

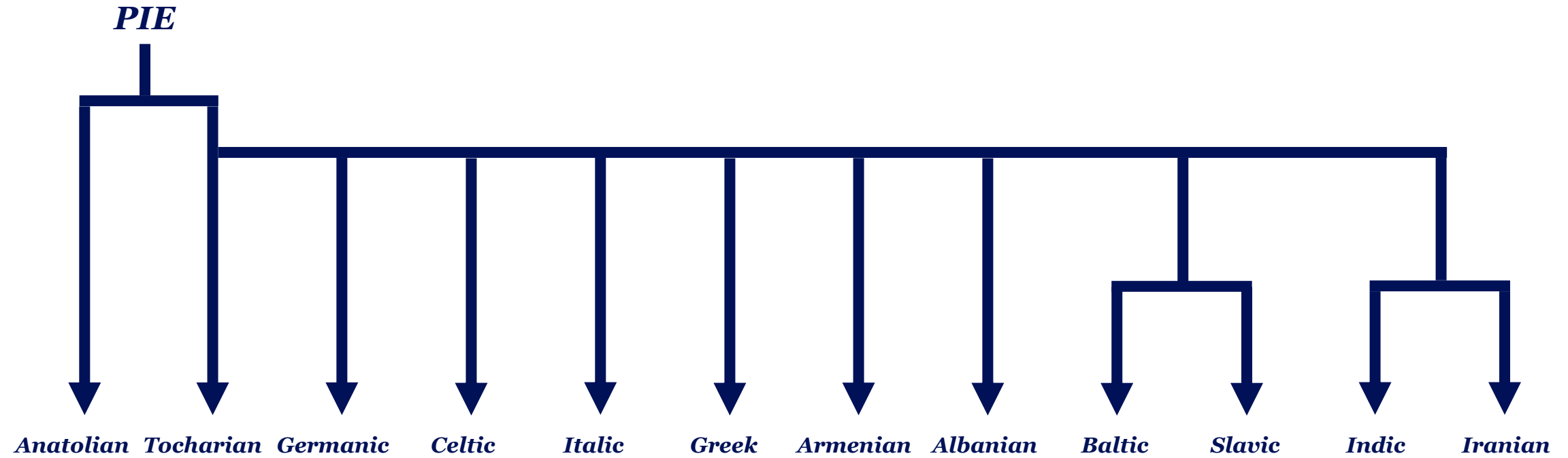
Sub-Indo-European Europe

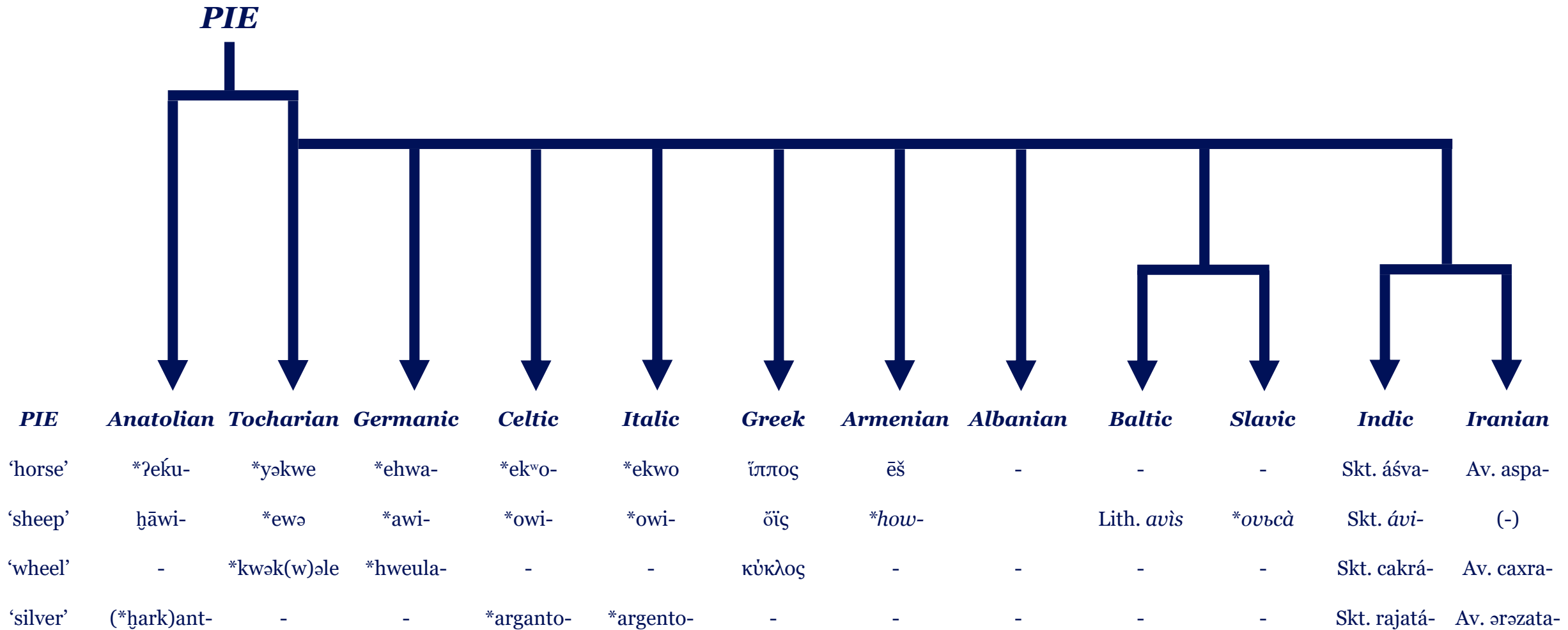
Problems, Methods and Results

