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The Proto-Indo-European anaphoric and relative pronouns: analysis and
considerations

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Abstract

The present thesis will deal with the proto-Indo-European anaphoric and relative pronouns, and their possible shared origin. The discussion will be based on a large repertoire of relevant lexical entries from the whole Indo-European family, to reconstruct the most accurate pronominal paradigm and its phonology. This overhauled paradigm will be studied to extrapolate a relative chronology that will help to clarify the steps of its creation in pre-Proto-Indo-European and its differentiation between the relative and anaphoric pronoun. In the final chapters, the anaphoric pronoun will be analyzed under the lenses of the ergative theory and will be compared with the verbal augment, to determine whether they derive from the same hypothetical deictic particle. Finally, the pre-Proto-Indo-European reconstruction of the anaphoric pronoun will be compared with the Proto-Uralic pronominal repertoire to determine whether it was inherited from Proto-Indo-Uralic.

Keywords: proto-indo-european, proto-indo-anatolian, anaphoric pronouns, pronouns, deictic pronouns, anaphoric pronouns

1. The Proto-Indo-European anaphoric and relative pronouns: analysis and considerations

1.1 The Indo-European anaphoric and relative pronouns

The reconstruction of the Proto-Indo-European (PIE) anaphoric pronominal set is yet to be backed by unanimity. There are up to three major possible reconstructions, each one with its merits. The favorite choice adopted by the PIE Leiden etymological dictionaries is **h₁e*, as supported by Beekes (2011, 1983) among many others. Kapović (2017) opts instead for **e_j*, the full-graded laryngeal-less variant. Other scholars (Szemerényi 1996, Dunkel 2014) believe that the original form was PIE **ís*, therefore supporting a somewhat early presence of the typical nominative feature of the -s ending visible in Goth. *is* ‘he’ and Lat. *is* ‘he’. In addition to this non-optimal and unclear situation, it is self-evident that the anaphoric pronoun ought to be somewhat linked to the relative pronoun, **i_o-* (Dunkel 2014, Beekes 2011), also reconstructed as **h₁i_o-* (Beekes 2010), but again there is no unanimous consensus about its chronology and its inception. Not only, Anatolian evidence (Goedegebuure 2003), and many of the subsequent adverbs in later IE languages, also suggest that the form **h₁i* and **h₁ei* had an additional deictic or demonstrative reading.

From this point on, the object of the paper, the third anaphoric pronoun, will be indicated as **h₁e*.

1.2 The PIE pronominal deixis

PIE **h₁e* is by far not the only third-person pronoun. It stands together with at least four other pronominal roots, namely **ké*, **so*, **to* and, arguably, **no*. Not all pronominal roots had a deictic reading, such as **no*, whose possible original function was closer to a singularizing suffix (its usage in PIE **h₁oi-no-* ‘one’ is telling), but the rest of them also indicated rather clearly the

position of the third person in space. **ké*, cfr. Lat. *hic* ‘this’ < **t^he-ke-*, PGm. **hiz* ‘he’, Lith. *šìs* ‘this’ < **ké*, in those languages that continue its deictic reading, always indicates proximity; **so-*, **to-* do not always indicate any sort of spatial deixis, but when they do, they point to a distant person, object or location, cfr. Lat. *tum* ‘then’, PGm. **par* ‘there’. In regard to PIE **h₁e* things are instead not so clear-cut. When used as the third-person pronoun, no daughter language gives us clear indications on any deictic indication, letting many scholars suggest that this ought to be a standard, deictically non-marked anaphoric pronoun. However, when considering the attestations of **h₁e* outside the third person pronoun paradigm, the reflexes in the various daughter languages may mean opposite things, cfr. Ved. *ihá*, Av. *iða* ‘here’ Lat. *ibī* ‘there’, both reflexes of **(h₁)i-d^he* ‘here, there (?)’. This problem will be dealt in the latter part of the present thesis.

1.3 The research questions

The present thesis will try to give the best answers to these three main questions.

1. The various IE languages’ pronominal paradigms differ greatly in their details; however, they can be reduced to a couple of base forms, exhibiting a series of layers of innovation. After a detailed analysis of the single forms of the paradigm and the non-paradigmatic forms from all the IE languages, the question then becomes: how did the paradigms of anaphoric and relative pronouns look like in Indo-European, both morphologically and phonologically?
2. The relationship between the anaphoric and relative PIE pronouns has always looked very likely, however, there is no consensus on their relationship. Namely, which one originated first and gave rise to the other? And how did they relate to each other?
3. What can these considerations on the pre-PIE reconstructions of the two sets of pronouns tell us regarding the pre-PIE language overall? Namely: does it support the

ergative hypothesis? Is it possible to push the two reconstructions even further back in time and to reconstruct one, or two, common proto-Indo-Uralic pronominal sets?

1.4 The methodology

To reach a satisfactory answer to the relationship dating at pre-PIE times between relative and anaphoric pronouns, it is first necessary to review the attested data gathered from the historical languages, both regarding their regular pronominal paradigms and their isolate forms and newly created formations. Once a sound PIE reconstruction has been reached that takes into consideration all the IE forms combining it with the most recent insights in IE linguistics, then it will be possible to research it in terms of pre-PIE.

To achieve it, I will not only avail myself of the established sound laws within the IE historical linguistics, but I will further take into consideration the predictable and likely intra- and extra-paradigmatic changes that typically take place within pronominal paradigms. One popular example of this phenomenon is the origin of the paradigm of the English pronoun *he*, where a mix of two different older pronominal paradigms has taken place, namely between PGm. **hiz* ‘this’ and **iz* ‘he’. This fact is especially visible in Gothic, where the union of the two pronominal paradigms was still incomplete: there we see Got. NOM.SG. *is* ‘he’ free of the initial /h/, found instead in the dative: DAT. SG. *himma* ‘to him’.

1.5 The structure of the thesis

The thesis will follow in this order: the second chapter treats all the attested IE paradigms that continue PIE **h₁e* and the forms that may contain it as an element in more complex formations. One language alone will be representative for its branch unless it will be proven necessary to add additional pieces of information from other different forms from the same branch that will contribute to a better understanding of their common proto-language. For example, when dealing

with the Italic situation, Latin will be the language chosen to showcase the paradigm, but the overall view will be enriched by the addition of some attestation from other Italic languages.

Chapter three will be structured in the same way as chapter two, but it will deal instead with the relative pronoun.

Once the PIE reconstructions of both relative and anaphoric pronouns will be defined in chapter four, I will work on the internal reconstruction from a pre-PIE perspective of the original form of both pronouns. This will be the focus of chapter five.

2 The attestations

Probably due to its limited phonetic substance, **h₁e* is not attested in its entirety in all the IE branches. For example, it is missing in *koiné* Greek. However, in every IE language except for Tocharian, one may find traces suggesting that this pronoun was indeed once present in the proto-language pronominal repertoire.

Since the attested paradigms present in all languages have various grades of later regularization, one may opt to split the attestations into two categories: regular paradigms, and petrified forms that used to belong to an older stage of the paradigm but that have been ejected from it and have eventually found a place within a newly formed lexical item or have been re-grammaticalized into something new. The focus of this section is not a lexicographic review of the attested forms, but rather the individuation of as many petrified formations as possible. Therefore, many lexical items whose components have already been listed or that may present no relevant new information will not find a place here.

I will end each section with a brief conclusory overview in which I will clarify the degree of certainty those listed forms contained **h₁e*.

2.3 The attested forms

2.3.1 Greek

2.3.1.1 Non-paradigmatic forms

Gr. *εἰ* ‘if’.

This particle introduces in Greek a subordinate sentence expressing a wish, a condition or a question. It is therefore not a pronoun. However, both Beekes (2010, 379) and Dunkel (2014, 186, 261) lean towards indicating the origin of this particle from the PIE demonstrative pronoun **h₁e*. More specifically, the form Gr. *εἰ* would have originated from the inflected locative form PIE

h₁e-*j. The shift in meaning from *‘in this/that’ to ‘if’ is remarkably similar to Lat. *sī* < PIE **sej* (LOC. SG. of **so-*). This word was also the base for Gr. *ἐπεὶ* ‘after, since, when (referring both to past and future times), Gr. *εἴθε* ‘if only’, Gr. *εἴτα* ‘then, next’.

Gr. *ἔννῃ* ‘the day after tomorrow’

This Greek word was limited to adverbial expressions and is always found in correlation with Gr. *ἡμέρα* ‘day’. The word is reconstructed as composed of two IE elements: the first is PIE **h₁e-*, the second **-no-*, a pronominal stem indicating distal deixis that is featured in many other formations related to **h₁e-*.

