

Languages and migrations in prehistoric Europe

Roots of Europe summer seminar

7–12 August 2018

*National Museum of Denmark
& the University of Copenhagen*



Languages and migrations in prehistoric Europe

Roots of Europe summer seminar

7–10 August 2018

National Museum of Denmark

Festsalen

Ny Vestergade 10

Prinsens Palæ

DK-1471 København K

11–12 August 2018

University of Copenhagen

Faculty of Humanities (KUA)

Multisalen (Room 21.0.54)

Emil Holms Kanal 6

The *Roots of Europe* Summer Seminar

Preface

The *Roots of Europe* Research Center has its origins in a so-called Programme of Excellence funded by the University of Copenhagen and hosted by the Department of Nordic Studies and Linguistics. The founding members were a group of historical linguists specializing in Indo-European Studies, a discipline that goes back two centuries at the University of Copenhagen, to the days when the linguist and philologist Rasmus Rask (1787–1832) carried out his ground-breaking research.

The programme marked a new epoch in modern-day Indo-European studies in that it began to incorporate the findings of archaeology and genetics in its quest to understand the prehistorical spread of the Indo-European languages. This was not the first attempt to relate the many branches of the family tree to material cultures and, indeed, genes. However, previous attempts were abandoned, after the field was, figuratively speaking, taken hostage by a nefarious alliance of pseudoscientific researchers and politicians around the turn and first half of the 20th century.

After the Second World War, collaborations between archaeologists and linguists became rare and generally frowned upon. Many of the results of such collaborations were still at a relatively speculative stage, and the post-war political climate was understandably averse to this sort of speculation.

By the turn of the millennium, however, new tools emerged in the form of ancient DNA and strontium-isotope analysis; some of the pioneering studies emerged from the University of Copenhagen's Center for GeoGenetics. They furnished us with a supplementary means of re-examining the findings of linguists and archaeologists; this has meant a huge leap forward for all the disciplines involved. We can now tie reconstructed languages to actual material cultures.

The Roots of Europe Summer Seminar is a gathering of internationally leading researches in this field: linguists, archaeologists and geneticists.

The first four days of the seminar will take place at the National Museum of Denmark. The aim of these talks is to offer an overview of the current sta-

tus of knowledge into the Indo-European and related questions, including the latest scientific findings and outlooks into future research. The focus will be on languages and migrations. Participants will have ample opportunity to view the archaeological collections – among the largest in Europe – through the lens of our new understanding of languages, genes and migrations.

The last two days will take place at the Department of Nordic Studies and Linguistics, at the University of Copenhagen and will be devoted to more specialized, front-line research and discussions of future research.

All are welcome to attend the talks and to participate in the discussions.

Acknowledgements

The organizers wish to thank the Department for Nordic Studies and linguistics at the University of Copenhagen for generous support of this event.

We also thank the Department of Ancient Cultures and the Mediterranean at the National Museum for further for financial support and for accommodating the event.

Benedicte Nielsen Whitehead is grateful to everyone at the the Department of Ancient Cultures and the Mediterranean for their help and advice in all things archaeological. Special thanks to Frank Ruskai (NatMus) and Thomas Olander (*RoE*) for advice on the layout of this booklet.

The booklet was funded by the *Homeland project* financed by the Carlsberg Foundation.

The organizers:

Benedicte Nielsen Whitehead
 Roots of Europe Research Center
 Department of Nordic Studies and
 Linguistics
 University of Copenhagen

Lasse Sørensen
 Department for Ancient Cul-
 tures of Denmark and the
 Mediterranean
 National Museum of Denmark

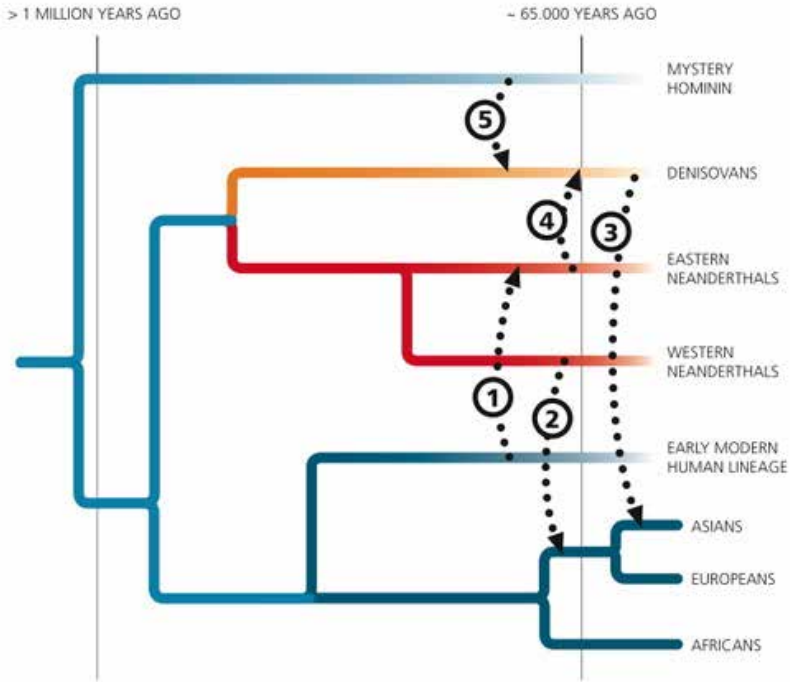
Tuesday, 7 August

At the National Museum

4

Tuesday, 7 August

10:30 – 10:45	Announcements
10:45 – 11:45	The Indo-European languages Thomas Olander PhD, DrPhil University of Copenhagen
11:45 – 12:00	Coffee break
12:00 – 12:30	Introducing <i>The Homeland Timeline Map</i> : Prehistoric migrations in “real time” Mikkel Nørtoft MA
12:30 – 14:00	Lunch Break
14:00–15:00	Indo-Europeans, Aryans and Nazi mythology Benedicte Nielsen Whitehead PhD University of Copenhagen
15:00 – 15:30	Coffee break
15:30 – 16:30	The genetic evidence for prehistoric migrations Hannes Schroeder PhD University of Copenhagen



A family tree of hominins. Language may have developed already at a stage that was common to Modern man/*Homo habilis* and Neanderthals, 6–800,000 years ago. Proto-Indo-European is currently thought to have emerged around 6,000 years ago. Image by Søren Ajspur, National History Museum of Denmark.

