



Indo-European: what is it? And how do we know?

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10th August 2009

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A first stab at an answer

Indo-European is the parent language of Greek and Latin.

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(Indo-European = Proto-Indo-European)

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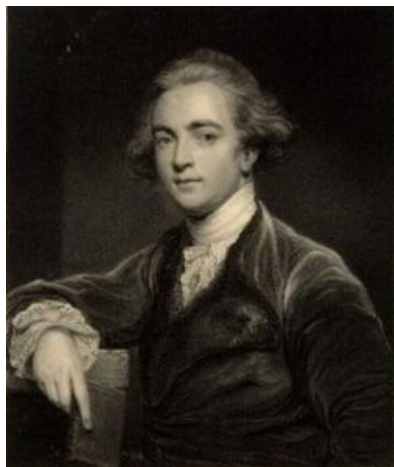
We know through using the Comparative Method.

Earlier accounts

Genesis 11:1

1 And the whole earth was of one language, and of one speech... 4 And they said, Go to, let us build us a city and a tower, whose top may reach unto heaven; and let us make us a name, lest we be scattered abroad upon the face of the whole earth. 5 And the Lord came down to see the city and the tower, which the children built. 6 And the Lord said, Behold, the people is one, and they have all one language; and this they begin to do; and now nothing will be restrained from them, which they have imagined to do. 7 Go to, let us go down, and there confound their language, that they may not understand one another's speech. 8 So the Lord scattered them abroad from thence upon the face of all the earth: and they left off to build the city. 9 Therefore is the name of it called Babel; because the Lord did there confound the language of all the earth: and from thence did the Lord scatter them abroad upon the face of all the earth.

Sir William Jones



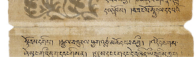
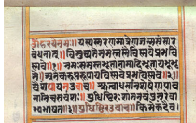
"The Sanskrit language, whatever be its antiquity, is of a wonderful structure; more perfect than the Greek, more copious than the Latin, and more exquisitely refined than either, yet bearing to both of them a stronger affinity, both in the roots of verbs and the forms of grammar, than could possibly have been produced by accident; so strong indeed, that no philologist could examine them all three, without believing them to have sprung from some common source, which, perhaps, no longer exists." (1786)

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Evidence from Sanskrit, Greek and Latin



Sanskrit

**Classical
Greek**

**Classical
Latin**

bhar-ami

pher-o

fer-o

bhar-asi

pher-eis

fer-is

bhar-ati

pher-ei

fer-it

bhar-amas

pher-omes

fer-imus

bhar-ata

pher-ete

fer-itis

bhar-anti

pher-onti

fer-unt

ΠΟΙΗΝΤΗ ΒΛΑΣΙΝΗ
 ΑΛΥΤΟΥ ΚΑΙ ΟΥΤΩΣ
 ΠΑΣΑΙ ΑΙ ΓΥΝΑΙΚΕΣ
 ΠΕΡΙΘΗΣΟΥΣΙΝΤΙ
 ΜΗΝΤΟΙΣ ΑΝΔΡΑΣΙ
 ΕΛΥΤΩΝ ΑΠΟ ΠΤΥ
 ΧΟΥ ΕΩΣ ΠΛΟΥΣΙΟΥ
 ΚΑΙ ΗΡΕΣΕΝ Ο ΛΟ
 ΓΟΣ ΤΩ ΒΛΑΣΙΝΗ ΚΑΙ
 ΤΟΙΣ ΑΡΧΟΥΣΙΝ ΚΑΙ
 ΕΠΟΙΗΣΕΝ Ο ΒΑΣΙ
 ΛΕΥΣ ΚΑΘΑΡΕΛΛΑΗ
 ΣΕΝΟΜΑ ΜΟΥΧΟΣ