Gr. *ἐκεῖνος* ‘that’

The standard Greek pronoun to indicate a distant person or object, translatable as ‘that, that one’, has had a fascinating genesis. The pronoun is composed of as many as three IE elements. The first one, sometimes referred to as “augment”¹, is rather better reconstructed as the continuation of PIE **h₁e-*. The second, ***ke**, is another deictic pronoun, indicating instead proximal deixis, ‘this’. The last one, **-no-*, is an element that can be often found in combination with pronouns. The fact that in older attestations of Ancient Greek one may find a distinction between Gr. *ἐκεῖνος* ‘that one already mentioned’ and Gr. *κεῖνος* ‘that one’ would suggest that the pronominal element *ε* could still be understood by proto-Greek speakers as an anaphoric element.

Gr. *ἐχθές* ‘yesterday’

Gr. *ἐχθές* is reported in both Beekes (2010, 1632) and Dunkel (2014, 267) as a variant of *χθές*. Dunkel does not indicate the origin of the initial *ε*-, while De Vaan suggests that it may be from **h₁e* and I agree with him. It is possible to envision that at its inception the word originally

¹ Kapovic 2017, 45.

meant “yon day”, which is a befitting description for a day not that far in the past and it also distinguishes it from “this day, today”.

Gr. *ī* ‘she’

This hapax (Soph. Fragm. 471) is the only trace of the Greek descendants of PIE **sih₂*. This PIE pronoun can be found also in Goth. *si* ‘she’, OIr. *sí* ‘she’ and Ved. *sīm* ‘him, her, it, ever’ and is itself a combination of **s-* (from **so, tod*) + **h₁ih₂* (feminine of **h₁e*).

Gr. *īā* ‘one and the same, the one’

The pronoun is also attested in some of its inflected forms, such as: GEN. SG. *ἰῆς*, DAT. SG. *ἰῆ’*, DAT. N. *ἰῶ*, ACC. M. *ἰόν*. It is interesting to note that the reconstruction Gr. *īā* is thought to be **i-ih₂* by Dunkel (2014, 590) because there is no aspiration, which is instead present in Gr. *ōς* < **h₁iō-s*. Instead, I find myself in agreement with De Vaan (XXXX, 206), who etymologizes Gr. *īā* as the regular feminine counterpart of Gr. *εἷς* ‘one’. In his view, **smih₂-*, the feminine stem, was reduced to **sī-*, due to the gravity of the consonant cluster. Therefore, Gr. *īā* must be viewed as cognate of Hitt. *šias* ‘one’, and not of Goth. *si* ‘she’, as it was instead advanced by (Beekes 2010, 571).

Gr. *ιθαγενής* ‘indigenous, born here’

This word, a synonym for *αὐτόχθων*, can be divided into two parts. The second is the clearer one, simply being the suffix *-γενής* ‘born of’. The first one instead can be argued to be composed by PIE **h₁i-* and by **-d^he*, which together meant ‘here’. The first element Gr **ιθα* did not survive on its own, but its existence can be traced back to PIE times thanks to its cognate Lat. *ibī*.

Gr. *īν* ‘him, her, it’

In the same way as Gr. *ἴα*, Gr. *ἴν* is a remnant form found outside Attic and the *koiné* and it belonged to the PIE pronoun **h₁e-*. In the specific, Gr. *ἴν* is an exact reflex of the original IE accusative form **h₁i-m*, cognate of OLat. *im* 'him'.

Gr. Hom. *μιν* 'him, her'

This pronoun form from epic Greek refers to both sexes and to neuter nouns. However, it seems plausible that it was originally a reduplicated accusative formation, like Lat. *emem*. The difference between the two forms is that Greek *μιν* must have been formed by the reduplication of **h₁im* and not of **h₁em*. Whether this trait may be of any meaningful difference, it is hard to say.

Final considerations

With the exception of Gr. *ἴα*, and possibly of Gr. *ἰθαγενής*, I am convinced not only that all the forms listed here can be traced back to PIE **h₁e*, but also that in an older stage of Greek existed an anaphoric pronoun that directly descend from PIE **h₁e*, as demonstrated by Gr. *ἴ* 'she' and *ἴν* 'him, her, it'

Latin and other Italic languages

2.3.1.2 Paradigmatic form

		Masculine	Feminine	Neuter
sg.	Nom.	<i>is</i>	<i>ea</i>	<i>id</i>
	Acc.	<i>eum</i>	<i>eam</i>	<i>id</i>
	Gen.	<i>eis</i>	<i>eis</i>	<i>eis</i>
	Dat.	<i>eī</i>	<i>eī</i>	<i>eī</i>
	Abl.	<i>eō</i>	<i>eā</i>	<i>eō</i>
Pl.	Nom.	<i>eī</i>	<i>eae</i>	<i>ea</i>
	Acc.	<i>eōs</i>	<i>eās</i>	<i>ea</i>
	Gen.	<i>eōrum</i>	<i>eārum</i>	<i>eōrum</i>
	Dat.	<i>īs</i>	<i>īs</i>	<i>īs</i>

NOM. SG. M. Lat. *is*, Os. *izik*, Um. *erek*.

Leaving aside the Osco-Umbrian element $*-ke^2$ typical of the pronouns, the original Plt. forms ought to be $*es$ and not $*is$ as it is usually reconstructed, due to the vocalism in Umbrian.

ACC. SG. M. Lat. *eum* (OLat. *im*, *em*), Os. *ionc*, Um. *eu*

Lat. *eum* is the regular form in classic Latin. In OLat. one could find *im* ‘him’ and *em* ‘id.’, together with Os. *ionc*, Um. *eu*. In this case, the older Latin forms allow us to reconstruct $*im$ for proto-Italic. However, there are two ways to interpret Lat. *eum* and Um *eu*: on one hand it is possible to imagine that the leveling of $*im$ to $*eom$ had already taken place in Proto-Italic but it had not reached the tipping point of replacing the older form, and that the two forms coexisted without any difference in meaning for a while, on the other, it is not unreasonable to

² Which is by itself an additional piece of evidence of the formation of new pronouns by combining older and more basic pronominal elements. Plt. $*es + ke >$ Os. *izik*, Um. *erek*. According to De Vaan (2008, 309-310), in Osco-Umbrian forms the element $*ke$ was added after the reduplicated form of the simple demonstrative pronoun, giving therefore Os. *idik* $< *id + id + ke$.

think that the leveling has taken place twice and independently, once in Latin and once in Osco-Umbrian.

GEN. SG. M. N. Lat. *eius*, Os. *eiseis*, Um. *ererek*.

The consensus (also in Weiss 2009, 241) on the reconstruction of this set of cognates is Plt. **esios* < **h₁es-io+s*. The element **-io* is often used to mark the genitive. The additional **s* marks the genitive twice.

DAT. SG. Lat. *eī*, Um. *esmei*, SPic. *esmik*.

Once again, the pieces of evidence available thanks to the minor Italic languages preserve information about the older situation which is instead lost in Latin. In fact, while Lat. *eī* < **eiiei* (de Vaan 2008, 309-310 and Weiss 2009, 342) appears to be built on the regularized oblique/plural stem, about which we will discuss later, plus the regular dative singular of the 5th declension (cfr. *diēs*, *diei* ‘day, to the day’), while Plt. **esmei* continues PIE **h₁e-sm-ei*, Goth. *imma*, Ved. *asmái*, a formation shared by other IE languages.

ABL. SG. Lat. *eōd*, Os. *eisud*, Um. *eruku*.

The Italic forms point to the reconstruction Plt. **eisōd*. This is however due to the spread of **eis-* as the oblique stem. It is easy to spot a divergence from PIE **h₁e-sm-ōd* > Ved. *asmāt*.

NOM. PL. Lat. *eī* (but also *eīs*, *iī*), Os. *iusc*, Um. *euront*.

The reconstruction of the proto-Italic proto-forms becomes more difficult when dealing with the plural. Lat. *eī* points to **ei-oi* (Beekes 1983, Dunkel 2013, 369), with an additional plural marker *-s* in the case of Lat. *eīs*, an attested variation. Oscan adds the usual pronominal clitic *-c* while the Umbrian form is enlarged by the plural marker *-ont*.

ACC. PL. Lat. *eōs*.

Since there are no attestations of the accusative plural form in other Italic languages that I am aware of, it is impossible to determine the accusative plural in proto-Italic. However, based on Ved. *imān* and on Goth. *ins*, one may determine that the Latin form does come from **h₁e-ons*, like all the others.