Wednesday, 8 August

At the National Museum

6

Wednesday, 8 August

10:30 – 10.45	Announcements
10:45 – 11.45	The Indo-Europeanization of Europe Prof. Kristian Kristiansen University of Gothenburg
11:45 – 12.00	Coffee break
12:00 – 12:30	The chariot, the horse and the winged <i>depos</i> : Once again on the journey of the Sun-god Laura Massetti PhD University of Copenhagen and Harvard Center for Hellenic Studies
12:30 – 14:00	Lunch break
14:00 – 15:00	Indo-European society and language: An archaeolinguistic perspective Prof. Birgit Anette Olsen University of Copenhagen
15:00 – 15:30	Coffee break
15:30 – 16:30	Celtic-Germanic relationships: 4000 years as neighbours Adam Hyllested PhD University of Copenhagen

Thursday, 9 August

At the National Museum

10:30 – 10:45	Announcements
10:45 – 11:30	Prehistoric Scandinavian disruptions Lasse Sørensen PhD National Museum of Denmark
11:30 – 11:45	Coffee break
11:30 – 12:45	Reflections on the introduction of Indo-European in southern Scandinavia: The archaeological evidence Rune Iversen PhD University of Copenhagen Guus Kroonen Universities of Copenhagen and Leiden
12:45 – 14:00	Lunch break
14:00 – 15:00	Emergence of the Germanic languages in Northern Europe Seán Vrieland PhD University of Copenhagen
15:00 – 15:30	Coffee break
15:30 – 16:30	The Bronze Age agricultural expansion into Norway – including northernmost Norway – as demonstrated by the iconographic, rock art, evidence Flemming Kaul DrPhil National Museum of Denmark

7

Thursday, 9 August

Friday, 10 August

At the National Museum

∞

Friday, 10 August

10:30 – 10:45	Announcements
10:45 – 11:45	The archaeology and linguistics of Indo-European origins and spread Prof. David Anthony Hartwick College
11:45 – 12:00	Coffee break
12:00 – 12:30	The diseases of the Indo-European peoples Matilde Serangeli PhD University of Copenhagen
12:30 – 14:00	Lunch break
14:00 – 15:00	Migrations in a long-term perspective Jeanette Varberg National Museum of Denmark
15:00 – 15:30	Coffee break
15:30 – 16:30	Homeland theories Prof. James P Mallory Queen's University of Belfast



Funnel beaker from Skarpsalling.
Appr. 3200 bce. National Museum of
Denmark (Room 5)

6

Friday, 10 August



Items of the single-grave cul-
ture: Corded ware, amber and
a battle ax from Møbjeriggård.
National Museum of Denmark
(Room 6)

Saturday, 11 August

At the University of Copenhagen

10

Saturday, 11 August

10:30 – 10:45	Announcements
10:45 – 11:45	Kristian Kristiansen University of Gothenburg
	T.b.a.
11:45 – 12:00	Coffee break
12:00 – 12:30	Florian Wandl From Proto-Indo-European to Russian: A study of sound change and its relative chronology University of Zürich
12:30 – 13:30	Lunch break
13:30 – 14:30	'The first horse herders and the impact of early Bronze Age steppe expansions into Asia' Guus Kroonen PhD Universities of Leiden and Copenhagen
14:30 – 15:00	Coffee break
15:00 – 16:00	Linguistic paleontology James P Mallory Queen's University of Belfast

Sunday, 12 August

At the University of Copenhagen

10:30 – 10:45	Announcements
10:45 – 11:15	Rümselçuk Caravanserais of 13th Century Anatolia Else Marie Johansen CandArch
11:15 – 11:30	Coffee break
11:30 – 12:30	Tba Prof. David Anthony Hartwick College
12:30 – 13:30	Lunch break
13:30 – 14:30	A critique of recent developments in the archaeology of the Indo-Europeans James Alan Johnson PhD University of Copenhagen
14:30 – 15:00	Coffee break
15:00 – 16:00	Panel discussion All lecturers

11

Sunday, 12 August

The Indo-European languages

Thomas Olander PhD, DrPhil

Thomas Olander will open the conference with an introduction to the Indo-European language family, the most widely spoken language family in Europe and western Asia.

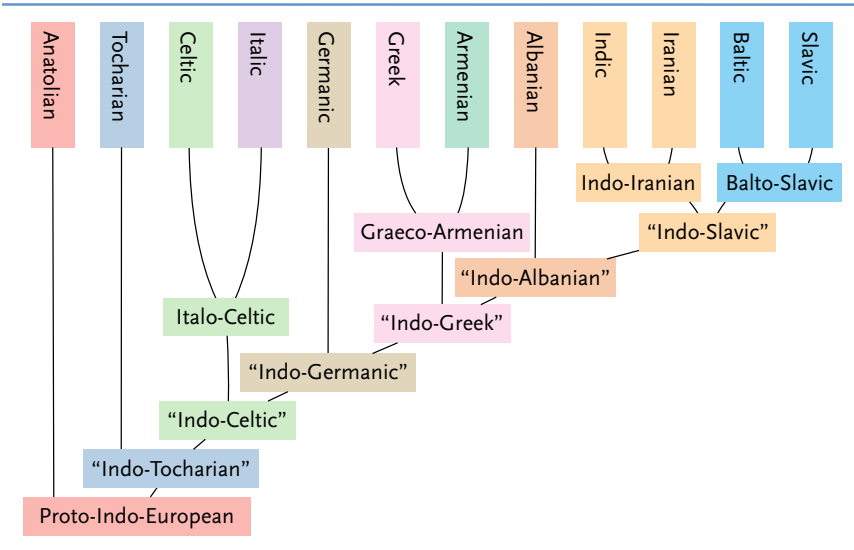
The Indo-European language family includes languages such as English, German, Spanish, Russian, Hindi and Greek and is today spoken by around half of the world's population.

Thomas Olander will present the main branches of the language family and the most recent theories about their mutual relationship in sub-branches.

12

Tuesday, 7 August

Thomas Olander is a historical linguist affiliated with the Roots of Europe Research Center. As head of the research project *The Homeland: In the footprints of the early Indo-Europeans*, his current expertise focuses on the branching-out of the Indo-European family. The project is funded by the Carlsberg Foundation.



A binary-split model of the Indo-European family tree, showing the relative chronology of the splits into minor subgroups. Graphics by Thomas Olander.

Introducing *The Homeland Timeline Map*: Prehistoric migrations in “real time”

Mikkel Nørtoft MA

14

Tuesday, 7 August

Cross-disciplinarity is becoming increasingly important in the study of prehistory. Most notably, ancient genomics has recently revealed that prehistoric migrations were much more important than previously estimated.

However, since new game-changing data is constantly published, keeping up with the field of ancient genomics can be a difficult task, both for laypersons and researchers outside the field. Therefore, the *Roots of Europe*-housed project *The Homeland: in the footprints of the early Indo-Europeans*, has developed a tool – *The Homeland Timeline Map* – that aims to be useful to anyone studying prehistoric migrations and wanting an overview of the present state of knowledge.

The Homeland Timeline Map is an interactive online map that correlates data from the fields of ancient genomics and archaeology. Every feature on the map can be clicked/touched independently for further investigation. With its fluent time bar, it would appear to be the first map of its kind (known to its author).

Mikkel Nørtoft holds an MA in Indo-European Studies from the University of Copenhagen. He is currently a research assistant at the *Roots of Europe Research Center* where he works on the development of the *Homeland Timeline Map* and writes blog articles for the *Homeland* project about Indo-European migrations in a cross-disciplinary perspective. Throughout his studies and young career, he has focused on mixing linguistics, archaeology and genetics in the pursuit of a better understanding of prehistory.



Ancient genomic data is visualised by mapping, so far, 1,768 ancient individuals dated from 8200–1 BCE. Each is tagged with a coloured icon according to their affinity to basal ancestry clusters, as reported in the literature.