Guus Kroonen

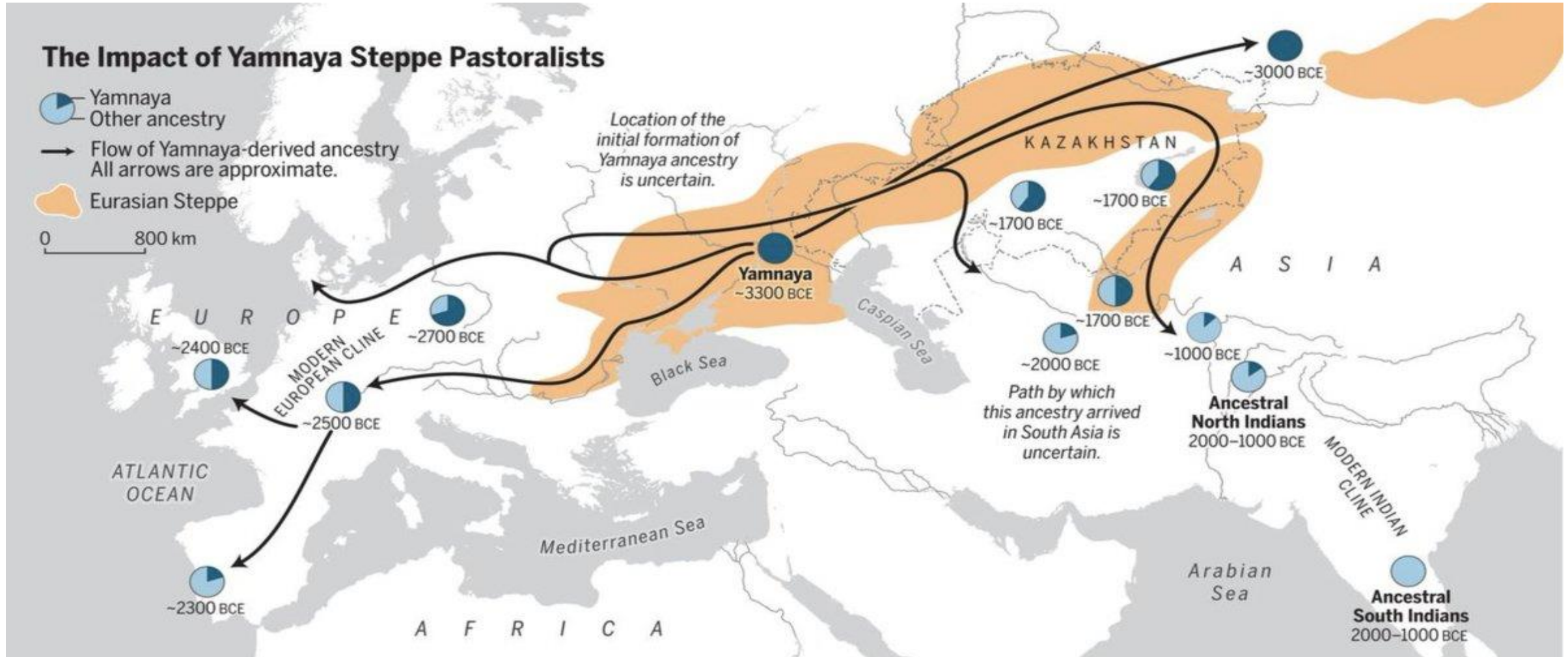


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The Netherlands

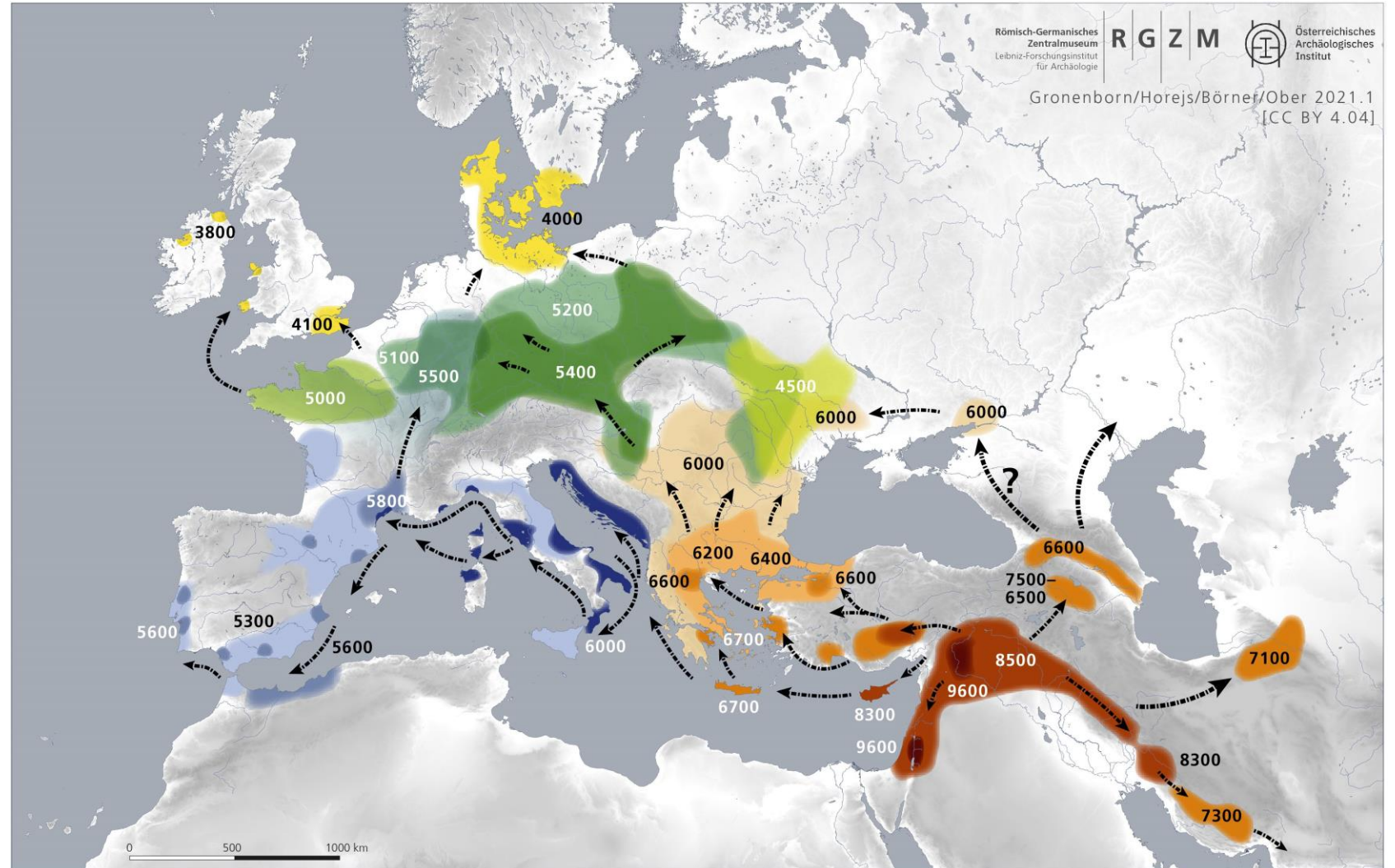