GEN. PL. Lat. *eōrum*, Os. *eisunc*, Um. *eru*.

Although the first part of this same pronoun differs in all three Italic languages, the ending has remained stable, namely **-s-om*. With these pieces of information alone, it is difficult to determine the proto-Italic form. Beekes (1983) suggested **eisom*.

NOM. SG. F. Lat. *ea* Os. *ioc*.

The nominative feminine, together with the accusative, is an Italic innovation based on the later full grade **h₁ei-* (Dunkel 2013, 369) and has been integrated into the Italic *ā*-stem.

NOM./ACC. SG. N. Lat. *id*, Os. *idic*, U. *eřec*.

While Oscan and Umbran show the addition of the now usual pronominal element POUm. **ek*, Latin conserved the original PIIt. pronoun **h₁id*.

NOM./ACC. PL. N. Lat. *ea*, Os. *ioc*, Um. *eo*.

The consistency of this form allows us to reconstruct the PIIt. form **eiā*, which is identical to the nominative singular feminine. In my opinion, this is no coincidence: this form can be taken as an additional proof of the hypothesis according to which the feminine singular was originally the neuter plural, branching off from its collective meaning. However, since this form does not reflect **h₁i-h₂* but rather the more recent full grade formation **h₁ei-h₂*, one can assume that this is a later independent innovation.

2.3.1.3 Non-paradigmatic forms

Lat. *eō* ‘thither’, Lat. *eā* ‘along that road’

Originally just two ablative forms of Lat. *is*, these two words have been grammaticalized due to the fixed expressions Lat. *eō locō* (but also *eō tempore*) and *eā viā*. These adverbials carry a distal deictic meaning.

Lat. *enim* ‘truly’, Os. *inim*, Um. *ene, enem, enu, enno* ‘and’.

One may look at this pronoun and come out with two different interpretations on how its reconstruction ought to be. Dunkel (2014, 57) projected it back to a combination of **no* + *ih₁*. In his view, **no* was the oblique stem of **áno* ‘up, upwards’. My view is instead in line with de Vaan (2008, 190), who traces it back to PIE **h₁e-no-m* ‘to that’. In his view, the original pronoun **h₁e* was enlarged already in PIE times with the suffix **-no-* (see Av. *anā* ‘thus’, OAv. *anā* INSTR. SG. M.).

However, it turns out that it is more difficult than expected to explain the vocalism of the second syllable. In order to explain this **i*, De Vaan suggests that there is a third possibility, which states that Lat. *enim* and Hitt. *ini* ‘that, it’ have a common origin from PIE **h₁e-n-* + *i* (locative) + *m* (accusative of direction), thus predating the emergence of the variant with additional **i* back to PIE times. This is in my opinion however incorrect, given the fact that Hitt. *ini* ‘it’ does not come from PIE **h₁i-n-i* but rather is taken from ACC. SG. C. **h₁im-i*, and in Latin intervocalic **-m-* is retained.

All in all, I believe that the first element within this adverb can be traced back to **h₁e-*, while everything else concerning it is still unclear.

Lat. *ecce* ‘here it is’, Os. *ek(uk)*, Um. *eso*.

While it is universally accepted that the second element of Lat. *ecce* is to be reconstructed as PIE **-ké*, the first element is a matter of contention. According to de Vaan Lat. *ec-* is itself a

combination of PIE **h₁e-* + the enlargement **k*, while, in his 2013's LIPP, Dunkel advocates that the first element of Lat. *ecce* ought to be simply PIE **ed*, the pronoun meaning 'it'.

I find myself in agreement with de Vaan, not only because proof of the existence of PIE **h₁ed* are scarce, but also because Lat. *ecce* is primarily NOM. SG. M., while the rarer marked NOM./ACC. N. variant was Lat. *eccum*, and therefore for it to be true it would be necessary to postulate a shift of **he₁ed-ke* from neuter to masculine.

Once again, Latin gives us opposite and unclear clues about the original deictic reading of the PIE pronoun. Lat. *ecce*, meaning 'here it is', indicates proximal deixis, while Lat. *ibi*, containing the same PIE deictic/anaphoric pronoun, referred to distal deixis.

Lat. *equidem* 'truly, indeed'

In order to analyze Lat. *equidem*, it is important to spend a few words on Lat. *quidem* 'surely, quite'. According to Dunkel and Pokorny (1959, 181) it was a clitic adverb formed by **k^wid* and **em*. The original meaning can be inferred by Osc. *PIDUM* 'anything', which is more in line with the pronominal and interrogative nature of its constituents. It is also possible to imagine that this adverb was formed by using the new Latin marker *-dem*, similarly to *totidem*, *tantumdem*, etc.; however, the existence of Osc. *PIDUM* favours the first interpretation.

Together with this adverb then, a second variant showcasing initial **h₁e* is present. *Equidem*, tonic, is stronger than *quidem*, which is mostly used as a diminutive adverb. From an IE point of view, this situation can be compared with Gr. *ἐκεῖνος, κεῖνος*.

Lat. *ibi* 'there', Um. *ife* 'there'.

The two words are exact cognates, however their PIt. proto-form has not been assured yet. De Vaan (2008, 295) is not sure whether it comes from PIt. **ipei* < PIE **h₁i-b^hei*, or from PIt. **ifei* < PIE **h₁i-d^hei*. However, **h₁i-d^hei* appears to be the better solution, in the light of Paali *idha* 'here'

< PIE **h₁i-d^he*. The fact that PIIr. **id^ha* and Gr. **iθa* mean ‘here’ while Lat. *ibī* is the exact opposite, is telling. In other words, the original PIE meaning is moot.

Lat. *īdem*, *eadem*, *idem* ‘the same’, Os. *isidum*.

This Latin pronoun represents one of the best instances of both re-analysis and paradigmatic leveling taking place in the same pronominal paradigm.

First, the general structure of the pronoun is a composition of PIIt. **es*, *eiā*, *id* and PIIt. **em*, which was itself the accusative form of PIIt. **es*, as discussed previously. However, it is safe to say that the form **em* was re-analyzed as **-dem* from the NOM. SG. N. form **idem*.

Other than this, it is not clear whether this paradigm had originally been reduplicated, belonging together with OLat. *emem* (Paulus ex Festo 67.5.L) or rather just the element **em* had been added to it.

The long *ī* in *īdem* is the result of the compensatory lengthening caused by the elimination of /s/, from what we can reconstruct as **isdem* > *īdem*.

During the process of paradigmatic regularization and simplification, the first part of the pronoun was modeled exactly after the simple Lat. *is*, *ea*, *id*, with the addition of *-dem*.

This element *-dem* spread quite successfully to other words such as *tandem*, *ibidem*, and so forth.

Lat. *idoneus* ‘suitable’

De Vaan leaves this entry without etymology while Dunkel reconstructs it as a *-neus* adjective from an unattested form **idō* and interprets its original meaning as **‘suitable for this’*.

This is not far-fetched at all, given the fact that **idō* would be the continuation of PIE **id oh₁* which in turn gave Goth. *ita* ‘it’. The transformation from a pronoun to (a part of) an adjective is not too uncommon, e.g. Ved. *tadīdharta* ‘focused on a specific object’.

Lat. *ille*, *illa*, *illud* ‘that’

The reconstruction of Lat. *ille* is contested. One solution, supported by de Vaan (2008, 298) in his etymological dictionary, is that the PIE preform ought to be **ol-no-*, visible in OLat. *ollus*. This older form, according to the Vaan, was reshaped in *ille* through analogy with *iste*, adopting from it the initial and final vowels. One advantage of this reconstruction is that it is indeed true that the older form appears to be *ollus* or *olle* and not *ille*. This is also Weiss' interpretation (2009, 345).

On the other hand, the reconstruction **is-li*³, backed by Dunkel (2014, 489, 593), brings the pronoun closer to the other anaphoric pronouns like Lat. *ille*. In this case, both Lat. *ille* and Lat. *iste* derive their first element from PIt. **es*. To account for Lat. *ollus*, Dunkel has two hypotheses: the first one states that the initial vowel /i/ changed to /o/ due to the labializing influence of /l/, while the ending *-e* was replaced by *-us* to mark more clearly the nominative, which in the original form had been obscured by the total assimilation of /s/ to /l/, while his second hypothesis is that the two words did not derive from the same PIE form. He states that Lat. *ille* is the continuation of PIE **is-le*, while PIE **ol-li* is continued as Lat. *olle*, *ollus* 'he, that'. Since both solutions have their merits, it is difficult to reach a final solution. However, I incline towards the reconstruction PIt. **es-le*, because its formation is comparable to Lat. *iste* < PIt. **es-te*

Lat. *ipse, ipsa, ipsum* 'himself, herself, itself', Os. *essuf*, Um. *esuf* 'he'

The reconstruction of this pronoun is notoriously controversial. The traditional reconstruction describes /p/ as an anaptyctic consonant arose to distinguish the two individual pronouns in the accusative forms **sumsum* and *samsam*, or as the epenthesis necessary between **/m/* and **/s/* in **eiomso-* (Dunkel 2013, 738 and Weiss 2009, 346).