To help users who are not trained in archaeology understand the ancient DNA data and their relation to archaeology, an attempt is made to map the distribution and dating of archaeological cultures as well. As this is obviously a vast undertaking, this feature is still on an experimental stage, and is continuously updated.

Also at an experimental stage is the mapping of the earliest finds of wheels and wool in western Eurasia as well as secondary evidence or indications (e.g. zooarchaeological) of wool or wheels (e.g. iconography and clay models), since these types of data are important aspects of the many changes that happened around the time people migrated east and west from the Pontic-Caspian steppes.

Mikkel Nørtoft's talk will give a demonstration of the map and touch upon some of the strengths and weaknesses of this kind of visualisation of complex data. The map can be accessed freely at <http://homeland.ku.dk>.

Image above: Extract from <http://homeland.ku.dk>.

Indo-Europeans, Aryans and Nazi mythology

Benedicte Nielsen Whitehead PhD

16

Tuesday, 7 August

Benedicte Nielsen Whitehead will talk about how the discovery of the Indo-European languages has shaped modern history, most notably when Nazi ideology elevated the Indo-Europeans, or Aryans in the parlance of the day, to a status of supreme human beings.

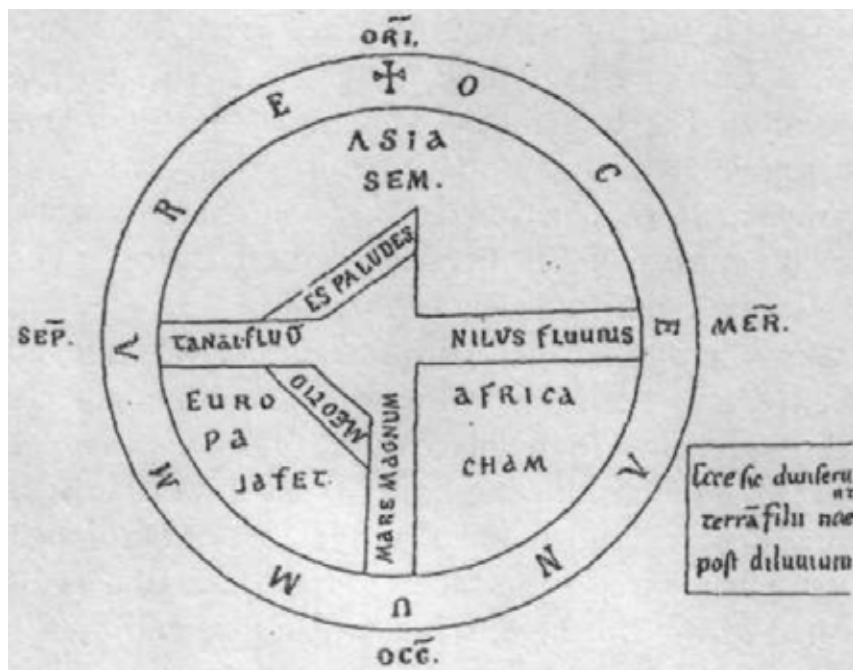
The talk will begin with the earliest perception that Western scholars had of the origin of language, at a time before the discovery of the European language's relationship with Sanskrit. The general consensus was that Hebrew, believed to have been spoken in the garden of Eden, was the mother of all languages.

The earliest account of how the major language families evolved is rooted in the Biblical story of Noah's sons, Shem, Ham and Japheth who became the forefathers of three nations: the Semites, the Hamites and the Japhetites, who divided the three known parts of the world between them: Asia, Africa and Europe.

When the Indo-European family of languages became an established fact, this theory had to be re-evaluated. In addition, scholars began to understand the value of language, including dialects and popular language, as a source of our past. Folklore and local customs became a new focus of scholarly interest, with the German critic, theologian and philosopher Johann Gottfried von Herder as a leading figure. He proposed that all German-speaking peoples should be united in one nation.

This preoccupation with the local and popular blossomed among the Romantics. However, this period also saw the development of pseudoscien-

Benedicte Nielsen Whitehead is a historical linguist affiliated with the Roots of Europe Research Center.



Noachide map, showing the division of the world between Shem, Ham and Japhet in Asia, Africa and Europe. The text box reads: *Ecce sic dividerunt terra filii noe post diluuium* "This is how the sons of Noah divided the world after the Flood". From: The Abbey library of Saint Gall, Isidore-Codex 236.

tific, racist research and emerging fascism. While Herder had a fascination with all nations and all languages, a new generation of European scholars wanted only one proposed 'race', which they mistakenly termed 'Aryan', to prevail. A world war ensued.

The association with Nazi ideology cast a dark shade over the research field and is the main reason why archaeologists and linguists stopped communicating after the Second World War. This silence was only broken after geneticists entered the debate and paved the way for a more sober and informed discourse.

The genetic evidence for prehistoric migrations

Hannes Schroeder PhD

18

Tuesday, 7 August

Ancient DNA has revolutionized our understanding of human evolution and the study of human prehistory in recent years. Ancient genomes provide fascinating insights into prehistoric migrations and the ways in which the genetic make-up of human populations has changed as a result of these population movements, demographic factors, and natural selection.

These breakthroughs are tightly linked with the advent of next-generation sequencing and our ability to isolate and sequence minute quantities of ancient DNA.

In his talk, Hannes Schroeder will talk about how ancient DNA is being used to map prehistoric migrations and to explore the relationships between prehistoric cultures.

Hannes Schroeder is Assistant Professor at the Center for GeoGenetics, University of Copenhagen, one of the world's leading research centers in ancient DNA. He is an expert in ancient DNA and has a long-standing interest in archaeology and human migration. He is also the PI of the CitiGen project (www.citigen.org), a HERA-funded project which looks at how genomic data are currently being used to re-shape public understandings of the past.