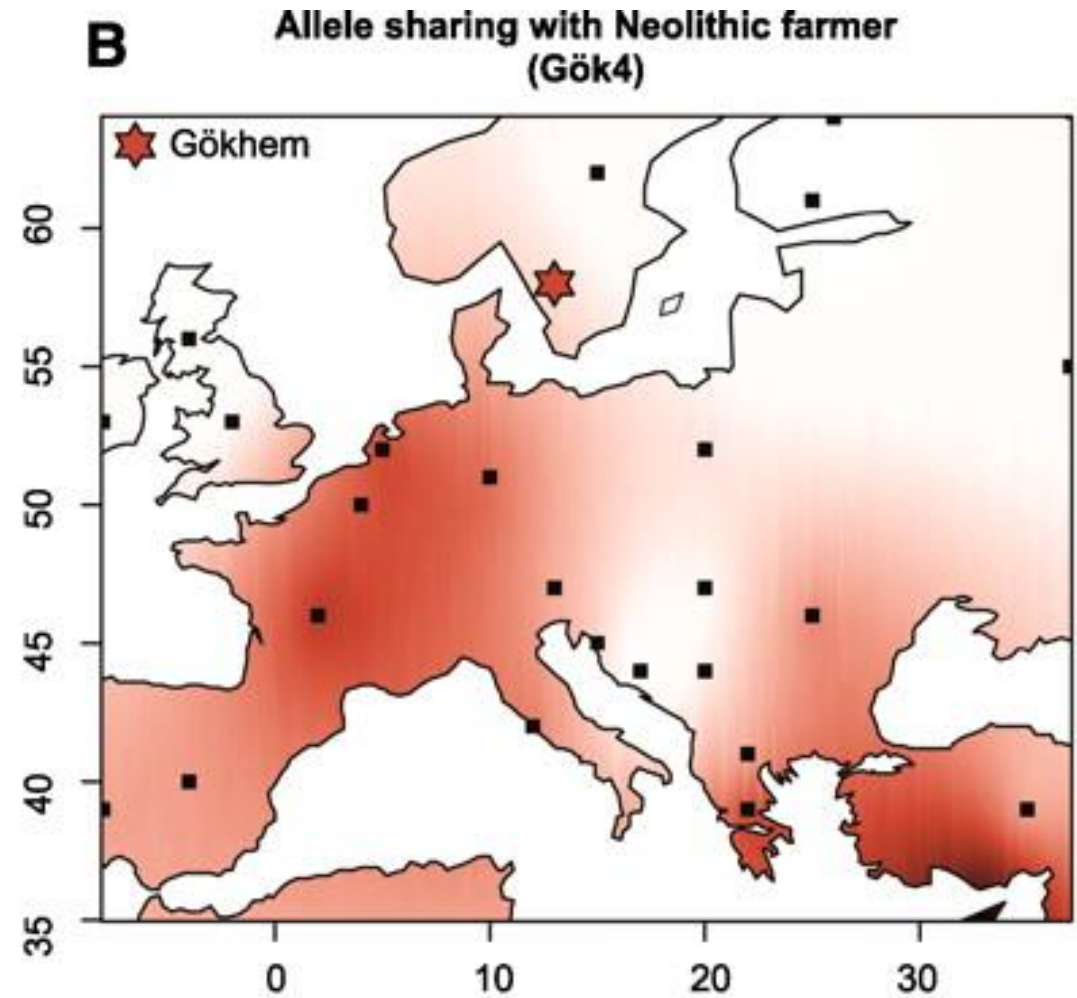
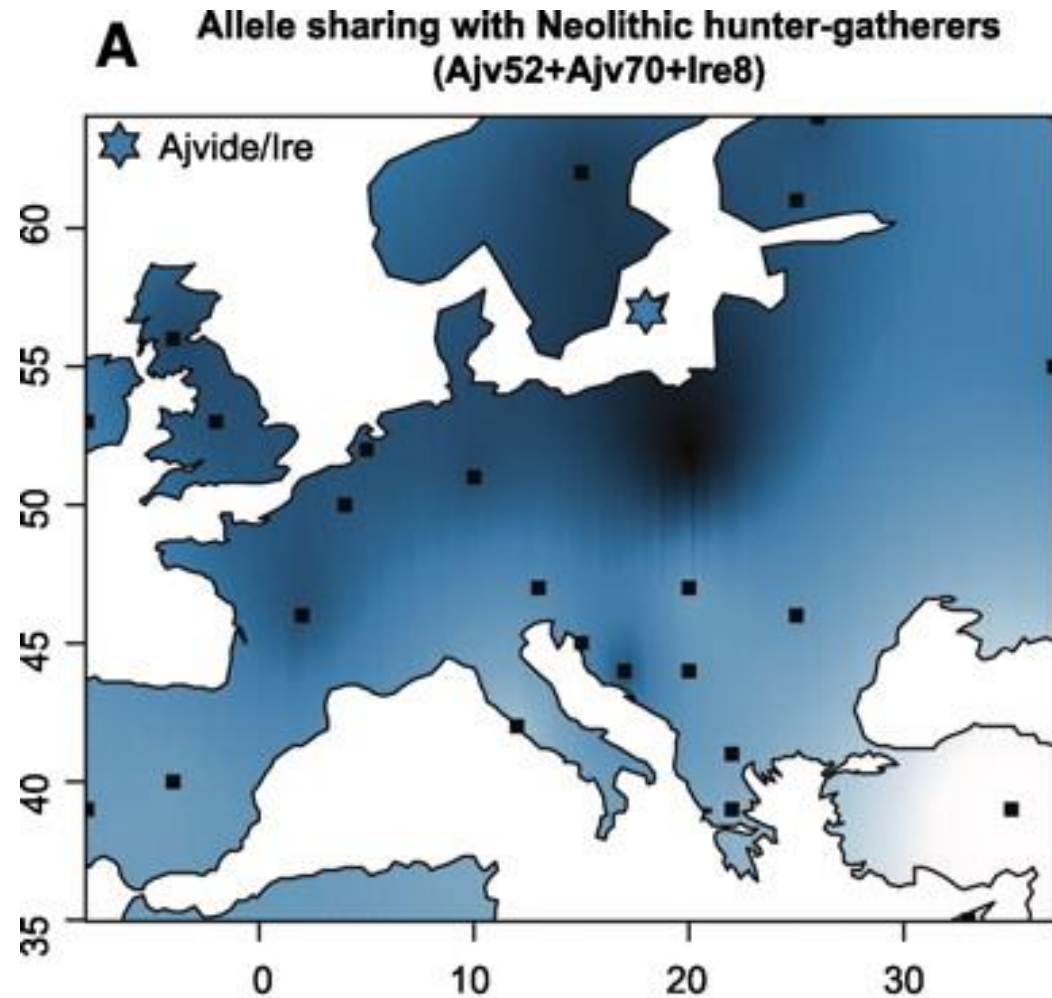
Indo-Europeanization in the 3rd mill. BCE