³ **li* is a distal deictic particle.

De Vaan instead suggests that the /p/ found in Latin should be traced back to PIE **pe* (cfr. *quippe* ‘truly’, *nempe* ‘indeed’), a particle that was inserted between the two parts that formed a reduplicated demonstrative pronoun in proto-Italic. In other words: PIt. **soso* ‘that’ >> **sopeso* >> **espeso*.

Once again, I side with de Vaan’s interpretation. Not only, his interpretation circumvents the unlikely possibility that an intrusive **p/* had spread through the entire paradigm from only one source, but it also allows to draw a parallelism between OLat. *sapsa*, *sumpsum* and OLat. *eapse*, *eumpse* with Sabellic **e-so-* (GEN. SG. M. Os. *eiseis*, Um. *erer*) and it is therefore preferable.

In other words, while in Sabellic prevailed the original formation without the addition of **pe*, in Latin instead the forms with **pe* stuck.

Additionally, an inner Italic formation such as **e-pe-so*, transposable as ‘he-that-that’ can only mean that the possible deictic meaning of **h₁e* had to be forgotten by PIt. times.

Lat. *iste, ista, istud* ‘that (near you)’, Um. ACC. SG. M. *estu*, NOM. ACC. SG. N. *este*.

Like PIt. **e-so-* described under Lat. *ipse*, Lat. *iste*, originated from a combination of PIE **h₁e-* and **so*. However, this time, the inflected forms that gave birth to this pronoun were NOM. SG. M. **es* and OBL. **to-*. Dunkel, Weiss and De Vaan agree. Moreover, the existence of PIE **e-so* is also supported by Ved. *eṣá*, which however continued **h₁ei-so-* instead of **h₁es-te*.

It is possible to imagine the existence in PIE of a composed pronoun whose two elements were both inflected, as in NOM. SG. M. **e-so*, NOM./ACC. SG. N. **id-to* and so on, which gave rise to many of the forms analyzed in this chapter. Although this being just speculation, it is not a far-fetched one, since at least in Proto-Italo-Celtic, reduplicated formations such as **e-e* (< **h₁e-h₁e*) and **so-so* were common (de Vaan 2013).

Lat. *ita* ‘indeed, as said’, Um. *itek*

On one hand, the origin of the second element is not completely clear, possibly coming from PIE **th₂*, which would then explain the short vowel or NOM- ACC. PL. **teh₂*, whose advantage is to align this adverb with the traditional reconstruction of the PIE paradigm **to-*. According to both de Vaan (2008, 311) and Weiss (2009, 148)

On the other, it is very likely that first element originates from the object of this research, that is **h₁e*, meaning that if we assume that the primary meaning of **h₁e* was deictic, then the meaning of the unverbated pronoun could be comparable to something like ‘it-that’.

However, due to the existence of Lat. *item* ‘just like, in the same way’, Lat. *iterum* ‘the second one’, it is possible to conclude the pronoun Lat. *ita* was taken as the base from which to build these new adverbs.

Lat. *ūnus* ‘one’

This Latin numeral is also attested as OLat. *oinos*, and, together with its many IE cognates, can be safely traced back to a combination of **h₁oi*, the o-grade of **h₁e-*, plus the singularizing particle **no-*.

Lat. *immō* ‘certainly’

The etymology of this Latin adverb has not been fully understood yet. De Vaan (2008, 300) admits that the etymology is uncertain. Kloekhorst (2006, 446) and Dunkel (2014, 527), however, agree that the best solution is to etymologize Lat. *immō*, together with Hitt. *imma*, as build from PIE **im + moh₁*, in which the last element is the o-grade variant of **meh₁* ‘but’, a particle often used to build adversative adverbs.

Final considerations

Overall, the lexical elements that be safely reconstructed as reflection of PIE **h₁e* in my opinion are Lat. *ita*, *iste*, *ille*, *ecce*, *equidem*, *īdem*, *ibī*, *ūnus*, and, of course, *eō*. Instead, regarding

Lat *immō*, *enim*, and *idoneum* there there are alternative solutions, and a consensus has not been reached yet.

2.3.2 Indo-Iranian languages

2.3.2.1 Paradigmatic forms

Vedic and Avestan, chosen as representative of the Indian and Iranian branches of the Indo-Iranian IE sub-branch, share many common traits that must therefore have been common in PIIr. However, some mismatches between the two are worth to be taken into consideration individually. Generally speaking, the pronoun is mostly based on the new demonstrative stem *ay-*, together with the suppletive stems *a-* and *aná-* (Mayrhofer 1986, 102)

		Vedic		
		Masculine	Feminine	Neuter
SG.	NOM.	<i>ayám</i>	<i>iyám</i>	<i>idám</i>
	ACC.	<i>imám</i>	<i>imám</i>	<i>idám</i>
	GEN.	<i>asyá</i>	<i>asyás</i>	<i>asyá</i>
	ABL.	<i>asmáđ</i>	<i>asyás</i>	<i>asmáđ</i>
	DAT.	<i>asmái</i>	<i>asyái</i>	<i>asmái</i>
	LOC.	<i>asmín</i>	<i>asyám</i>	<i>asmín</i>
	INSTR.	<i>ená</i>	<i>ayá</i>	<i>ená</i>
PL.	NOM.	<i>imé</i>	<i>imás</i>	<i>imá(ni)</i>
	ACC.	<i>imán</i>	<i>imás</i>	<i>imá(ni)</i>
	GEN.	<i>eśám</i>	<i>āsám</i>	<i>eśám</i>
	DAT.	<i>ebhyás</i>	<i>ābhyás</i>	<i>ebhyás</i>
	LOC.	<i>eśú</i>	<i>āṣu</i>	<i>eśú</i>
	INTR.	<i>ebhís</i>	<i>ābhís</i>	<i>ebhís</i>

NOM. SG. M. Ved. *ayám*, Av. *aiiōm*

The Vedic and Avestan forms both descend from PIIr. **ajam*. In my view, this pronoun was reshaped after the oblique **h₁ei*, while the original root is still visible in the feminine and neuter forms. After this, in common with the other nominative forms of the same paradigm, pronominal particle **-Hám*, also visible in Skt. *tvám* ‘you’ and *ahám* ‘I’. In the end, the reshaping underwent these transformations: **e-* >> **ai-* >> **ai* + **-Hám*.

This form has been taken as proof that **h₁ei-* could be postulated for the PIE nominative. But, as already stated, this does not take into consideration the Latin and Gothic forms, and it comes from the preconception that Vedic was the language most faithful to the original PIE.

ACC. SG. M. Ved. *imám*, Av. *iməm*

PIIr. **imam* appears to be based on PIE **im*, with of the same particle **-Hám* added to it.

Dunkel (2014, 317) suggests that the element **-am* is not the evolution of PIE **-om* but rather of PIE **-em* and draws a comparison between PIIr. **imam* < (**PIE im-em*) and OLat. *emem*. I do not agree with this comparison. OLat. *emem* appears to continue (de Vaan 2013) PIE **h₁im-im*, and therefore being a pure reduplicated pronoun. The Vedic forms does not showcase two times the same form with the vowel /i/. Also, PIIr. **-Hám* is present in all the direct case forms, on top of the other personal pronoun, and should not be treated as a reduplicated pronoun.

GEN. SG. M./N. Ved. *asyá*, Av. *ahiiā*, *axiiāca*, *ahe*, *aṇhe*

Although Avestan presents some variation of its own, Av. *ahiiā* and Ved. *asyá* derive from PIIr. **asyá*. This form is an alteration of PIE **h₁eso*, where the pronominal genitive ending was replaced by the regular genitive ending **-sya*.

ABL. SG. M./N. Ved. *asmád*, Av. *ahmāt*

The ablative form is a faithful descendant of PIE **h₁esmōd*, analyzable as **h₁e* (pronoun base) + **-sm-* (oblique stem for the ablative, the dative and the locative) + *ōd* (ablative ending).