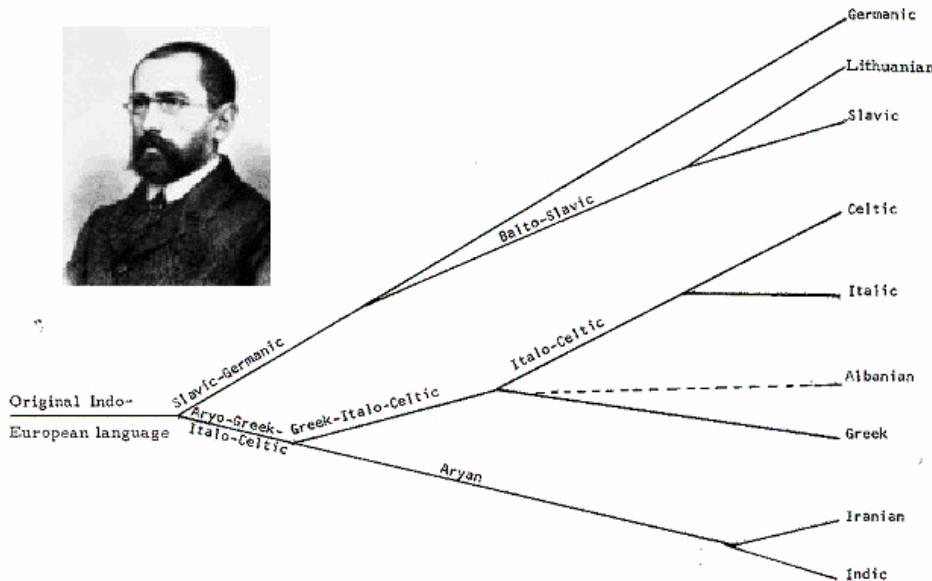
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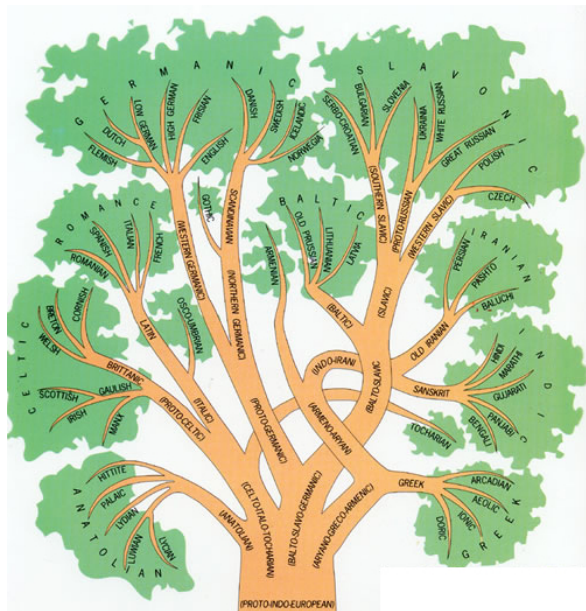
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 ueritiam. et non carit