The Indo-Europeanization of Europe

Prof. Kristian Kristiansen

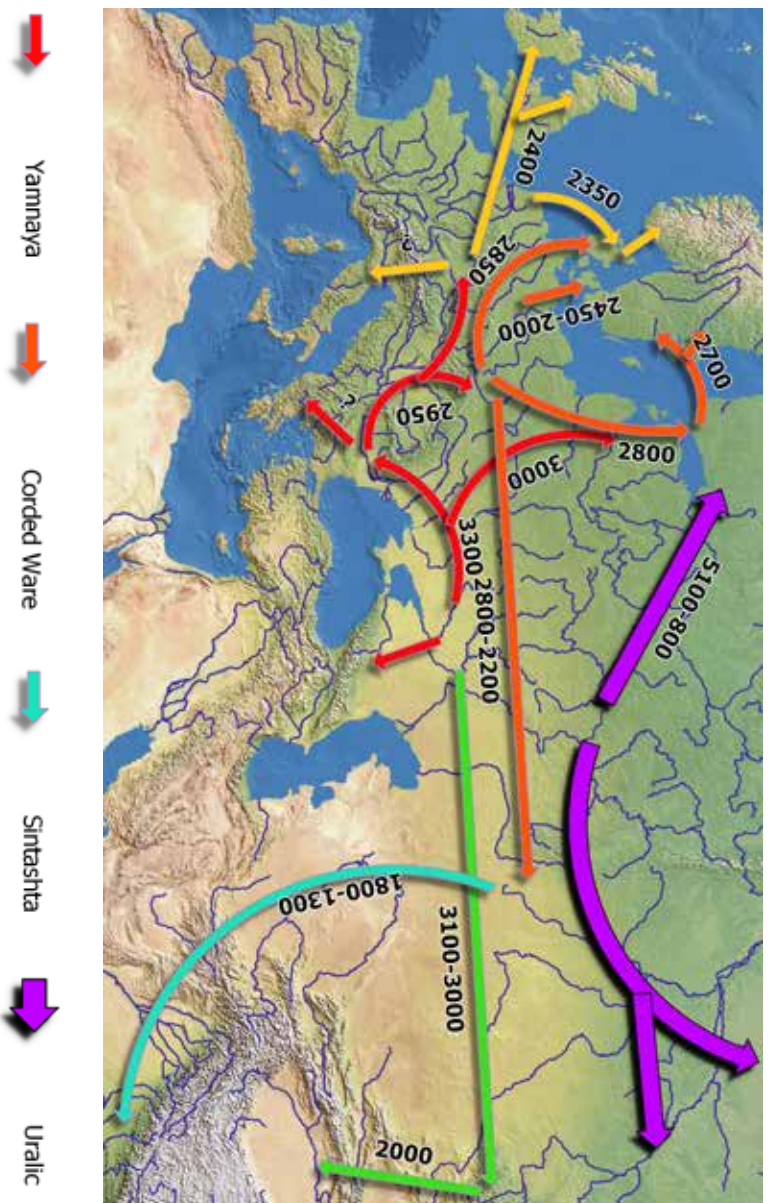
This talk explores the spread of languages and cultures in prehistoric Europe from the perspective of leading archaeologist in the field, Prof. Kristian Kristiansen.

20

Wednesday, 8 August

Kristian Kristiansen is professor of archaeology at the University of Gothenburg and a leading expert in the Bronze Age. He is currently heading a large-scale cross-disciplinary research project, *Towards a new European Prehistory: Integrating aDNA, isotopic investigations, language and archaeology to reinterpret key processes of change in the prehistory of Europe* (funded by Svenska Riksbanken).

Prehistoric migrations, according to the steppe hypothesis. Map by Mikkel Nørtoft 2018.



The chariot, the horse, the winged *depos*: Once again on the journey of the Sun-god

Laura Massetti PhD

22

Wednesday, 8 August

The primitive universe is geocentric: the Sun-god traverses the world every day in order to bring light and life to men. By doing so, he guarantees the existence of the human race as well as the entire world.

Given the crucial role of the solar deity as the warrantor of the cosmic existence, primitive traditions from all over the world pullulate with stories about the journey of the Sun-god and the many risks that endanger the accomplishment of his route.

The Indo-European family is no exception. Indeed, the colourful patchwork of these diverse but related linguistic traditions provides us with insight into the complex daily routine of the Indo-European solar deity.

In the first part of her paper, Laura Massetti will present an overview of the main characteristics of the Indo-European Sun-god's journey. In the second part, she will focus on a single case-study. A fragment of the Greek lyric poet Mimnermus (7th century BCE) provides us with precise information about the journey of Helios, the Greek Sun-god. Helios moves on a chariot pulled by horses during the day, and on a winged vehicle during the night.

As the talk will illustrate, the distribution of the Sun-god's vehicles and animals documented in the Greek lyric fragment strikingly matches that

Laura Massetti is a Marie Curie fellow associated with the *Roots of Europe* research centre and a Fellow for Indo-European Linguistics at the Harvard Center for Hellenic Studies, Washington DC. Her current research project, *Family Myths*, aims at identifying inherited thematic elements within Greek narratives of the Archaic and Classical age.



Helios drives his chariot in the sky. Attic red-figure vase, ca. 430 BCE, British Museum, London.



Apollo travels across the sea on a winged tripod. Hydria of the Berlin Painter, Museo Gregoriano Etrusco, Città del Vaticano.

found in the Vedic hymns about the Divine Twins, the so-called *Aśvinā/Aśvinau* or *Nāsatyā/Nāsatyau*. These deities are healers, helpers and saviours, and should probably be identified as the morning and the evening star.

In the Vedic tradition, the Divine Twins are closely associated with *Sūrya*, the Sun-god, whom they escort. Thus, the comparative analysis of the poetic material reveals a variety of remarkable common features, which might ultimately point to an ancient theme.

A figure stands in front on an axle with two wheels in between a boat, a quadruped and two twin figures perhaps performing acrobatics. Rock carving from Ryland, in Bohuslän, Sweden. Frottage by D. Evers, 1970.



Indo-European society and language: An archaeolinguistic perspective

Prof. Birgit Anette Olsen

Birgit Anette Olsen will talk about the light that archaeolinguistic studies shed on Indo-European society.

Through the lens of the historical linguist, we see a hierarchically structured, patrilineal and patrilocal society of pastoralists. Prof. Olsen will argue that, as also evidenced by archaeological findings, Indo-Europeans were exogamous – men found their brides outside the clan, and brides would move in with their husbands' clans.

This, she claims, facilitated the spread of both language and culture.

24

Wednesday, 8 August

Birgit Anette Olsen is professor of Indo-European studies at the University of Copenhagen and head of the *Roots of Europe* Research Center. She is an expert in Classical Armenian and was leading researcher of the Velux-funded project *Individual, kind and family – what words can tell*.



Strontium analysis of the remains of two females reveal that women might travel long distances in the Bronze Age, presumably to move in with their husband's family. The girl in this grave grew up hundreds of kilometers from Egtved where she was buried, at the age of 16 or 17, in 1370 BCE. National Museum of Denmark (Room 9).

Celtic-Germanic relationships: 4000 years as neighbours

Adam Hyllested PhD

26

Wednesday, 8 August

The Celtic and Germanic languages show traces of having been spoken in each other's vicinities for at least four millennia.

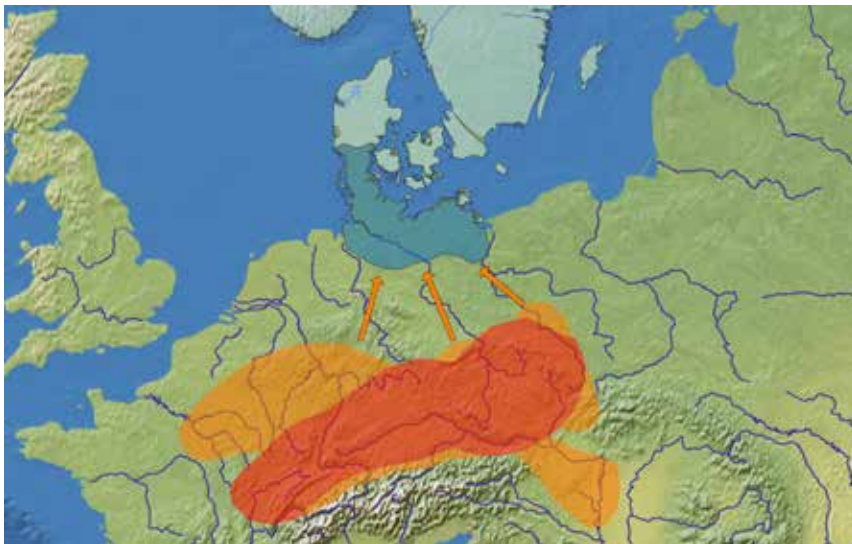
The best documented archaeological phase of this relationship dates to the Iron Age when Celtic tribes inhabited a vast belt of Middle Europe – known to us as the Hallstatt and La Tène cultures – and Germanic tribes were settled in Northern Germany and southern Scandinavia – in what archaeologists refer to as the Jastorf Culture.