DAT. SG. M./N. Ved. *asmái*, Av. *ahmāi*

The analysis of the ablative is also valid for the dative. Here the ending was PIE **-ōi* rather than **-ōd*.

LOC. SG. M./N. Ved. *asmín*, Av. *ahmī*

In the locative, the suffix **-sm-* is followed by the locative ending **-in*, also visible in Ved. *tasmin* ‘in that’.

INSTR. SG. M./N. Ved. *enā́*, Av. *anā*

The proto-form, alternatively PIIr. **ainā* or **anā*, can be interpreted in two ways. Martínez García and De Vaan (2014, 74) suggest that within the paradigm of Ved. *ayam*, Ved. *enā́* is an intrusive form originated from PIE **h₁e-no-* (cfr. OCS *onъ* ‘that one there’).

NOM. PL. M. Ved. *imé*, Av. *ime*

The PIIr. stem for the direct plural cases is based on **im-*, perhaps from the ACC. SG. M. In this case, the NOM. PL. M. can be traced back to PIE **h₁im-éi* (but also **h₁im-ói*).

ACC. PL. M. Ved. *imān*, Av. *imq*

Just as the nominative plural, the accusative plural is built on the ACC. SG. M., adding the accusative plural marker. **-óns*.

GEN. PL. M. Ved. *eṣām*, Av. *aēšqm*

The pluralizing element **óm* can be spotted in PIIr. **h₁eis-óm*. In PIIr., the root appears in the e-grade throughout the paradigm, while the element **s* might have been taken from the GEN. SG.

DAT. PL. M. Ved. *ebhyás*, Av. *aēibiō*

The PIIr. form can reconstruct as **aib^hyás*, seemingly built by the PIE **h₁ei*, the dative plural suffix **-b^hi-*, and the ending **-ós*. This construction does not appear to be a PIIr.-only form but it is also found as *ibus* in OLat. (Plaut. Mil. 1, 74), the difference being the root ablaut.

INSTR. PL. M. Ved. *ebhís*, Av. *āiš*, *aēibiš*

The instrumental plural is very similar to the dative plural, except for its ending, which is **-s* instead of **-os*.

LOC. PL. M. Ved. *eṣú*, Av. *aēšu*

The locative plural is built on the oblique plural stem **ai-* plus the locative plural suffix **-su*.

The form is regular within the paradigm.

NOM. SG. F. Ved. *īyám*, Av. *īm*

The Vedic and Avestan might seem like they evolved from two different source, however, shows the lengthening effect on /i/ due to /h₂/, from PIE **h₁ih₂* with the addition of the now usual element **-Hám* of the direct cases. This can be also spotted thanks to the disyllabic spelling of Av. *īm*.

ACC. SG. F. Ved. *imām*, Av. *imqm*

The PIIr. form was reshaped based on the ACC. SG. M. *imám*. The long vowel /ā/ in the suffix is the regular feminine accusative suffix /ām/. This form replaced the original PIIr./PIIr. **īm*, which might still be visible in the nominative.

GEN. SG. F. Ved. *asyās*, Av. *aṇhā*

Avestan and Vedic feminine oblique cases are built on the base PIIr. **asja-*, which continues PIE **h₁esj-eh₂-* (the first element being the bases genitive, and the second the feminine/neuter suffix). In the case of the plural, the genitival ending **-s* is added.

ABL. SG. F. Ved. *asyās*, Av. *aṇhāt*

The ablative differs in Avestan, where the original feminine pronominal ablative ending **-s* is replaced by the nominal and productive ablative ending *-t*.

DAT. SG. F. Ved. *asyái*, Av. *aṇhāi*

Like the ablative, the dative singular feminine is built adding the dative ending to the oblique base.

LOC. SG. F. Ved. *asyām*, Av. *aṇhe*

Vedic blended the original form ***asyé*, cf. Av. *aṃhe*, with the nominal feminine locative ending *-āyām*. Overall, however, the oblique cases of the feminine appear to be regular and therefore of more recent formation.

INSTR. SG. F. Ved. *ayā́*, Av. *aiia*

The PIIr. form **aiā́* is not built on the oblique feminine stem but appears to be a unique PIIr. formation based on the combination of PIE **h₁ei-* and **eh₁*, the instrumental ending.

NOM./ACC. PL. F. *imās̄*, Av. *imā̄*

The nominative and accusative feminine plurals are identical. Originally the form *imās̄* used to be only the accusative feminine plural and it later took over the nominative form, of which we have no traces. The reason for this is that the suffix and the ending match the PIE reconstruction for the accusative plural, **-eh₂-ns*. The stem *im-* might have been taken from the accusative masculine singular or could have been a pre-feminine formation and therefore be cognate with the other masculine forms starting with **im*. We can thus envision such a chain of events: PIE ACC. PL. F. **h₁i-eh₂-ns* >> ACC. PL. F. **im-eh₂-ns* >> NOM./ACC. PL. F.

OBL. PL. F. Ved. *ā́-*, Ved. *ā̄-*

The oblique plural feminine forms of this pronoun have a regular outlook, formed by adding the suffix and the ending belonging to their case, added to a stem *ā́-*. This stem, which must be of PIIr. date, cannot be reconstructed for Indo-European and must therefore be a local innovation.

NOM./ACC. SG. N. Ved. *idám*, Av. *imaṭ*

As it can be easily observed, Ved. *idám*, Av. *imaṭ* cannot derive from the same PIIr. source. Ved. *idám* shares the fate of the other direct cases of the paradigm: **am* was added to the

original pronoun **id* yielding *idám*. In Avestan, the original **id* is lost, while the final /m/ from acc. sg. m. *imam* is replaced by /t/ from nom./acc. sg. m. *tat* ‘that’.

NOM./ACC. PL. N. Ved. *imā́*, Av. *imā*

Together with all the rest of the direct plural cases, the nominative and accusative neuter plural is formed by adding the typical neuter ending on top of **im-*, originally the accusative masculine singular.

2.3.2.2 Non-paradigmatic forms

Ved. *addhā́*, Av. *azdā* ‘in this way, clearly’

The PIIr. form **adzdhā́* allows us to determine that this word was formed by three elements: the first element **h₁ed* reminds of **h₁id*, the NOM./ACC. SG. N. that can also be used adverbially to indicate anything deictically close, followed by **th₂* (which is what yields Ved. *ddh*), identical to the NOM./ACC. PL. N. from PIE **so, tod* and finally by **eh₁*, the emphatic particle that evolved into the final long vowel.

Ved. *ahá* ‘then, in the case that’

This form has been interpreted as formed by **h₁e* + **g^he*. The uninflected anaphoric/deictic pronoun is combined with an emphatic clitic particle.

A second possibility, followed by Mayrhofer (1986, 153), is that Ved. *ahá* was originally onomatopoeic.

Ved. *aiśámas* ‘this year’

One word in which the element **h₁e-* has made its way into a lexicalized form, Ved. *aiśámas*, is listed by Dunkel and it is etymologized as formed by **h₁ei-sómos*, literally meaning ‘this summer’. The deictic reading is clear.

Ved. NOM. SG. M./F. *asáu*, NOM./ACC. N. *adó* ‘that one’, ACC. SG. M./F. *amúm*

Ved. *asáu*, *amúm*, and *adó* (later *adás*) are two different forms of the same lesser-used paradigm (Burrow 1973, 276). The forms from this paradigm are declined in the first element, which can be recognized as belonging to **h₁e-*. For the NOM. SG. M./F., one can notice that the first element **h₁e-* has been enlarged by adding the nominative marker **-s*, for the accusative **h₁ed* and for the accusative **h₁em*. The second element, which due to its irregularity within the Vedic case system is not identical in all forms, must have been a combination of **e/o* + **u*, the only one that would yield Ved. *au/o*. According to Dunkel (2014, 192) the original element must have been PIE **au̯* (also **h₂eu̯*) meaning ‘away’. Regarding the second vowel, the original alternation was between the e-grade (*adó*) and the 0-grade (*amú-m*), the lengthened grade in *asáu* is secondary.

Av. *atāra-* ‘this one of the aforementioned two’

It seems clear that this form goes back to PIE **h₁e-tero-*. No Vedic cognate has been preserved, but one can assume that we are dealing with a PIE formation since Lat. *cēterus* can be traced back to **ké-h₁e-teros*, however, due to the high productivity of the suffix **-tero*, it is also possible that these two forms are independent innovations.