Spread of agriculture

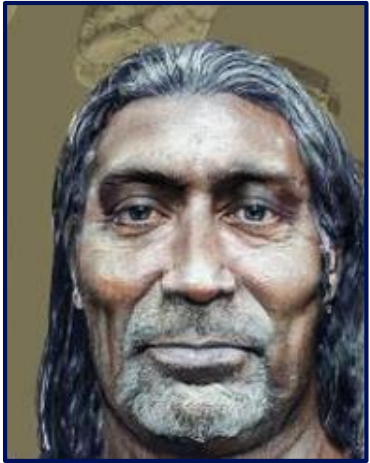


Skoglund *et al.* 2012



Key European Prehistoric Population Groups

Western
Hunter
Gatherers



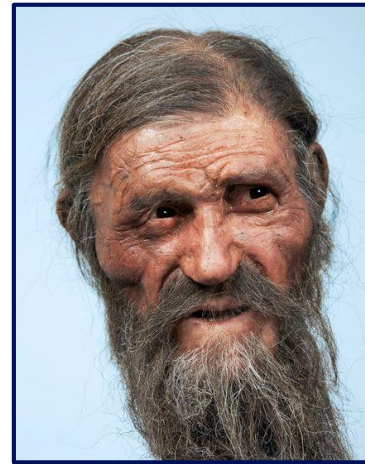
Combe-Capelle
Man
(France, ± 9.5 kya)

Scandinavian
Hunter
Gatherers



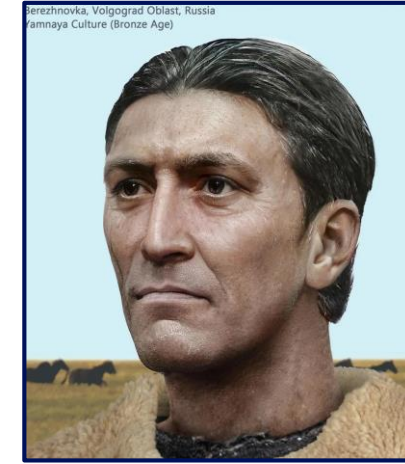
Barum
Woman
(Sweden, ± 9 kya)

European
Neolithic
Farmers



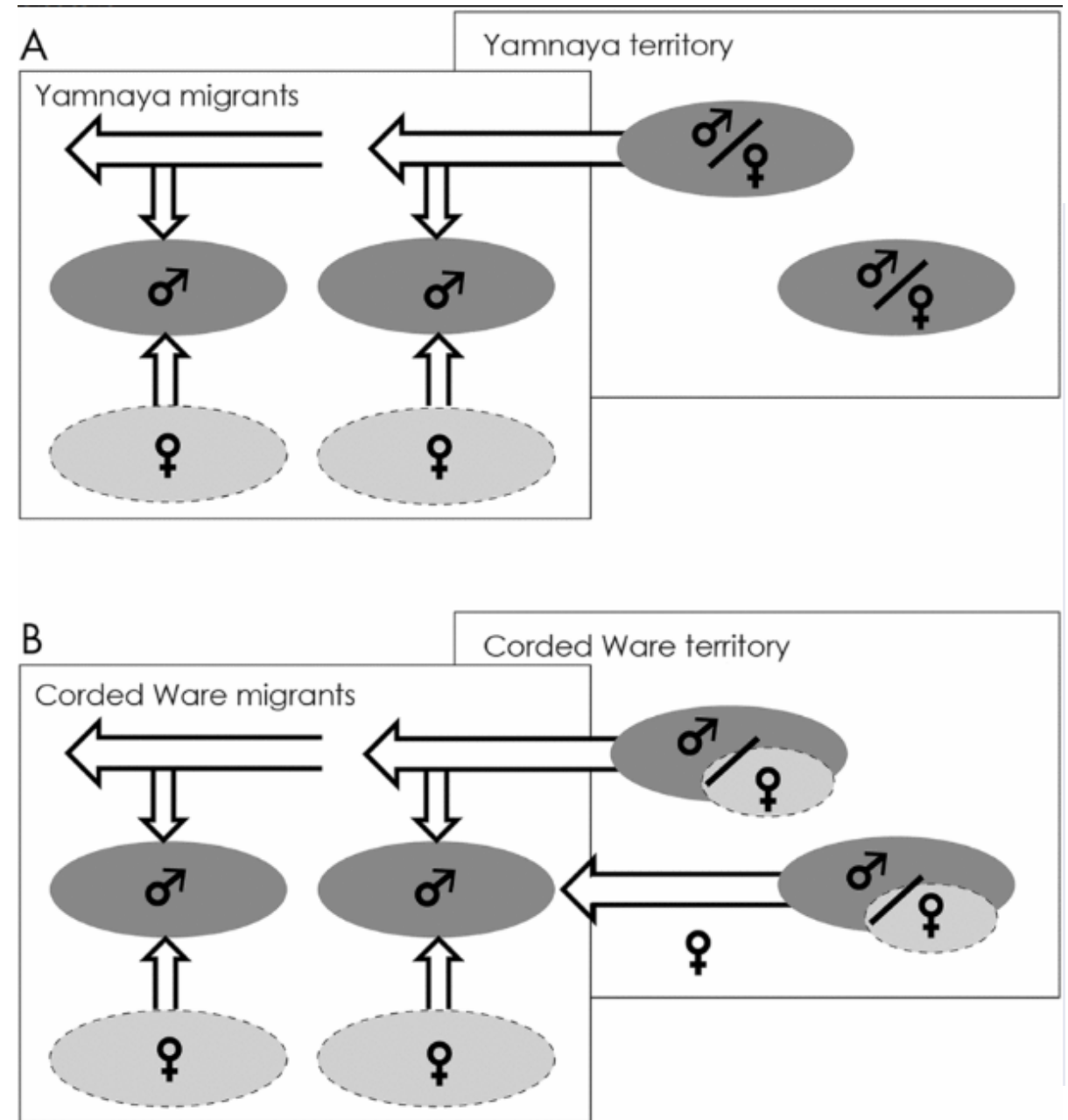
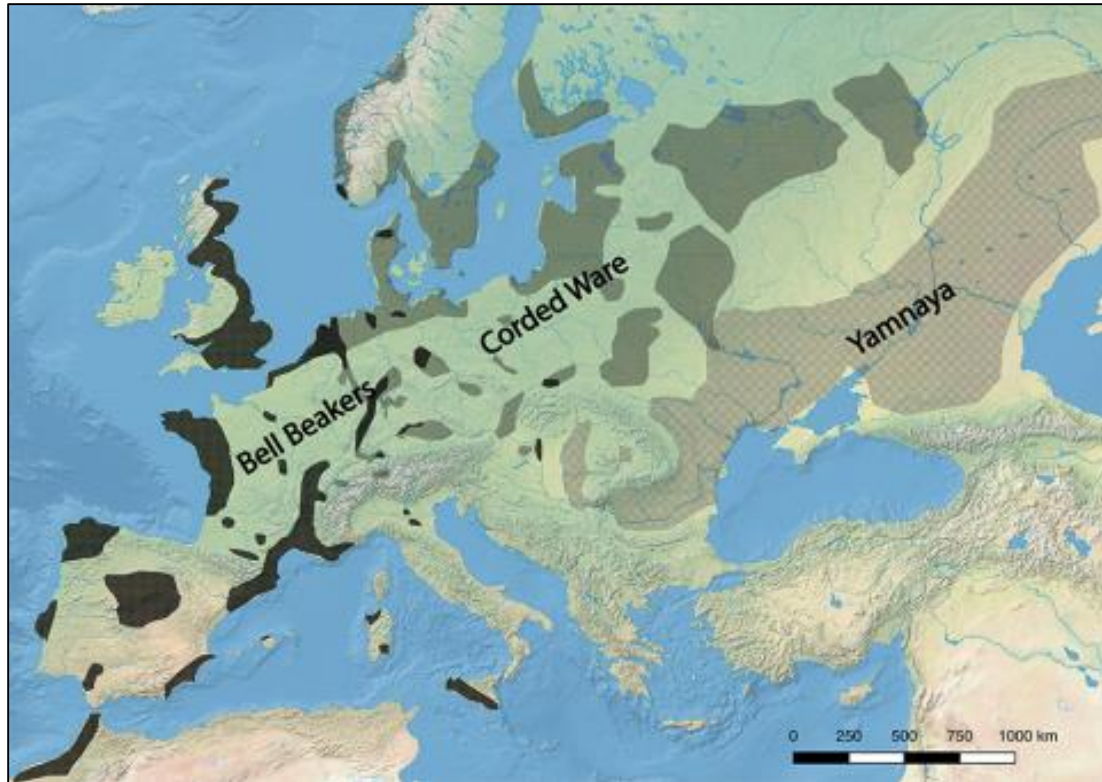
Ötzi
(Alps, ± 5.3 kya)

