as entries 811, 1545 and 1923 in Parpola (2016), while the other Sumerian words are available from the online Pennsylvania Sumerian Dictionary (ePSD) at <http://psd.museum.upenn.edu>. The Khanty and Mansi cognate words can be found in Zaicz (2006).

The Sumerian cognates suggest that the Sumerians originated from the Pontic Steppe as suggested by Parpola (2016) or from the Danube Basin (Revesz 2019c). In addition, it is possible that some Proto-Hungarians went east to *Magna Hungaria* near the Urals, where they were met by friar Julian in the 13th century. Figure 1 shows a summary of all the above-mentioned hypothetical migrations from the Danube Basin homeland. There could be other migrations that we have not dealt with in this paper.

4. CONCLUSION

It is time to replace the Volga-Káma region homeland theory based on paleobotany and some presumably common plant names with the Danube Basin homeland theory based on archaeogenetics, art history, and the decipherment of Minoan scripts. This homeland theory change does not contradict the pure linguistic findings of Finno-Ugric linguistics (Darai 2021).

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BIOGRAPHY

Peter Revesz was born in Budapest, Hungary in 1965, went to the USA when he was fifteen years old, and earned a B.S. degree *Summa cum Laude* with double major in Computer Science and Mathematics at Tulane University by age 20. He earned a Ph.D. in Computer Science at Brown University, where his dissertation “*Constraint query languages*” introduced and analyzed new database models and query languages for them. He was a postdoctoral fellow at the University of Toronto before he joined the University of Nebraska-Lincoln, where he is currently a full professor. His main areas of research are databases, data mining, bioinformatics, and computational linguistics on which he has over 250 refereed publications. He is the author of two textbooks, including the second textbook “*Introduction to Databases: From Biological to Spatio-Temporal*,” which was published by Springer.

Dr. Revesz held visiting appointments at the IBM T.J. Watson Research Center, INRIA, the Max Planck Institute for Computer Science, the University of Athens, the University of Hasselt, the University of Helsinki, the U.S. Air Force Office of Scientific Research, and the U.S. Department of State. He is a recipient of several awards including an Alexander von Humboldt Research Fellowship (2005), a Jefferson Science Fellowship (2011), an AAAS Science & Technology Policy Fellowship (2012), and two J. William Fulbright Scholarships (Greece in 2008, and Hungary in 2017).