Ved. *átra*, Av. *aθrā* ‘in this place, here at this time, there, then’

Given the meaning of this adverb, it is believed that PIIr. **átra* is derived from PIE **h₁é-tre*. The adverbial ending **ter* had the meaning ‘on top of’ as per Dunkel (2014, 188); however, the connection between PIE **ter* and PIIr. **-tra* is not clear. All in all, it is safe to say that Ved. *átra* continues PIE **h₁e* in its first element (Mayrhofer 1986, 59)

Av. *aθa* ‘so, thus’

In contrast to Av. *iθā*, the first element of this form is not **h₁i*, but rather **h₁e-*. Since it appears that the two words do not differ in meaning, it is hard to determine the nature of this difference.

Ved. *éd, ét* ‘look there!’

This Vedic exclamation can be etymologized as the union as **e/o* (possibly even **h₁e*) followed by the element **h₁id* (Mayrhofer 1986, 265), whose meaning in PIIr. had been limited to ‘indeed’, but that, as visible in this word, still retained a deictic meaning.

Ved. *éka* ‘one’, Mitanni *a-i-ka-ua-ar-ta-an-na* ‘turn one’

The Vedic word for ‘one’ is unique not only within the IE framework but even within the IIr. one. Next to Ved. *é-* < PIE **h₁ói-* (Mayrhofer 1986, 263), the suffix used is **-ko-* instead of **-no-* which is found in many other IE languages.

Ved. *ená-* ‘that one’

Vedic *ená-* ‘that’, which together with *eśá-* and *etá-* forms a tripartite deictic pronominal set, is formed by the stem **h₁ej-*, from the nominative, together with the suffix **-no* (Mayrhofer 1986, 269). As it is clear, the IE cognate words of Ved. *ená-* do not have the meaning of ‘that one’, but rather of ‘one’. The relative chronology of the chain reaction that caused the word for ‘one’ to shift from numeral to pronoun is not clear. In later Sanskrit, this form became the suppletive stem for the instrumental of the regular paradigm.

Ved. *eśá-, etá-*, Av. *aēša, aēta* ‘that’

Like Ved. *ená-*, Ved. *eśá-* represents the combination of the stem **h₁ej-* with the pronoun **so-, to-*. This pronoun only appears in PIIr. and it would therefore be incorrect to trace it back to IE times. (Burrow 1973, 273).

Ved. *evá* ‘indeed’, Av. *aēuua-* ‘one’ (ACC. *ōiūm*),

Although Av. *aēuua-* and Ved. *evá* have a very different meaning, they both come from PIIr. **h₁ei-uo-* whose meaning might have been ‘just this/that’, from **h₁ei-* ‘this, that’, and **uo-* which is an adversative particle. The first part of the adverb can be also seen with a similar meaning in Goth. *ei* ‘then, and, if, and Gr. *ei* ‘if’.

In Vedic one can also find the word Ved. *evám* ‘so’. Together with Ved. *evá*, Ved. *evám* probably belonged to the same ancient paradigm and represented respectively the nominative and the accusative (Burrow 1973, 283).

Since also Gr. *οἶος* ‘one’ and ToB *-aiwenta* ‘units’ are built just like Avestan, it is safe to assume that the original PIIr. word for ‘one’ used to be **aiua-* and that it was later replaced in Vedic.

Ved. *íd*, Av. *ī* ‘indeed’

The emphatic meaning of **h₁id*, completely disjointed by any anaphoric reading and used as a stand-alone adverb rather than a pronoun is visible in this couple of cognate words. This example illustrates a textbook example of Kuryłowicz’s fourth law of analogy. The older form, **h₁id* has been pushed out of the paradigm by the newer form *idam* ‘it’, but it has retained its secondary meaning.

Ved. *idā́*, Av. *iḍa* ‘now’

According to both Burrow (1973, 277) and Mayrhofer (1986, 190), these adverbs continue PIE **h₁id*. The origin of the second element, however, is not yet clear. The two solutions are: PIE **oh₁* or **eh₁*, but there are no elements to determine it beyond doubts.

Ved. *īdṛ́ś-* ‘looking in this way’

Another form that might be reconstructed as a lexicalized formation is the Vedic adjective *īdṛ́ś-*. This adjective might be reconstructed as a combination of the Vedic root *dṛś* ‘to look’ with

the deictic element **h₁i-* (Mayrhofer 1986, 204). However, since this formation is only attested in Vedic, I doubt it can be traced back to PIE times. Moreover, the nature of the length of *ī* is unknown.

Ved. *ihá*, Av. *iḍa* ‘here’

Together with its Greek cognate **iθā* or **iθα* in *ἰθαγενής*, Ved. *ihá* and Av. *iḍa* have a proximal deictic reading. In this set of adverbs, the adverbial ending **-d^he/i* is added to the stem **h₁i-* (Mayrhofer 1986, 203).

Ved. *itás* ‘from here’

This form appears to be a combination of PIE **h₁i*, the proximal deictic stem, and Ved. *tás*, a form that does not exist by itself, but that can be linked to Ved. *tád*, that means ‘there’ when used adverbially. Its usage can be confirmed by the related Vedic word *itaścetaśca* ‘hence and thence, hither and thither’.

Ved. *itara-* ‘the other one’

Ved. *itara-*, from **h₁i-tero-*, is clearly formed by the pronoun **h₁e-* and the contrastive suffix **tero-*.

Ved. *īti* ‘in this manner’, Av. *ūitī*

The PIE form from which Ved. *īti* came from can be reconstructed as PIE **h₁i-th₂*. The element **h₁i-* is reflected in the proximal deictic meaning ‘in this manner’, while the second element **th₂* is identical to the plural neuter of the pronominal set of **so*, **tod*.

Ved. *itthá*, Av. *iθā* ‘so, thus’

The same bare stem is again visible in PIIr. **ittHā* ‘so’. Its PIE reconstruction can be deduced by Ved. /th/ which can only arise through the contact of PIE **t* and **H*. Dunkel (2014, 215, 369) suggests that the second element of this adverb ought to be **th₂*, which also represents the accusative plural neuter. The nature of reduplicated /tt/ is unexplained, one way to reconstruct the form as PIE **h₁id-th₂*, however the consonant cluster **/dtH/* would produce **/ddh/*

according to Bartholomae's Law. Bearing in mind these two notions, it is possible to reconstruct PIE **h₁i-th₂-ó/éh₁*. The nature of the last vowel cannot be reconstructed.

Av. *iθra* 'here, now'

Like Av. *aθrā*, *iθra* is formed by the proximal deictic pronoun and the contrastive or oppositional adverbial suffix. The difference in meaning appears to be minimal.

Ved. *iva* 'if'

Vedic *iva* was in the past believed to represent, as reported Dunkel (2014, 763,766), the sound /va/. This is no longer acceptable thanks to the testimony of Hitt. *i-wa-ar* 'in the manner of, as'. The immediate PIE reconstruction ought therefore to be PIE **h₁i-ur/yn*. However, the discrepancy between the Hittite and Vedic forms in regard to the final sound allows us to dig deeper through internal reconstruction. If one assumes, correctly in my opinion, that Ved. *iva* and Hitt. *i-wa-ar* are cognate, then one must also posit that the suffix behaved like other heteroclinic forms and that the difference between the two forms originated from two different case forms of the same word: the direct case for the Hittite word (**h₁ei-ur*, as per Kloekhorst 2006, 489-490), and the oblique, perhaps locative one, for the Vedic form (**h₁i-uen* >> **h₁i-yn*). Kloekhorst however interprets the first element not as the anaphoric element, but rather as a petrified verbal noun from the root of to go **h₁ei-*. Its heterocliticity, in addition to the fact that the word does not seem to indicate any type of deixis nor anaphor, may favor Kloekhorst's interpretation.

Ved. *céd*, Av. *cōiṭ* 'when, if'

This formation, visible only in Ilr., must be etymologized, also taking into consideration its meaning, to PIE **k^we-h₁id*. The element **k^we* has here a conditional meaning, possibly originally 'whenever'.

Ved. *néd*, Av. *nōiṭ* 'not indeed'

This emphatic negation appears to be formed by PIE **né* ‘not’ followed by **h₁íd*, used again with an emphatic meaning.

Ved. *svid* particle that makes indefinite the adjective it is attached to.

This particle, also visible in its accusative *svin*, usually follows interrogative pronouns (Dunkel 2013, 375) and can be translated as ‘who/what do you think?’. Dunkel suggests that its etymology is a combination of **h₁su-* ‘good’ and the pronoun **h₁id*. Similar in meaning but derived from **ku-* ‘who?’ is also the Vedic interrogative particle *kuvíd* ‘maybe’.