Yamnaya
Steppe
Pastoralists

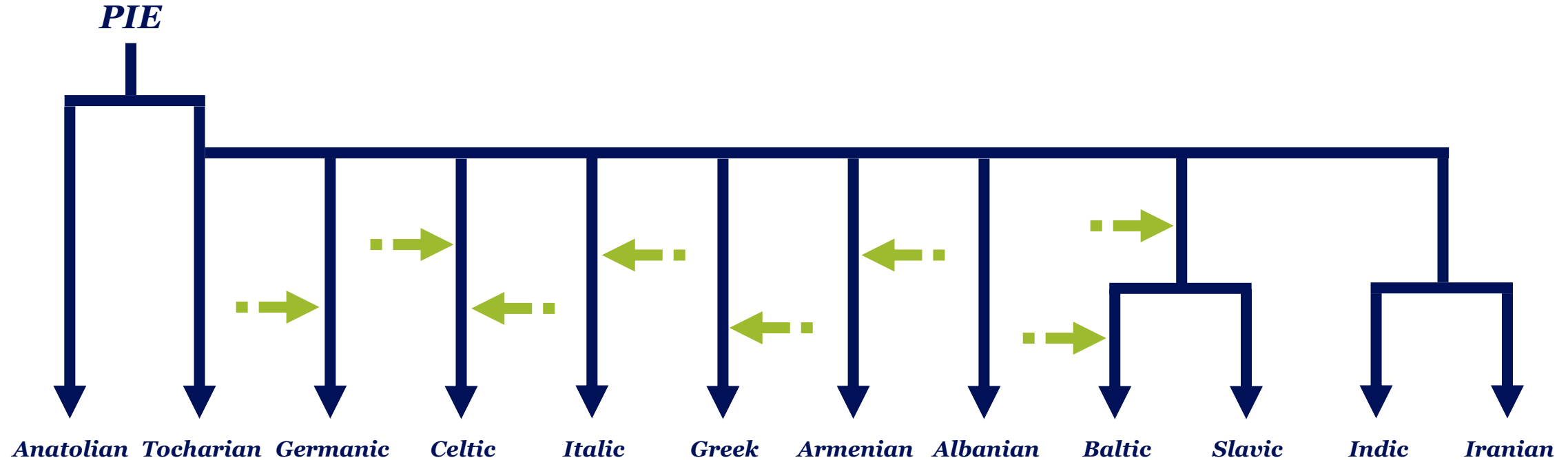


Berezhnovka I
Man
(South Russia, ± 5 kya)