Schleicher



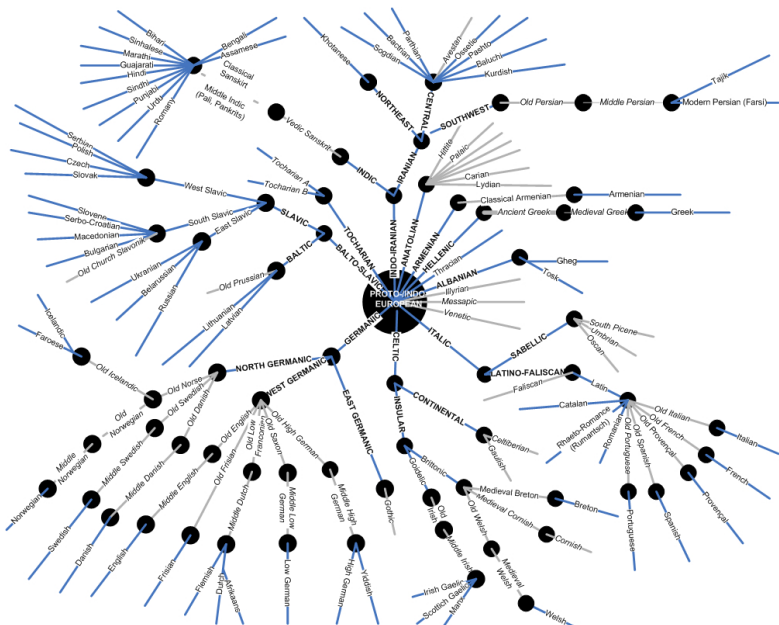
Indo-European Languages



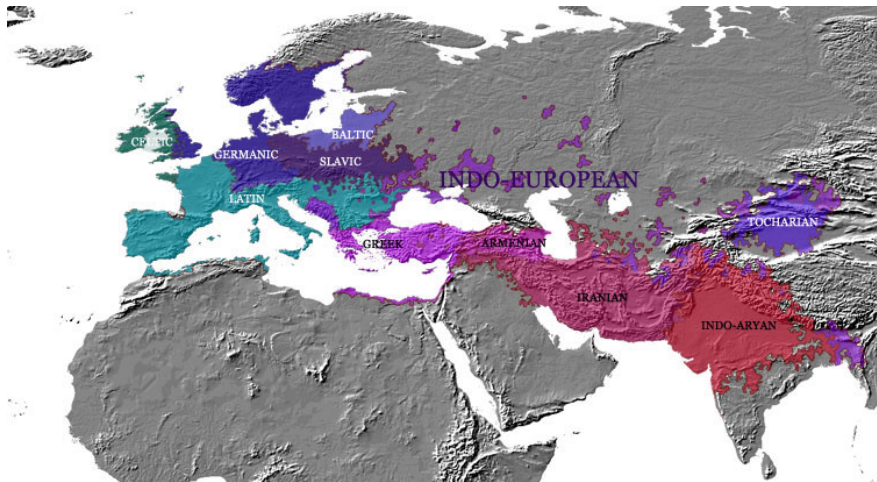
- Celtic
- Germanic
- Romance
- Slavic
- Indic
- Iranian
- Greek
- Albanian



Family Trees



Language Map



Find the cognates DIY

| Latin | | English | Latin | | English | Latin | | English |
|------------|---|----------|------------|---|----------|------------|---|----------|
| /p/ | ~ | ? | /t/ | ~ | ? | /k/ | ~ | ? |
| pater | | | tres | | | cornus | | |
| piscis | | | tu | | | cordis | | |
| pedis | | | tonat | | | centum | | |
| | | | | | | | | |
| /b/ | ~ | ? | /d/ | ~ | ? | /g/ | ~ | ? |
| cannabis | | | dentis | | | ager | | |
| | | | decem | | | granum | | |
| | | | duo | | | | | |

Cognates Key

| Latin | | English | Latin | | English | Latin | | English |
|------------|---|------------|------------|---|------------|------------|---|------------|
| <i>/p/</i> | ~ | <i>/f/</i> | <i>/t/</i> | ~ | <i>/θ/</i> | <i>/k/</i> | ~ | <i>/h/</i> |
| pater | | father | tres | | three | cornus | | horn |
| piscis | | fish | tu | | thou | cordis | | heart |
| pedis | | foot | tonat | | thunders | centum | | hundred |
| | | | | | | | | |
| <i>/b/</i> | ~ | <i>/b/</i> | <i>/d/</i> | ~ | <i>/t/</i> | <i>/g/</i> | ~ | <i>/k/</i> |
| cannabis | | cannabis | dentis | | tooth | ager | | acre |
| | | | decem | | ten | granum | | corn |
| | | | duo | | two | | | |

When is a cognate a cognate?

Egyptian in Ancient America?

| Egyptian | Uto-Aztecan |
|---------------------|--|
| i'w 'old' | *yo'o 'old' |
| sd 'tail' | *sari 'tail, dog' |
| qdi/qty 'go round' | *koti/koli 'turn around, return' |
| thw 'drunkard' | *t'iku '(be) drunk' |
| dbh 'ask' | *t—pina/*tipiwa 'ask' |
| qni 'sheaf, bundle' | *kuni/kuna 'bag' |
| bit 'bee' | *pita 'wasp, bee' |
| km '(be) black' | *koma 'dark color, black, brown, gray' |
| dqrw 'fruit' | *taka/tuku 'fruit' |
| sbk 'crocodile god' | sipak-tli 'crocodile' (Nahuatl) |

Indo-European cognates

Indo-European vs. non-Indo-European vocabulary

INDO-EUROPEAN LANGUAGES

| | | | | | | |
|------------|--------|------|--------|--------|---------|-----------|
| English | one | two | three | mother | brother | sister |
| German | ein | zwei | drei | Mutter | Bruder | Schwester |
| French | un | deux | trois | mère | frère | soeur |
| Latin | unus | duo | tres | mater | frater | soror |
| Russian | odin | dva | tri | mat' | brat | sestra |
| Old Irish | oen | do | tri | mathir | brathir | siur |
| Tocharian | sas | wu | trey | macer | procer | ser |
| Lithuanian | vienas | du | trys | motina | brolis | seser |
| Sanskrit | eka | duva | trayas | matar | bhratar | svasar |
| PIE* | oynos | dwo | treyes | mater | bhrater | suesor |

NON-INDO-EUROPEAN LANGUAGES

| | | | | | | |
|---------|------|-------|--------|------|---------|--------|
| Finnish | yksi | kaksi | kolme | äiti | veli | sisar |
| Foré* | ka | tara | kakaga | nano | naganto | nanona |



- 1 /p/ > /f/, /t/ > /θ/, /k/ > /h/
Voiceless stops become voiceless fricatives.