Ved. *tadídārtha* ‘focused on a specific object’

This Rigvedic word is according to Dunkel a *bahuvrīhi* compound-word built with *tad id* + *ārtha* (goal, aim). The first part of the compound comprises Ved. *tad* ‘that’ and *íd* ‘indeed’, which used to be the original neuter singular anaphoric pronoun.

Final considerations

On one hand, the forms that are less certain to continue the anaphoric pronoun may be: Ved. *tadídārtha*, as it is always difficult to extrapolate the pronoun from an unverbated word, given its limited phonemic substance; Ved. *ahá*, which may well be onomatopoeic; Ved. *īdṛś*, may contain **h₁i-*, also given its anaphoric meaning, but it is difficult to explain the origin of the long vowel. On the other, all the pronouns listed above have a high degree of derive from PIE **h₁e*, especially the pronominal sets built from Ved. *e-*.

2.3.3 Anatolian

2.3.3.1 Paradigmatic forms

Hittite made use of three sets of deictic pronouns (Kloekhorst 2012, Goedegebuure 2003) and the evidence suggests that this used to be the situation also in PIE. While Hitt. *kaš* ‘this’ and *apaš* ‘that’ have always been recognized as such, the paradigm of *aši*, due to its irregularity and chronostratic differences, has only recently been analyzed satisfactorily.

According to Goedegebuure, Hitt. *aši* occupies the same slot as Eng. *yon* in the pronominal deixis and it indicates entities that are distant both to the speaker and to the addressed. This is not only discernable through an attentive study of the written material, but its correct understanding is also achievable thanks to its PIE reconstruction. The cause for this additional deictic reading unique to Hittite is probably to ascribe to the final **-i*.

This pronoun set is attested only in Hittite and not in the other proto-Anatolian languages.

Hittite			
		Common	Neuter
SG.	NOM.	<i>aši</i> (<i>aši</i> , <i>uniš</i> , <i>iniš</i>)	<i>ini</i> (<i>eni</i>)
	ACC.	<i>uni</i> (<i>unin</i>)	<i>ini</i> (<i>eni</i>)
	GEN.	<i>ēl</i> (<i>unijaš</i>)	
	ABL.	<i>edez</i> (<i>edaz</i>)	
	DAT. LOC	<i>edi</i> (<i>edani</i>)	
	INSTR.	-	
PL.	NOM.	<i>e</i>	-
	ACC.	<i>uniuš</i> (<i>eniuš</i>)	
	GEN.	-	
	DAT. LOC.	<i>edaš</i>	

NOM. SG. C. Hitt. *aši*

Hitt. *aši* appears to have undergone a total make-over from the original IE. For once, Hitt. /a/ must be traced back to **/o/*. The reason why Hittite showcases o-grade, contrary to all the other IE language, is unclear. Furthermore, the Hittite nominative has been enlarged by adding the

nominative marker *-s*, and, finally, the pronoun has been reinforced by postponing the *hic et nunc* particle **-i*, probably enforcing a deictic reading. In sum, PIE **h₁e* >> PAn.. **h₁os* >> Hitt. *aši*

ACC. SG. C. Hitt. *uni*

Similarly, to Hitt. *aši*, *uni* is the result of the change of the ablaut grade and the addition of **-i* at the end of the word. However, PIE **o* surfaces here as /u/ due to its proximity with a nasal in a monosyllable. This is a regular yet rare phonological development.

GEN. SG. C. Hitt. *ēl*

The /l/ present in the genitive cases in the Hittite pronouns has a mysterious origin and is not shared by any other IE languages. However, the vowel *ē*⁴ may be traced back to PIE **h₁e-*, which contains the same vowel of the genitive case in the other IE languages.

ABL. SG. C. Hitt. *edez*, *edaz*

The Hittite form *edez* must represent a renewed form of the original **/ēd/*. The form is not attested, but its transformation is inferable by looking at the ablative singular of the other pronouns. There, one finds that the older variants *kēt* and *apet* are being replaced by *kedaz* and *apedaz*. The ending *-e/az* is the standard ablative ending in the nominal paradigms.

DAT.-LOC. SG. C. Hitt. *edi*, *edani*

According to Kloekhorst (2012), the suffix of this pronominal can be transposed in quasi-IE as **-d^hi* or, alternatively, its enlarged form *d^hnh₁i*. Its origin is unclear, but it is a shared PAn. pronominal suffix used to form the dative and the locative.

NOM. PL. C. Hitt. *e*

The Hittite nominative plural *e* continues without any modification the reconstruction of PIE **h₁oi*.

⁴ Monosyllabic lengthening has been proposed for Hittite by Kloekhorst (2012b, 251.)

ACC. PL. C. Hitt. *uniuš*

By comparing this pronoun with accusative forms of the other pronouns such as *ku-u-us* and *a-pu-u-us*, it is possible to determine that Hitt. *uniuš* has been built by adding *-uš* to the accusative singular *uni*. The origin of this ending *-us* is not clear.

DAT./LOC. PL. C. Hitt. *edaš*

Comparable to the dative/locative plural of the other pronouns, Hitt. *edaš* can be analyzed as **h₁e-d^h-os*.

NOM./ACC. SG. N. Hitt. *ini*

The Hittite neuter singular pronoun *ini* does not share any trait with the case forms of the other IE languages. While in Latin and other languages the neuter singular is a reflex of PIE **h₁id*, cfr. Lat. *id*, Hitt. *ini* must be traced back to PIE **h₁im + i*, which in the other languages is the reconstruction for the accusative masculine singular. However, it is safe to assume that Hitt. *ini* has not always been the neuter singular pronoun, because the other pronouns such as *apād* showcase the original IE ending **d* and the original ablaut-grade.

2.3.3.2 Enclitic pronoun

Hittite			
		Common	Neuter
SG.	NOM.	= <i>aš</i>	= <i>at</i>
	ACC.	= <i>an</i>	= <i>at</i>
	DAT. LOC	= <i>šše</i> (=šši)	
	INSTR.		
PL.	NOM.	= <i>e</i>	= <i>e</i>
	ACC.	= <i>uš</i>	= <i>e</i>
	DAT.LOC.	= <i>šmaš</i>	

The decision whether to include the anaphoric enclitic pronouns in this category depends on one's recognition of the existence of **h₁* as the first phoneme in the reconstruction of the PIE anaphoric pronoun. For example, Dunkel who does not reconstruct **h₁* for **h₁e* > Hitt. *aši*, treats =*aš* as

almost identical to *aši*. In his view (2013, 185), **ós* is the source for both pronouns, the only difference being the addition of **i* and the fact that while one is enclitic the other is tonic. According to Kloekhorst (2006, 2012), instead, the difference between the enclitic pronouns and the tonic ones is that while the tonic pronouns derive from the PIE pronoun **h₁e*, the anaphoric pronouns are an inner-Anatolian innovation and derive from the nominal suffix and ending **=o+s*. I agree with Kloekhorst and it is my opinion that they do not belong here. The clearest proof in favour of Kloekhorst's interpretation is the accusative common and neuter singular, that are just cliticization of the o-stem suffix and ending, while the morphology of the real anaphoric pronoun Hitt. *uni*, *ini* is very different.

2.3.3.3 Non-paradigmatic forms

Hitt. =a ‘but, and’

The non-geminating enclitic =a meaning ‘but’ is hard to etymologize, given its limited phonetic substance. According to Dunkel (2014, 212), =a is the Hittite reflex of PIE **oh₁*, the word-emphatic particle also presents in Lat. *egō* ‘I’, and Hitt. *uga* ‘I myself’ (also transcribable as *ug=a*). Instead, Kloekhorst, also given the fact that the other clause connectors =*kka*, and =*kku* have originated from pronouns, is of the opinion that also =a must belong to the demonstratives, and specifically to the set comprising *aši*, *uni*, *ini*. This means that it is therefore ultimately a reflex of PIE **h₁e*. Therefore =a and its allomorph =ma cannot be traced back to one single form and that it must mean that they evolved from two different sources and that they became allomorphs of each other only after their meanings had collapsed together.

Hitt. *anniš* ‘the aforementioned’, Luw. *anna/i-*

The etymology of this pronoun is somewhat controversial. Melchert (1994, 74) connects Hitt. *annis* with *anišiḡat* ‘today’, but, as Kloekhorst (2008, 219) remarks, their meanings are in

opposition to each other. From what I could gather, it seems to me that the first element Hitt. *anišiyat* represents the original inherited Hittite evolution from PIE **h₁ém+i-*, while *annis* is of Luwian origin. This interpretation is supported by three facts: first, the i-inflection is a typical Luwian trait, it only appears in later texts and the gemination of /n/ can be viewed as the effect of Čop’s law. However, since this word is only attested once, it is also possible, as suggested by Kloekhorst, that this form does not represent a *hapax*, but rather a “ghost word”, whose *Sprachwirklichkeit* may be doubted.