The southern, Celtic cultures exerted a great influence on their northern neighbours, as evinced by the many Celtic artefacts found in the Germanic-speaking areas. Linguistically, a number of Celtic loanwords in the Germanic languages date back to this period in north German/south Scandinavian pre-history, also referred to as the Celtic Iron Age.

However, as Adam Hyllested's research reveals, there is an older stratum of shared vocabulary between Celtic and Germanic that speaks of an even longer-lasting relationship between the two branches of Indo-European.

Celtic and Germanic share a terminology for items of the semantic spheres of horsemanship, warfare, religion and healing. These terms differ from those dating to the Iron Age in that it is impossible to identify them as loanwords, be it from Celtic to Germanic or *vice versa*: it is as if they are common innovations that perhaps arose in a bilingual society. The archaeological environment of this speech society is yet to be identified.

Adam Hyllested is a historical linguist, affiliate of the *Roots of Europe Research Center* and frequent contributor to the public debate about language history. He is an expert in linguistic contacts in prehistoric Northern Europe.



Germanic and Celtic settlements in the Iron Age. Bright teal: Pre-Roman Iron Age Scandinavia, c. 500 – 1 BCE; dark teal: the Jastorf culture, c. 500 – 1 BCE; orange: Hallstatt culture, c. 800 – 450 BCE; red: La Tène 450 – 50 BCE. Arrows indicate the earliest La Tène influence towards the North. Illustration by Mikkel Nørtoft.

Detail from one of two Celtic chariots found in a bog in Dejbjerg, western Jutland, and dating to appr. 50 bce. National Museum of Denmark (room 16).



Prehistoric Scandinavian disruptions

Lasse Sørensen PhD

Lasse Sørensen will talk about three major events in Scandinavian prehistory.

The first agrarian revolution brought the neolithic farming culture to Scandinavia. The first farmers in the area migrated from the Michelsberg culture in Central Europe and settled alongside the indigenous population of hunter-gatherers. In the archaeological record, this period is characterized by the emergence the so-called funnel beakers. The period lasted from appr. 4000–3300 BCE.

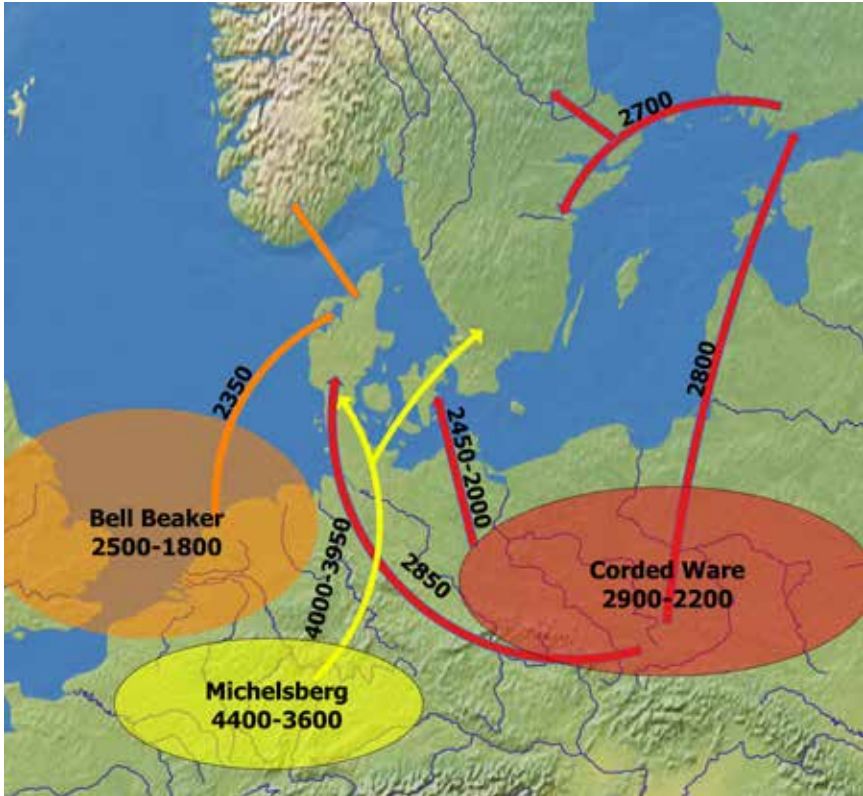
The second agrarian revolution was the expansion of the single-grave culture into Scandinavia via western Denmark. Lasse Sørensen will present recent findings of artefacts that strongly suggest that the latter event was the result of mass migrations. The archaeological records reveal that the newcomers were farmers and herders. The single-grave culture was itself part of the larger corded-ware culture. This period lasted from appr. 2800–2000 BCE.

The bell-beaker expansion saw the emergence of the bell-shaped beakers characteristic of a culture that spanned vast areas of Europe and northern Africa. This expansion was chracterized by larger sea-faring boats that carried the bell-beaker culture further north into Norway. In Scandinavia, this period, also referred to as the late Neolithic, lasted from appr. 2400–2000 BCE.

28

Thursday, 9 August

Lasse Sørensen is head of the National Museum's department for Ancient Cultures of Denmark and the Mediterranean.



Neolithic migrations into Europe. Illustration by Mikkel Nørtoft 2018.

The Bronze Age expansion into Norway – as demonstrated by iconography, the rock art evidence

Flemming Kaul DrPhil

30

Thursday, 9 August

The Neolithization of Southern Scandinavia took place around 4000 BC. Within a short span of time most parts of southern Scandinavia were encompassed by the Neolithic Funnel Beaker Culture. In south-western Scandinavia this expansion of the agrarian economy halted close to what is now the Swedish-Norwegian border at Svinesund. North of Svinesund, we find the northernmost dolmens of Continental Europe. For centuries, the border-zone here remained stable, though a limited agricultural impact is seen in certain areas further north and west. With the transition to the Nordic Late Neolithic, c. 2350 BC, a new agricultural expansion began, accompanied by a wide distribution of flint daggers and sickles, some of the flint ultimately coming from flint mines in Northern Jutland. A border zone seems to have stabilized around 2000 BC in northernmost Trøndelag. During the Bronze Age, further steps of expansion of agrarian economy can be followed along the North Norwegian coast, at around 1300 BC, 1000 BC and 600 BC.

Bronze Age ship from Hjemmeluft, Alta, Finmark, c. 600 BC.W



Flemming Kaul is curator and senior researcher at the National Museum of Denmark and a leading expert in Bronze-Age iconography and religion.