① /p/ > /f/, /t/ > /θ/, /k/ > /h/
Voiceless stops become voiceless
fricatives.

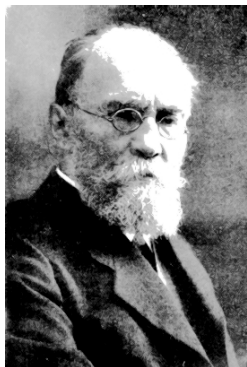
② /d/ > /t/, /g/ > /k/
Voiced stops become voiceless stops.

Putting the law in context



- Specify the contexts
- Eng. *spew*, Ger. *speien*, Lat. *spuere*
- Eng. *stand*, Ger. *stehen*, Lat. *stāre*
- Grimm's Law does not operate after /s/

Putting the law in context



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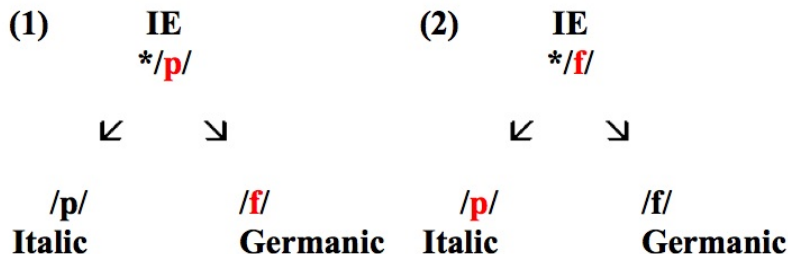
The Neogrammarian Hypothesis

Sound change is regular and exceptionless

Find a plausible reconstruction

Hypotheses

- 1 IE */p/ > /f/ in Germanic (and remained /p/ in Italic)
- 2 IE */f/ > /p/ in Italic (and remained /f/ in Germanic)
- 3 IE /?/ > /p/ in Italic and IE /?/ > /f/ in Germanic



Find a plausible reconstruction 2

Majority principle

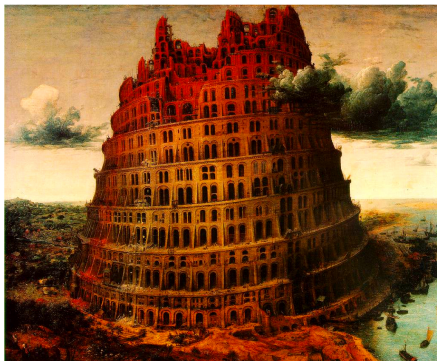
- Lat: pater
- Skt: pitar
- Grk: pater
- Eng: father

Principle of most natural development

- phonetically more natural
 - more frequent cross-linguistically
- 1 /p/ > /f/: Lenition (weakening) plosive > fricative = expected
 - 2 /f/ > /p/: Fortition (strengthening) less common

Thus, IE */p/ is reconstructed - hence, */p/ > /f/ in Germanic.

Some limitations



- Only abstraction of sounds
- Difficulty of dating items
- Difficulty of postulating no variation
- Difficulty for model of change

A lost sound: laryngeals

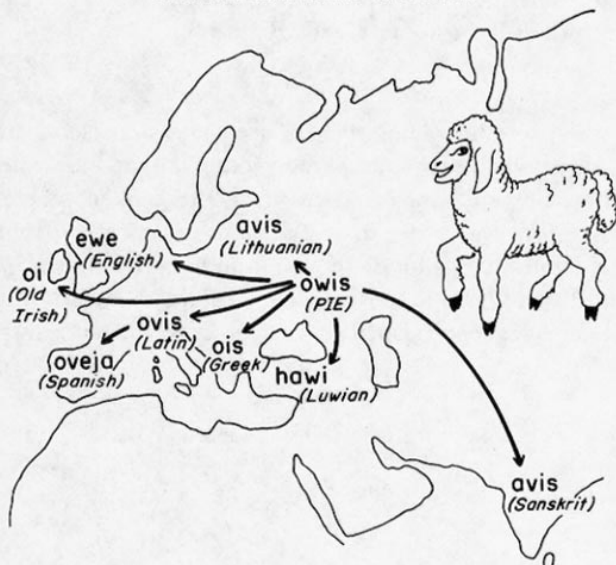


- Saussure aged 21 spotted an anomaly in the vowel system of PIE
- Proposed a series of consonants which had effects on neighbouring vowels but then dropped out
- Later confirmed by the discovery of Hittite