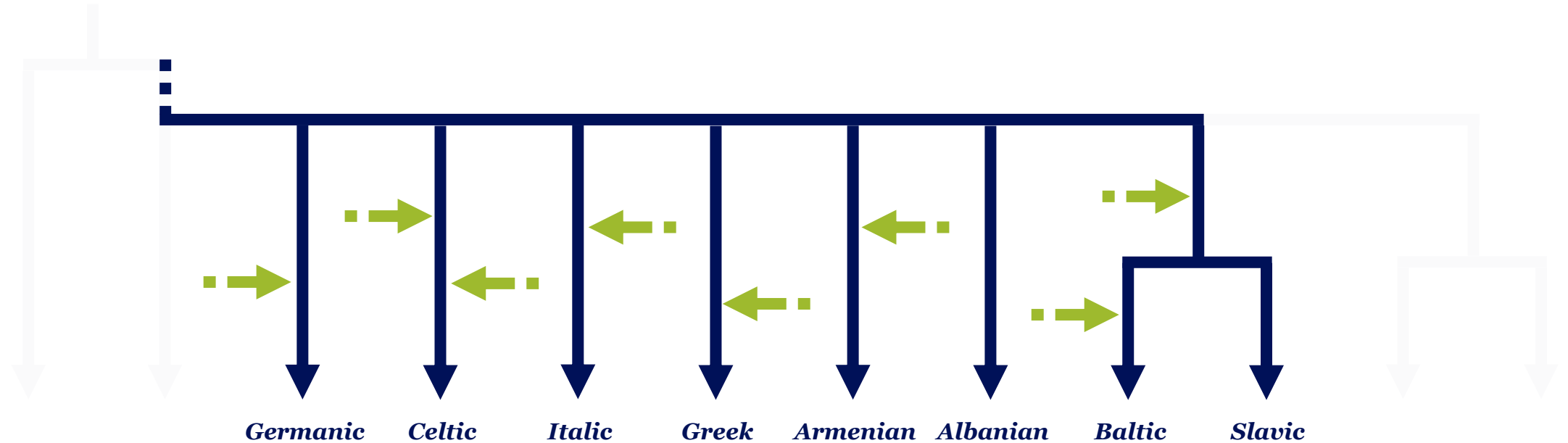
Corded Ware \approx locals + Yamnaya



Prehistoric loans ~ lexical introgression



Prehistoric loans ~ lexical introgression



Research Questions

- Since there *must* have been language contact with pre-existing languages in Europe, of which we otherwise might not know anything...
 - Can the non-IE lexical stock of the IE language of Europe be employed to reconstruct features of any of the pre-existing languages?
 - Can *linguistic palaeontology* help us characterize the type of language contact and where it took place?
 - Is it possible to identify any living relatives of (some of) the extinct pre-Indo-European languages?

Methodology: Compiling a corpus

Criteria for creating a corpus of potential non-Indo-European lexical items:

- limited or areal distribution

Geographic distribution



Geographic distribution



?PIE

**markos*

‘horse’

Geographic distribution



PIE

**h₁ek_u(o)s*

‘horse’

Methodology: Compiling a corpus

Criteria for creating a corpus of potential non-Indo-European lexical items:

- limited or areal distribution
- non-IE phonotactics

Non-IE phonotactics

- Aberrant root structure
 - PIE only had monosyllabic roots of the structure C(C)V(C)(C)-

Greek

órob-os 'chickpea'

< quasi-PIE **orob-os*

Germanic

**hanip-az* 'hemp'

< quasi-PIE **kanib-os*

Non-IE phonotactics

- Aberrant root structure
 - PIE only had monosyllabic roots of the structure C(C)V(C)(C)-
- Aberrant phonology
 - **a* is a "marginal" and disputed phoneme in PIE
 - **b* was rare or absent in PIE
 - PIE did not have geminates

Greek

órob-os 'chickpea'

< quasi-PIE **orob-os*

Germanic

**hanip-az* 'hemp'

< quasi-PIE **kanib-os*

Latin

baculum 'stick'

< quasi-PIE **bak-*

Celtic

OIr. *bacc* 'stick'

< quasi-PIE **bakk-*

Germanic

**pagja-* 'stick'

< quasi-PIE **bak-*

Methodology: Compiling a corpus

Criteria for creating a corpus of potential non-Indo-European lexical items:

- limited or areal distribution
- non-IE phonotactics
- irregular sound correspondences between “pseudo-cognates”
 - either the result of independent borrowing processes...
 - or a reflection of differences in the donor language(s)

Irregular sound correspondences

| | Germanic | Celtic | Italic | Greek | Armenian | Balto-Slavic | other |
|--------|---|--------|--|--------------------------------|----------|--------------|--|
| ‘fern’ | Da. <i>bregne</i> < * b^hreg-n- | - | Lat. <i>felix, filix</i> < * b^helV k- | βλῆχνον < * blēgh-n- | - | - | ?Fr. dial. <i>breuze</i> < * brelik- |

Irregular sound correspondences

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|-------------|---|--------|--|----------------------------------|----------|--|--|
| ‘fern’ | Da. <i>bregne</i> < * b^hreg-n- | - | Lat. <i>felix, filix</i> < * b^helV_k- | βλῆχνον < * blēgh-n- | - | - | ?Fr. dial. <i>breuze</i> < * brelik- |
| ‘hellebore’ | OHG <i>hemera</i> < * kemer- | - | - | κάμμαρος < * kam(m)ar- | - | OCS <i>čemerъ</i> < * kemer- | |

Irregular sound correspondences

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|-------------|--|---|--|---|---|--|--|
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| ‘hellebore’ | OHG <i>hemera</i> < * kemer- | - | - | κάμμαρος < * kam(m)ar- | - | OCS <i>čemerъ</i> < * kemer- | |
| ‘pine-tree’ | - | - | Lat. <i>pīnus</i> < * pis-n- | πίτυς < * pit- | Arm. <i>p^ɛiči</i> < * p^hid- | - | Alb. <i>pishë</i> < * pis- |
| ‘holly’ | OHG <i>hulis</i> < * kulis- | OIr. <i>cuilenn</i> < * kolis-n- | - | κήλαστρος < * kelastr- | - | Arm. <i>kostl</i> < * gostVl- | Pic. <i>keûstria</i> < * kol(V)str- |
| ‘brushwood’ | OHG <i>hurst</i> < * k^(w)rst- | W <i>prys</i> < * k^wrst- | - | - | - | Ru. <i>xvorost</i> < * xvorst- | |
| ‘sand’ | MHG <i>sant</i> , <i>sampt</i> < * sam(a)d^h- | - | Lat. <i>sabulum</i> < * sab^h/d^h- | ἄμαθος < * samad^h- | Arm. <i>awaz</i> < * sab^had^h- | - | |

Irregular sound correspondences

| | Germanic | Celtic | Italic | Greek | Armenian | Balto-Slavic | other |
|-------------------------|--|---|--|-------------------------------|-----------------------------------|---|--|
| ‘coot’ | OHG <i>belihha</i> < *b^holig- | ScG <i>bolachdan</i> < *bo/ula/okk- | Lat. <i>fulica</i> < *b^ho/ulik- | - | - | - | |
| ‘stork, heron, duck’ | ON <i>arta</i> < *ard- | - | Lat. <i>ardea</i> < *ard- | ἔρωδιός, ῥωδιώς, ἄρωδιός | <i>arat</i> < *arad- | ?Scr. <i>róda</i> | ?Alb. <i>rosë</i> < *rāt-iā- |
| ‘thrush ~ lark’ | ON <i>prōstr</i> < *tra/ozd- | OIr. <i>truit</i> < *truzd- | Lat. <i>turdus</i> < *tur(z)d- | - | <i>artoyt</i> < *droud- | Lith. <i>strāzdas</i> < *stra/ozd- | |
| ‘swan’ | OHG <i>elbiz</i> < *alb^hVd- | - | - | - | - | Ru. <i>lébed'</i> < *leb^(h)ed^h- | |
| ‘lobster, crab’ | ON <i>humarr</i> < *kuma/or- | ?OIr. <i>cimmach</i> < *kimm-ak- | - | κάμματος < *kammar- | - | - | |