This stepwise expansion can be observed in the ship iconography of the rock carvings as well. The characteristic ship images belonging to the Southern Scandinavian Bronze Age tradition show a similar pattern as the other aspects of material culture. In North Trøndelag there are ship images that by their shape can be dated to around 1600 BC, and a bit later (Stjørðal; see image below). Further north, in Helgeland, Nordland (Flatøy; see image on p.), the first ships seem to appear around 1400–1300 BC. Then, almost as far north as you can get, at Alta, Finmark, there are a number of ships of the Late Bronze Age, c. 600 BC (see image below, p. 45).

Bronze Age ship from Leirfall, Stjørðal, Trøndelag, 1600-1400 BC.



Reflections on the introduction of Indo-European in southern Scandinavia: The archaeological evidence

Rune Iversen PhD & Guus Kroonen PhD

32

Friday, 10 August

Rune Iversen and Guus Kroonen will present their joint work on the emergence of the Indo-Europeans in Scandinavia; they illustrate how the archaeological and linguistic evidence support similar conclusions.

The early farmers left no written records; nor did the carriers of the single-grave culture whose language eventually developed into Proto-Germanic. However, the cultural meeting of Neolithic farmers and the new immigrants has left traces in the attested languages in the form of loanwords. These terms are all from the sphere of local animals and botany with a majority of agricultural plants. They reveal that the Indo-European immigrants must have learnt the farming techniques from the local agriculturalists.

Rune Iversen is associate professor of archaeology at the University of Copenhagen.

Guus Kroonen is a historical linguist affiliated with the *Roots of Europe* Research Center and associate professor in Indo-European studies at the University of Leiden. He is head of the ERC Starting Grant project *The Linguistic Roots of Europe's Agri-cultural Transition* based at the University of Leiden; he also collaborates with Kristian Kristiansen's project *Towards a new European Prehistory* (see above).

A neolithic lexicon

Animals

- **sturjon*- ‘sturgeon’ – comp. Eng. sturgeon, Da. *stør*, Germ. *Stör*
- **rekjo*- ‘shrimp’ – comp. Da. *reje*, Sw. *räka*
- **amslō*- ‘blackbird’ – comp. Eng. *ousle*, Gm. *Amsel*
- **arton*- ‘wag-tail’ or ‘garganey’ – comp. Sw. *årta*, OE *earte*
- **laiwarika*- ‘lark’ – comp. Eng. *lark*, Germ. *Lerche*, Da. *lærke*

Plants

- **breknan*- ‘bracken, fern’ – com. *bräken*, eng. *bracken* Da. *bregne*
- **hwerhwet*- ‘?’ – comp. Eng. *hwerhwette* ‘cucumber’; also in Lat. *cucurbita* ‘gourd’
- **smērijōn*- ‘clover’; Da. *smære*, Sw. *smäre*; Old Irish *seamar* ‘shamrock, clover’
- **hulisa*- Gm. *Hülse*; Dutch *hulst*; also Old Irish *cuilenn* ‘holly’

Agricultural terms

- **arwīt*- ‘pea’ – comp. Du. *erwt*, Germ. *Erbse* Da. *ært* ‘pea’
- **baunō*- ‘bean’ – Eng. *bean*; Da. *bønne*; Germ. *Bohne*; also Rus. *bob*
- **rōbjōn*- ‘a trunip or beet’ – comp. Gm. *Rübe*, Da. *roe*, Lith. *ropė*, Gk. *raphus*
- **maldjo*- ‘saltbush; orache’ – comp. Germ. *Melde*, Da. *mælde*

Emergence of the Germanic languages in Northern Europe

Seán Vrieland PhD

Germanic often conjures up images of barbaric warriors, Viking raiders and legendary heroes praised in epic poems.

Linguistically speaking, Germanic indicates a group of closely-related languages including not only English, German and Dutch, but also Danish and the other Scandinavian languages.

Today the Germanic languages are spoken across the globe, though they do not appear in the historical record before the first centuries of the Common Era.

Seán Vrieland's talk explores the early days of the Germanic proto-language, how and when it split from Proto-Indo-European and appeared in Northern Europe, when it started to appear in the written record, and how and when the various Germanic languages began to diverge.

The National Museum houses many objects providing linguistic and extra-linguistic evidence for the early Germanic language and its speakers.

Bronze-age objects such as golden arm rings are often mentioned in later Germanic literary sources such as the Icelandic sagas and the Old English *Beowulf* epic.

The Vimose comb (pictured above right) from ca. 150 CE contains the earliest known inscription using the runic alphabet, a script developed during the Early Iron Age and used for recording the Germanic languages up until the modern period.

Seán Vrieland is a historical linguist at the Arnamagnæan Institute, University of Copenhagen. Specializing in the Nordic languages, he is currently a post-doc on the VELUX-funded project *Script and Text in Time and Space* examining the development of language and script in medieval Denmark.

34

Friday, 10 August

The Vimose comb contains the oldest known runic inscription, dating from around 150 CE. The inscription contains a single word $\text{NFR}^{\circ}\text{F}$ *harja*, which is either a man's name, or quite simply means 'comb'. National Museum of Denmark (Room 19).



From the Late Iron Age, the inscription on the Golden Horn of Gallehus (pictured below) contains the earliest record of Germanic long-line alliterative verse and can thus be considered the beginning of the Germanic literary canon.



The smaller of the two Golden Horns from Gallehus dating to appr. 400 CE contains the oldest known Germanic poetry. The alliterating long line reads $\text{M}^{\circ}\text{N}^{\circ}\text{H}^{\circ}\text{M}^{\circ}\text{P}^{\circ}\text{F}^{\circ}\text{X}^{\circ}\text{F}^{\circ}\text{I}^{\circ}\text{Y}^{\circ}\text{H}^{\circ}\text{R}^{\circ}\text{T}^{\circ}\text{I}^{\circ}\text{F}^{\circ}\text{Y}^{\circ}\text{H}^{\circ}\text{R}^{\circ}\text{R}^{\circ}\text{I}^{\circ}\text{F}^{\circ}\text{T}^{\circ}\text{F}^{\circ}\text{I}^{\circ}\text{M}^{\circ}\text{R}^{\circ}$ *ek hlewagastiR holtijaR horna tawido* "I, Hlewagast ('famous guest') from Holt made the horn". National Museum of Denmark (Room 22)