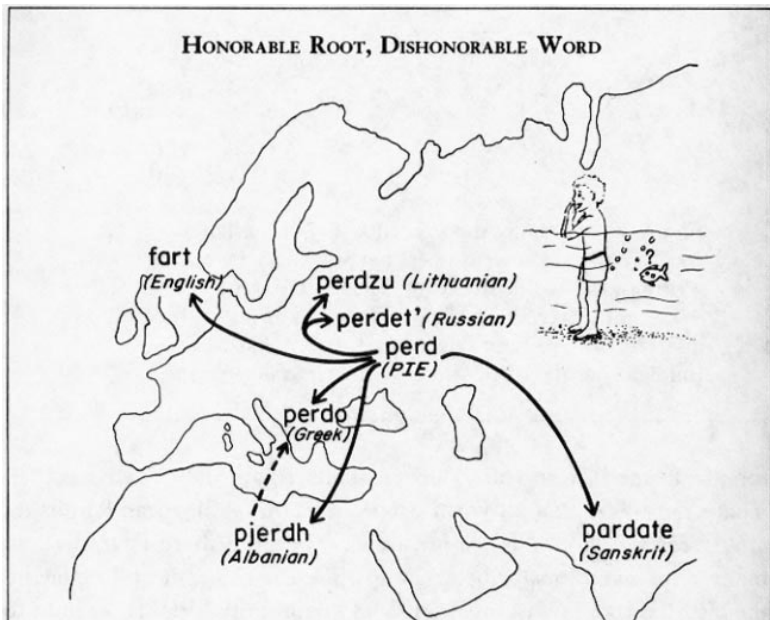
Beyond the sounds of PIE

A SHEEP IS A SHEEP IS A SHEEP



Beyond the sounds of PIE

HONORABLE ROOT, DISHONORABLE WORD



Who were the Indo-Europeans?

There are no cognates for words meaning

- tiger, camel, monkey
- olive, palm, desert, rice
- gold, silver, iron
- ocean, ship, sea

Instead, we do find cognates sets for words meaning

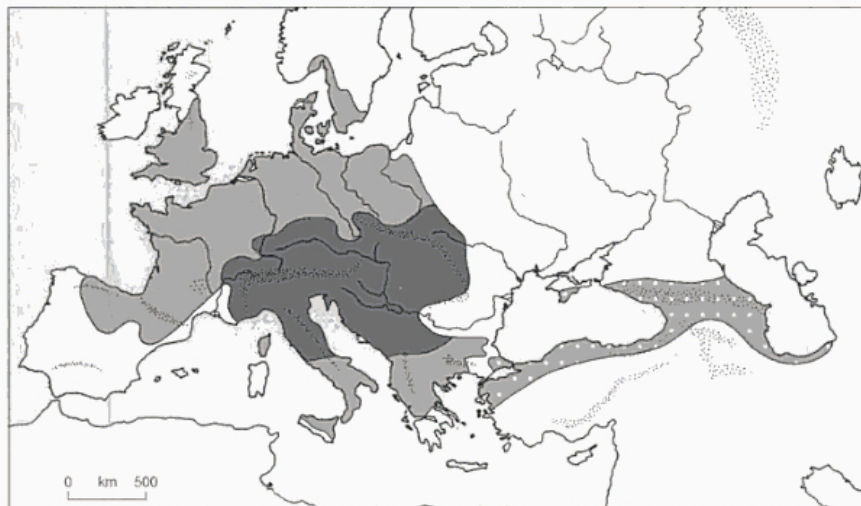
- snow, freezing, cold, winter, summer, spring
- oak, beech, birch, willow
- bear, wolf, otter, beaver, deer, rabbit
- horse, sheep, goat, pig, dog, herd, cow
- wheel, axle, door, timber, thatch, yoke, oxen, wagon
- seed, sow, weave, sew

Indo-European Geography

Cognates for 'beech' in Indo-European languages

| | | |
|-------|---------|---------------------|
| Gaul. | bāgos | 'beech' |
| Lat. | fāgus | 'beech' |
| OE | bōc | 'beech' (also book) |
| OHG | buocha | 'beech' |
| PIE | *bhāgo- | 'beech' |

Indo-European Geography



Beech Distribution of the beech. Dark shaded area represents distribution of the beech (*Fagus sylvatica*) c 4000–3000 BC; the lighter shaded area reflects expansion of the beech by the Iron Age whose eastern border marks the famous “beech line”. The shaded and dotted area represents the distribution of *Fagus orientalis* and, in the Crimea, *Fagus taurica*.