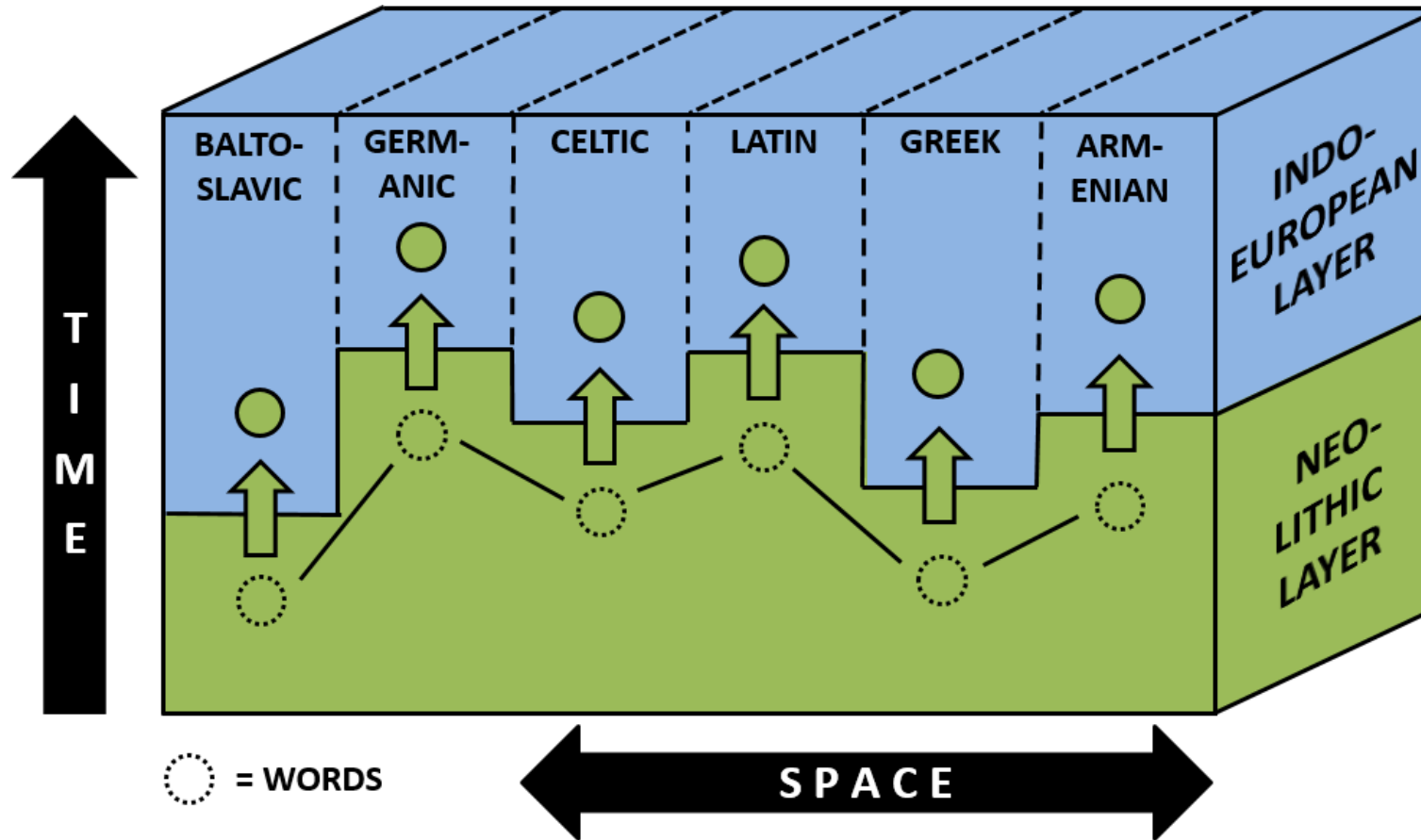
Irregular sound correspondences

| | Germanic | Celtic | Italic | Greek | Armenian | Balto-Slavic | other |
|-----------------|--|--|--|---|--|---|--|
| ‘lentil, vetch’ | - | - | Lat. <i>lēns</i> < * Int- | λάθυρος < * Ind^h- | - | - | * |
| ‘bean’ | OHG <i>bauna</i> < * b^hau-n- | - | Lat. <i>faba</i> < * b^hab^h- | - | - | OCS <i>bobъ</i> < * b^hab^h- | PBerb. * a-Baw- |
| ‘legume’ | OHG <i>arawīz</i> < * arwīt- | - | Lat. <i>ervum</i> < * erw- | ἐρέβινθος < * erebind^h- | <i>arowoyt</i> < * (a)ru/ib-ūd- | - | ?OSp. <i>arvanço</i> < * arvant-io- |
| ‘turnip’ | OHG <i>ruoba</i> < * rāp- | W <i>erfin</i> < * arb^h- | Lat. <i>rāpa</i> < * rāp- | ράφανος < * rab^h- | - | OCS <i>rěpa</i> < * rē/aip- | |
| ‘oats’ | - | - | Lat. <i>avēna</i> < * awe(C)s- | - | - | Lith. <i>avizà</i> < * a-wig^h- | |
| ‘rye’ | ON <i>rugr</i> < * ruk/g^h-i- | W <i>rhyg</i> < * ruki- | - | - | - | Lith. <i>rugiaĩ</i> < * rug^h-i- | |

Methodology: Once you have a corpus...

- Establish the geographic extent of the borrowed vocabulary
 - Is the borrowed vocabulary limited to a specific area or widespread?
- Apply linguistic palaeontology / *Wörter und Sachen* to identify semantic domains
 - What can we say about the cultural features of the donor language?

Simplified model for language contact



Methodology: When you have a corpus...