The archaeology and linguistics of Indo-European origins and spread

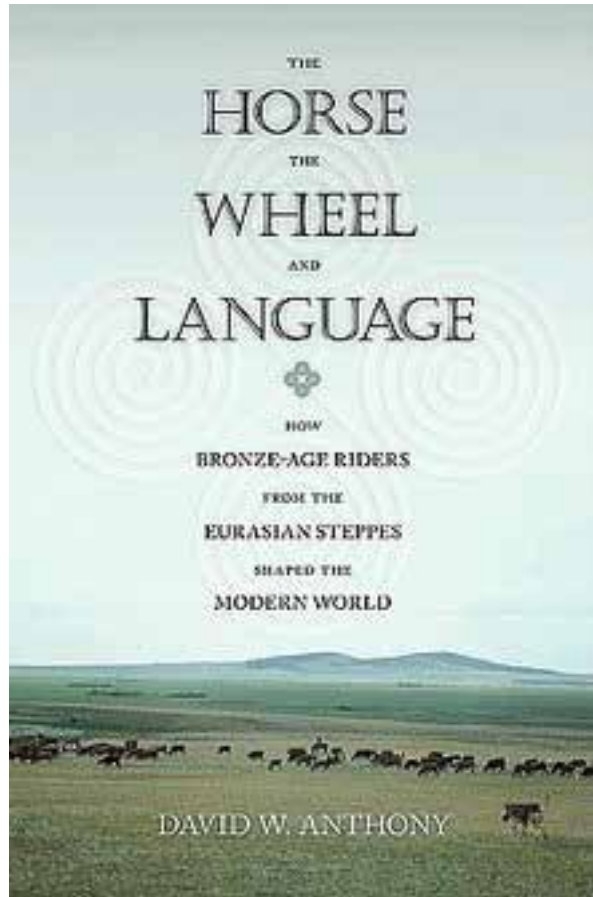
Prof. David Anthony

Professor Anthony's lecture will describe aspects of the archaeology of the steppes (Russia, Ukraine, and Kazakhstan) relevant to the Indo-European question, including the advantages of a steppe homeland, the domestication of the horse, and the archaeological evidence for migrations out of the steppes.

36

Friday, 10 August

David Anthony is an internationally leading expert in the archaeology of the Indo-Europeans and author of the ground-breaking book on the subject: *The Horse, the Wheel and Language* (Princeton University Press 2007). The book won *The Society for American Archaeology's* 2010 Book Award.



37

Friday, 10 August

Cover of *The Horse, the Wheel, and Language: How Bronze-Age Riders from the Eurasian Steppes Shaped the Modern World* (Princeton University Press 2007).

The diseases of the Indo-European peoples

Matilde Serangeli PhD

38

Friday, 10 August

In the past few years we have participated in a true revolution in the way we conceptualize prehistory. The new ancient DNA results have revealed a scenario of the Eurasian prehistory which have changed our previous knowledge of it and raised new important questions.

In particular, the discovery of pathogens in prehistorical DNA samples – for which the new term paleopathology has been created – has enabled us to reconstruct ancient diseases (virus and bacteria) in prehistory. Two main questions that ensue for archaeologists and linguists:

- Can we trace the mobility of the Indo-European peoples on the basis of the attestation of a certain (especially epidemic) disease?
- Can linguistics supporting this new evidence and act as missing link between genetics and archaeology?

To answer these questions, this talk will focus on the methodology of the reconstruction of a vocabulary of ancient diseases which may have affected the Indo-European peoples before and after the so-called disintegration of the Indo-European language into the several IE branches (that means, after 4000 BCE).

The research on ancient diseases and medicine has a long history in neighbouring fields such as the philological analysis of ancient medical and ritual texts; however, a large-scale analysis from the perspective of histori-

Matilde Serangeli, a historical linguist with an expertise in Ancient Greek and the Anatolian languages, is affiliated with the Roots of Europe Research Center as a Marie Skłodowska-Curie fellow; her research project is titled *The Linguistic Origins of Europe: Word-formation and Lexicon in Anatolian and Core Indo-European*.

cal linguistics and with the purpose of reconstructing the Indo-European vocabulary of sickness and health has never been carried out. Therefore, this represents one of the most exciting and promising linguistic research topics in the years to come.



Apollo is the Greek god associated with healing and disease. In the Iliad, “the lord who strikes from afar” famously smites the Achaeans with a pestilence by discharging his bow.

Migrations in a long-term perspective

Jeanette Varberg

People have always migrated. From the beginning of human history people have walked the earth searching for new land, a better life or just to discover the unknown. But how have the patterns of migration changed through human history and what caused the migrations?

Climate change, hunger and conflict between groups of people are the most known causes, but epidemic diseases and the discovery of new land are also part of the explanation. As the lands got more densely populated, the migrations often resulted in war and conflict that could end up in even more extensive migrations.

As a result, large-scale migrations are often linked with turning points in history.

40

Friday, 10 August

Jeanette Varberg is curator at the National Museum's Department for Ancient Cultures of Denmark and the Mediterranean.



Bronze Age ships from Flatøy, Helgeland, Nordland, 1400–1300 BC.

The indo-European homeland problem: Traditional methods and current problems

Prof. James P Mallory

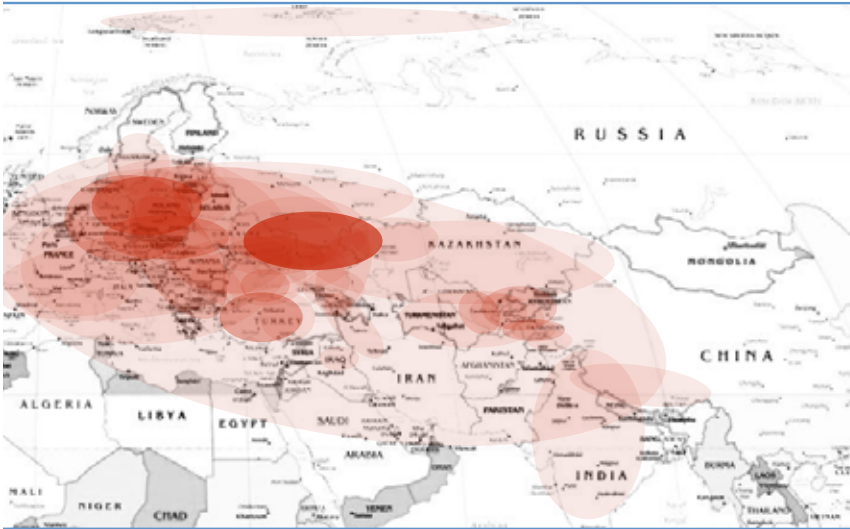
42

Friday, 10 August

The current discourse concerning the homeland of the Indo-Europeans has largely focussed on the evidence of archaeology, some linguistic-cultural reconstructions (e.g., wheeled vehicles) and, especially, on recent advances in the analysis of ancient DNA.

Often, scholars have lost sight of the wide variety of other methodologies as well as various theories and models that have anticipated the current state of research. The present state of homeland solutions will be examined in light of the earlier history of the problem as well as some of the popular methodologies of the past.

James P Mallory is Emeritus professor of archaeology at Queens' University Belfast. His seminal book *In Search of the Indo-Europeans: Language, Archaeology and Myth* (Thames & Hudson 1989) appeared in the wake of Colin Renfrew's *Archaeology and Language: The Puzzle of Indo-European Origins* and created a surge in interest in the Steppe hypothesis which is today the most widely acknowledged homeland theory. Together with DQ Adams he is the author of *The Oxford Introduction to Proto-Indo-European and the Proto-Indo-European World* (OUP 2006).



A so-called heat map illustrating the suggested, possible homelands of the Proto-Indo-Europeans from 1813 to the present day. (Illustration: Thomas Olander on the basis of Mallory 1976: "A short history of the Indo-European problem.")

From Proto-Indo-European to Russian: A study of sound change and its relative chronology

Florian Wandl

44

Friday, 10 August

Background

Although there are plenty of studies dealing with the historical phonology of Proto-Slavic and Russian, the problem of relative chronology has not yet been considered exhaustively. The task of my PhD thesis is to fill this gap by elaborating a model of the relative chronology of Proto-Slavic and Russian sound changes. I intend to include phonological and prosodic innovations as well as the so-called *auslautgesetze*.