Indo-European Geography

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| Lat. | fāgus | 'beech' |
| OE | bōc | 'beech' (also book) |
| OHG | buocha | 'beech' |
| Russ | buz | 'elder' |
| Alb | bung | 'oak' |
| Greek | φηγός | 'oak' |
| PIE | *bhāgo- | 'some kind of tree?' |

A Proto-Indo-European Fable

Owis, quesyo wlhnaa ne eest, ekwoons espeket, oinom gwrrum woghom weghontm, oinomque megam bhorom, oinomque ghmmenm ooku bherontm.

Owis nu ekwomos ewewquet: “Keer aghnutoi moi ekwoons agontm nerm widntei.”

Ekwoos tu ewewquont: “Kludhi, owei, keer aghnutoi nsmei widntmos: neer, potis, owioom r wlhnaam sebhi gwhermom westrom qurnneuti. Owioomque wlhnaa ne esti.”

Tod kekluwoos owis agrom ebhuget.

A Proto-Indo-European Fable

Owis, quesyo wlhnaa ne eest, ekwoons espeket,
oinom gwrrum woghom weghontm, oinomque
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bherontm.

The Sheep and Horses 1

Owis, quesyo wlhnaa ne eest, ekwoons espekēt, oinom gwrrum
Ovis whose lana ne est, equ-os ê-spec-ε, unum grav-um
woghom weghontm, oinomque megam bhorom, oinomque ghmmenm
wagon veh-οντα, unumque μεγαν φορον, unumque hominem
ooku bherontm. Owis nu ekwomos ewewquet: “Keer aghnutoi moi
ώκυ φεροντα. Ovis νυν equ-ibus ειπε: κηρ άχνυται μοι
ekwoons agontm nerm widntei.”
equos άγοντα άνδρα ιδοντι

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Ovis whose lana ne est, equ-os ê-spec-ε, unum grav-um

woghom weghontm, oinomque megam bhorom, oinomque ghmmenm
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ὤκω φεροντα. Ovis νυν equ-ibus ειπε: κηρ ἀχυσται μοι

ekwoons agontm nerm widntei.”

equos ἀγοντα ἀνδρα ιδοντι

A sheep that had no wool saw horses, one pulling a heavy wagon, one carrying a big load, and one carrying a man quickly. The sheep said to the horses: “My heart pains me, seeing a man driving horses.”

The Sheep and Horses 2

Ekwoos tu ewewquont: “Kludhi, owei, keer aghnutoi nsmei

Equi tum εἶπον: κλυθι, ovis, κηρ ἀχνοται ἡμιν

widntmos: neer, potis, owioom r wlnhaam sebhi gwhermom

ιδοντ-ibus: ἀνηρ, ποσις, ον-ium ρα wool sibi warm

westrom qurnneuti. Owioomque wlnhaa ne esti.” Tod kekluwoos

vest (Skt. krnuti). Ovi-ium-que wool ne ἐστι. το κεκλυ-ως

owis agrom ebhuget.

ovis agrum ἐφυγε

The Sheep and Horses 2

Ekwoos tu ewewquont: “Kludhi, owei, keer aghnutoi nsmei

Equi tum εἶπον: κλυθι, ovis, κηρ ἄχνηται ἡμιν

widntmos: neer, potis, owioom r wlhnaam sebhi gwhermom

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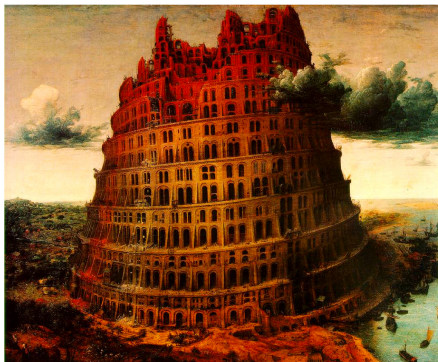
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owis agrom ebhuget.

ovis agrum ἐφυγε

The horses said: “Listen, sheep, our hearts pain us when we see this: a man, the master, makes the wool of the sheep into a warm garment for himself. And the sheep has no wool.” Having heard this, the sheep fled into the plain.



Indo-European: what is it? And how do we know?

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