- If possible, identify any recurring features within the non-inherited vocabulary
 - Can we assign loanwords to a specific stratum or specific strata?

n-suffixation?

| | Germanic | Celtic | Italic | Greek | Slavic | Other |
|-------------|--|---|--|--|---|--|
| ‘fern’ | Da. <i>bregne</i> < *b^hreg-n- | - | Lat. <i>felix, filix</i> < *b^helVk- | βλῆχνον < *blēg^h-n- | - | - |
| ‘bean’ | OHG <i>bauna</i> < *b^hau-n- | - | Lat. <i>faba</i> < *b^hab^h- | - | OCS <i>bobъ</i> < *b^hab^h- | PBerb. *a-Baw- |
| ‘maple’ | OHG <i>ahorn</i> < *akr-n- | - | Lat. <i>acer</i> < *akr- | - | - | - |
| ‘oats’ | - | - | Lat. avēna < *awes-n- | - | Ru. <i>ovës</i> < *awik- | Lith. <i>avizà</i> < *a-wig^h- |
| ‘pine-tree’ | - | - | Lat. <i>pīnus</i> < *pis-n- | πίτυς < *pit- | - | Arm. <i>pʻiči</i> < *p^hid- |
| ‘holly’ | OHG <i>hulis</i> < *kulis- | OIr. <i>cuilenn</i> < *kolis-n- | - | κήλαστρος < *kel-astr- | - | Arm. <i>kostł</i> < *gostVl- |

int^hos-suffixal alternations

| | | |
|-------------|---|-------------|
| ‘labyrinth’ | - | λαβύρ-ινθος |
| ‘hyacinth’ | - | ὑάκ-ινθος |

int^hos-suffixal alternations

| | | |
|-------------|-------|-------------|
| ‘labyrinth’ | - | λαβύρ-ινθος |
| ‘hyacinth’ | - | ὑάκ-ινθος |
| ‘honeycomb’ | κηρός | κήρ-ινθος |

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| ‘labyrinth’ | - | λαβύρ-ινθος |
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| ‘honeycomb’ | κηρός | κήρ-ινθος |
| ‘chickpea’ | ὄροβος < * orob- | ἐρέβ-ινθος < * ereb-ind^h- |

int^hos-suffixal alternations

| | | |
|--------------|-----------------------------------|--|
| ‘labyrinth’ | - | λαβύρ-ινθος |
| ‘hyacinth’ | - | ὑάκ-ινθος |
| ‘honeycomb’ | κηρός | κήρ-ινθος |
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| = ‘legume X’ | Lat. <i>ervum</i> < * erw- | G <i>Erbse</i> < * arwīt- , Arm. <i>arowoyt</i> < * (a)ru/ib-ūd- |

int^hos-suffixal alternations

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| ‘(bul)rush’ | OIr. <i>sim(a)</i> < * sem- | | G <i>Simse</i> < * semit-/īt- , OIr. <i>seimin(n)</i> , <i>simin(n)</i> < * semind- , Hitt. <i>šumanza-</i> < * sm(e/a)nt-īo-? |

nt^hos-suffix in Greek toponyms



a-prefix assoc. with “ablaut” (Schrijver 1997)

| | | |
|-------------|---|-------------------------------------|
| ‘blackbird’ | W <i>mwyalchen</i> < * mesal- , Lat. <i>merula</i> < * mesVl- | OHG <i>amsala</i> < * a-msl- |
| ‘lightning’ | OIr. <i>sraif</i> < * s(t)rab^h- , Gk. τροπᾶ < * strop- | Gk. ἀστραπή < * a-strp- |
| ‘ore’ | Lat. <i>rauda</i> < * raud- | OHG <i>aruz</i> < * a-rud- |

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| ‘ore’ | Lat. <i>rauda</i> < * raud- | OHG <i>aruz</i> < * a-rud- |
| ‘swan’ | Ru. <i>lébed’</i> < * leb^(h)ed^h- | OHG <i>elbiz</i> < * a-lb^hVd- |
| ‘turnip’ | OHG <i>ruoba</i> , Lat. <i>rāpa</i> < * rāp- , Gk. ῥάφανος < * rab^h- | W <i>erfin</i> < * a-rb^h- |
| ‘(wild) pear’ | Alb. <i>dardhë</i> < * ǵ^ha/ord- | Gk. ἄχρᾱς, -ᾱδος < * a-ǵ^hrd- |
| ‘raspberry’ | W <i>mafon</i> < * mab^h- | MFr. <i>ampe</i> < PRom. * a-mp- , Champ. <i>ambe</i> < * a-mb- |

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| ‘lightning’ | | - Gk. ἀστεροπή < * a-sterop- |
| ‘(wild) pear’ | | - ἄχερδος, ἀγέρδα < * a-ǵ^(h)erd- |
| ‘sturgeon’ | OHG <i>sturio</i> < * str- | Ru. <i>osëtr</i> < * a-setr- |

a-prefix assoc. with “ablaut” (Schrijver 1997)

| | | |
|---------------|---|---|
| ‘blackbird’ | W <i>mwyalchen</i> < * mesal- , Lat. <i>merula</i> < * mesVl- | OHG <i>amsala</i> < * a-msl- |
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| ‘sturgeon’ | OHG <i>sturio</i> < * str- | Ru. <i>osëtr</i> < * a-setr- |
| ‘clover’ | OIr. <i>semmar</i> < * semHr- ON <i>smári</i> < * smeh₁r- | - |

Methodology: When you have a corpus...

- Is it possible to identify any living relatives of (some of) the extinct pre-Indo-European languages?

Direct lexical comparisons

- Lat. *raudus*, OHG *aruz* ‘ore’ < ***raud-** ~ ***arud-** ≈ Old Sumerian *aruda* (Schrijver 2019)?
- OIr. *semmar*, ON *smári* ‘clover’ < ***semHr-** ~ ***smeh₁r-** ≈ Georgian *sam-qura* “three-lobe”?
- Gk. ἄχερδος, ἀγέρδα, Alb. *dardhë*, Gk. ἀχράς, -άδος ‘wild pear’ < ***(a)-ǵ^hVrd-** ≈ Archi *χ^ʼert* ‘pear’?

Larry Trask (1997: 413-4)

Basque

| | |
|-------|--------------------|
| -a | def. article |
| aita | father |
| -ak | nominal pl. ending |
| alde | side |
| arau | proportion |
| asko | many |
| ate | door |
| atze | back |
| soinu | music, sound |
| -ra | to (motion) |
| zoko | corner, nook |

Hungarian

| | |
|-------|--------------------|
| a | def. article |
| atya | father |
| -ak | nominal pl. ending |
| oldal | side |
| arány | proportion |
| sok | many |
| ajtó | door |
| hát | back |
| zene | music |
| -ra | to (motion) |
| zug | corner, nook |

Huge thanks to the EUROLITHIC team!

Andrew Wigman (PhD candidate, Italic)

Anthony Jakob (PhD candidate, Baltic)

Cid Swanenvleugel (student assistant, Romance)

Lotte Meester (internship student, Greek)

Paulus van Sluis (postdoc, Celtic)

Rasmus Thorsø (PhD candidate, Armenian)



**Universiteit
Leiden**
The Netherlands