Methodology

Having defined what exactly is to be perceived by the notions of “Proto-Indo-European”, “Proto-Slavic”, and “Russian”, the main task of my thesis is to connect these three language stages in a way, which allows to derive the prevailing more recent state from an earlier one. This shall be done by arranging those sound changes that can be reconstructed for the pre-history of the language under scrutiny, according to their relative chronology.

The relative chronology will be elaborated by applying the following methods: (1) analysis of the logical relationships between individual changes (i.e. feeding, bleeding, counterfeeding, counterbleeding); (2) analysis of data extracted from loanwords and toponymy; (3) analysis of data derived from dialects. As a last step the model of the relative chronology will be verified by reconstructing the phonological history of individual word forms and by making use of philological data.

Florian Wandl is a PhD student at the University of Zürich.

In my talk I intend to give an overview of the methods applied in my thesis as well as the way of representation of the model of the relative chronology. Since this model relies in part on the interpretation of certain loanwords I would be especially interested in getting some input on how to make use of archaeological data as well as data from genetics in order to determine periods of contact between Slavs and neighboring peoples and to what extent it is justified to draw conclusions concerning the languages involved on the basis of these data.

Selected bibliography

- Holzer, G. (1995): Die Einheitlichkeit des Slavischen um 600 n. Chr. und ihr Zerfall, in: Wiener Slavistisches Jahrbuch 41, 55-89.
- Holzer, G. (2007): Historische Grammatik des Kroatischen. Einleitung und Lautgeschichte der Standardsprache, Frankfurt am Main et al.
- Kiparsky, V. (1963-1975): Russische Historische Grammatik. I-III, Heidelberg.
- Lindstedt, J. (1991): The Notational Fallacy in Common Slavonic Phonology, in: Scando Slavica 37, 108-122.
- Mayrhofer, M. (1986): Indogermanische Grammatik. 2. Halbband: Lautlehre. Segmentale Phonologie des Urindogermanischen, Heidelberg.
- Olander, T., Balto-Slavic Accentual Mobility, Berlin – New York 2009.
- Shevelov, G. Y. (1964): A Prehistory of Slavic. The Historical Phonology of Common Slavic, Heidelberg.

The first horse herders and the impact of early Bronze Age steppe expansions into Asia

Guus Kroonen PhD

46

Friday, 10 August

The Yamnaya expansions from the western steppe into Europe and Asia during the Early Bronze Age (~3000 BCE) are believed to have brought with them Indo-European languages and possibly horse husbandry.

We analyze 74 ancient whole-genome sequences from across Inner Asia and Anatolia and offer a revised linguistic and historical model for the prehistoric dispersal of three important Indo-European language subgroups—the Anatolian Indo-European languages into Anatolia, the Tocharian languages into Inner Asia, and the Indo-Iranian languages into South Asia—based on the newly analysed archaeogenetic data.

Linguistic Palaeontology

Prof. James P Mallory

Although linguistic-palaeontological or lexico-cultural analysis has been a (controversial) part of Indo-European studies for two centuries, the logic of its application, either by its supporters or its critics, has usually been discussed in a fairly superficial way.

This lecture will provide a brief review of its development and then attempt to raise at least some of the major conceptual issues concerning its practice in the hope of encouraging others to think about what we are doing when we engage in linguistic-palaeontology

47

Friday, 10 August

Rümselçuk Caravanserais of 13th Century Anatolia

Else Marie Johansen CandArch

48

Sunday, 12 August

Else Marie Johansen will talk about her ongoing architectural ph.d. project that describes and analyses six surveyed monuments situated on the medieval caravan and trade routes crossing the southwest regions of Anatolia – present day Turkey.

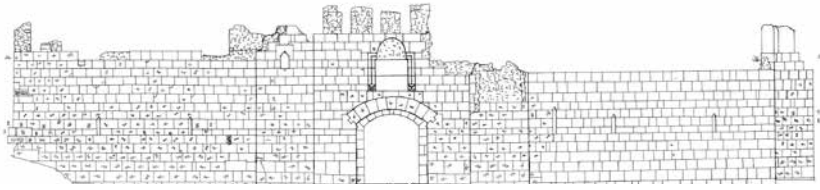
These six caravanserais and other medieval monuments, like bridges, cisterns etc., are situated between the medieval Rümselçuk capital city of Konya and the two important ports of Antalya and Alanya.

A part of the project offers descriptions and analyses of one of several architectural themes characteristic of these medieval, Islamic monuments: the Masons' marks observed on building blocks. These marks were added to the stones by the stone mason, who manufactured the finely dressed stones of the walls of these buildings.

Through her analyses Else Marie Johansen attempts to find the uses and purposes of these signs, possible "translations" of them, what they may potentially reveal about the courses of constructions of these buildings etc.

Similar marks have been recorded on monuments in stone as well as timber, erected during Greek, Roman, Medieval and more modern times and in many regions especially in Europe, but also in the Middle East and Central Asia. Additionally, several texts have been observed on some building blocks – writings in Roman and Greek. These spolia with and without texts, ornamentations and traces of, e.g., metal bars, wooden doors and window frames derive from local Greek and Roman monuments that served as stone quarries for the constructions of the caravanserais a.o.

Else Marie Johansen is an architect specializing in architectural history and research. Her main focus is on medieval Islamic and Rümselçuk architecture and monuments in Anatolia; she has also carried out research in Iran, Syria and Jordan. <https://emjhomepage.wordpress.com>



Johansen's work also includes a shorter description of the trade routes proper, i.e. observed remains of the road constructions – pavements, stairs etc. – which are probably of Roman origin, and most likely used in medieval times as well, by the caravans, traders, pilgrims etc. Additionally, in some areas of Anatolia – in Phrygia – remains of types of roads and pavements, different from the supposed Roman Road, have also been observed.

Image above: Entrance in north facade of Alara Han Caravanserai near Alanya (1231-32), with recording of mason's marks on the dressed stones.

Image to the right: Mason's marks on dressed stones in lower layers of the east facade of Zazadin Han Caravanserai near Konya. 1235-37.



A critique of recent developments in the archaeology of the Indo- Europeans

James Alan Johnson PhD

50

Sunday, 12 August

James Alan Johnson will discuss recent methodological (and theoretical) developments in the application of archaeometry to Eurasian (and European) prehistory, including the use of isotopic and ancient DNA analyses.

More specifically, Dr. Johnson assesses the conflation of the spatial and temporal dynamics involved in socio-cultural change and those involved in demographic/biological change in light of theories of migration and population displacement.

An archaeologist who specializes in the landscapes and material culture of the Bronze and Iron Ages of the Eurasian steppe, Jim Johnson is a postdoctoral researcher affiliated with the research project *The Homeland: In the footprints of the early Indo-Europeans* (under the Roots of Europe Research Center). He co-directs two archaeological projects: the *Bel'sk Landscape and Mobility project* in east-central Ukraine, which is funded by National Geographic, and the *Uy River Valley Communities of Practice* project in the eastern southern Urals region of the Russian Federation, which is funded by the National Science Foundation and Wenner Gren Foundation.