Hitt. *apāš*, HLuw. *á-pa-sa*, CLuw. *apāš*, Lyc. *ebe* ‘that one’

Hitt. *apāš* and its cognates are deictic pronouns. The reason why I did not reserve in this thesis a separate table showing its paradigm, is due to its regularity, and because the element on which I am focused, **h₁e-*, does not inflect within the paradigm.

The pronoun is built combining **h₁o-* with **b^ho-* and it is declined following the other deictic pronouns, as seen in NOM. SG. C. *apās*, ACC. SG. C. *apūn*, etc. The element **b^he* is perhaps the same as the **-b^h-* that is used as the dative and ablative suffix in many IE languages, perhaps indicating directionality, and it is here combined with deictic **h₁e-*, indicating perhaps something more distant but still in sight. This construction is only present in PAn but had become a productive base form from which Hitt. *apadda* ‘that way’ *apēniššan* ‘so’ were formed.

Hitt. *ašiwant-*, CLuw. *āššiwanti-* ‘poor’

These two adjectives can be etymologized as reflexes of PAn. **ǵósiwant-*, a new-formation based on PAn. **ǵósi* ‘that’⁵. This shift in meaning is not as extravagant as one could imagine. It is typical

⁵ /ǵ/, the glottal stop, is the continuation of PIE **h₁*

of distal deictic to indicate what is morally considered evil or unpleasant. Therefore, Melchert's interpretation (1994, 367) is in my opinion solid.

Hitt. *āšma* 'lo! behold!'

Hitt. *āšma* must be studied together with Hitt. *kāšma*. Given the fact that both words may be interpreted as the combination of **h₁ós* 'that' or **kós* 'this' with *=(m)a* 'but'⁶, then it appears reasonable to assume that Hitt. *āšma* meant more 'look there!', while Hitt. *kāšma* could mean 'look here!'. This would be in line with the general meaning of the two pronouns.

Hitt. *imma* 'truly', CLuw. *imma*, HLuw. *i-ma*

Hitt. *imma* represents the univerbation of **h₁im* plus **moh₁*. Not only, Hitt. *imma* may be placed in a set of adverbs comprising Hitt. *kāšma* 'lo!', *āšma* 'look there', and Hitt. *namma* 'then', built by adding the assertive/adversative particle **moh₁* to the various pronominal stems. This form might be a cognate of Lat. *immō*.

Final considerations

It is my conviction that Hitt. *=a*, *āšma*, *apāš* and *imma* do derive from PIE **h₁e*. Regarding Hitt. *=a*, it is in fact not uncommon for pronouns to be reduced syntactically down to a conjunction. Moreover, there is a good chance that Hitt. *ašiwant* continues in its first element the IE anaphoric pronoun. On the other hand, it is difficult to determine whether Hitt. *annis* does indeed continue PIE **h₁e*, given the reasons explained above.

⁶ The variation *kāša* is also attested, meaning that the combination was originally also possible with *=a*. (Kloekhorst 2006, 263).

Germanic languages

2.3.3.4 Paradigmatic forms

Gothic				
		Masculine	Feminine	Neuter
SG.	NOM.	<i>is</i>	<i>si</i>	<i>ita</i>
	ACC.	<i>ina</i>	<i>ija</i>	<i>ita</i>
	GEN.	<i>is</i>	<i>izos</i>	<i>is</i>
	DAT.	<i>imma</i>	<i>izai</i>	<i>imma</i>
PL.	NOM.	<i>eis</i>	<i>ijos</i>	<i>ija</i>
	ACC.	<i>ins</i>	<i>ijos</i>	<i>ija</i>
	GEN.	<i>ize</i>	<i>izo</i>	<i>ize</i>
	DAT.	<i>im</i>	<i>im</i>	<i>im</i>

NOM. SG. M. Goth. *is*, OHG *er*, ON *er* ‘which’

Traditionally, PGm. NOM. SG. M. is reconstructed as **iz*. Final **/z/* is due to OHG *er* and Goth. *is*. As it is well known, PGm. **z* > Goth. *s*, OHG *r*. However, the way PGm. **z* came to be from PIE **s*, certainly due to Verner’s law, is murky. As per Verner’s law, the only way for PIE **s* to become PGm. **z* is for the preceding vowel to be unaccented, and being **iz* monosyllabic, this results difficult to explain. There can be two ways to solve this inconsistency: first, one can suppose that the word was not monosyllabic at all and that instead the original PIE form had been enlarged by a now invisible element, that had to bear the stress and had to consequently be dropped as all final vowels. A possible reconstruction would then be: PIE **h₁i-s + ũ*. A second possibility is to suppose that the pronoun was clitic and that the application of Verner’s law had been caused by any following word bearing the stress. A second problem is the nature of the vowel. The pieces of evidence from the other Germanic languages and its comparison with Plt. lead towards the PGm. reconstruction **es*. In fact, while PGm. **e* is reflected in OHG as *e*, in Gothic it is raised to *i*. Thanks to this, it is not even necessary to

postulate a possible paradigmatic leveling from Goth. *ita* >> *is*, since PGm. **es* would regularly yield Goth. *is*.

ON *er*, the uninflected relative pronoun, is the only remaining form from the proto-Germanic paradigm in Old Norse.

ACC. SG. M. Goth. *ina*, OHG *inan*

From Goth. *ina* and OHG *inan* it is easy to reconstruct PGm. **in(ō)*⁷. However, it is more difficult to explain the presence of the final **a(n)* in the proto-Germanic form, when compared with the other ACC. SG. M. form from other IE languages, like Lat. *im*.

Dunkel suggests that the original pre-PGm. **im* was enlarged by the element **oh₁*, a word-emphatic particle according to Dunkle (2013, 208) and this combination yielded PGm. **im* + **a* > **ina*. In OHG, **ina* was re-accusativized by adding the accusative suffix -n, forming *inan*.

I agree that this interpretation is possible since the element **oh₁* is no stranger to pronouns: it is visible in PIE **h₁eg-oh₁* ‘I alone’ (> Lat. *egō*), or even in the same paradigm of PGm. **es*, like in the case of Goth. *ita* < PIE **h₁id + oh₁*.

GEN. SG. M. Goth. *is*, OHG *es*, *is*

Even though the GEN. SG. M. has been replaced in OHG by the REFL. GEN. S. M. *sin*, the original genitive is still visible in the neuter. Comparing the Eastern and the Western Germanic forms, it would be reasonable to assume that the origin was PGm. **is*. In fact, according to Braune (2004, 343-345) OHG *is* is the common form while *es* the archaic one. Not only then this is backed by the philological study on the attested texts, but it is also the most reasonable chronology from an IE point of view. What I suggest is then that Goth. *is*, OHG *es*, *is* < PGm.

⁷ Long nasal final **ō* is assured by OE -e, the accusative ending present in OE *pine*.

**es* < PIE **h₁é-so*. Finally, it is interesting to note that this form did not undergo Verner's law contrary to what happened to the NOM. SG. M. form, thanks to the presence of the stress before /s/.

DAT. SG. M. Goth. *imma*, OHG *imu*.

Given the Gothic and the Old High German forms, it is natural to reconstruct a stem PGm. **imm-*. It appears however that the endings of the pronoun do not match between East and West Germanic. What surfaces in PGm. as geminated */m/ is the product of regular proto-Germanic assimilation of /sm/ from PIE *-*sm-*.

NOM. PL. M. PGm. Goth. *eis*

Gothic *eis*, being the only attested form stemming from the original PGm. NOM. PL. M., allows the reconstruction of PGm. **īz*. It is important to note that Gothic <ei> indicates /ī/. The PGm. pronoun may go back to PIE **h₁éj-es*, just like Lat. *eis*.

ACC. PL. M. PGm. Goth. *ins*

Gothic *ins*, which, again, is the only language that showcases a descendant of the PGm. pronoun, suggests that the accusative plural has been based on the accusative singular and pluralized with the addition of /s/.

GEN. PL. M. Goth. *ize*, OHG *iro*

The presence of final /m/, a specific trait of GEN. PL. (see Lat. *eōrum*), blocked the apocope of the word-final vowel, which in turn allowed */s/ to become voiced according to Verner's law to PGm. **z* > WPGm. **r*, meaning that in PIE (and in PGM) the stress fell on the suffix. Thus, PGm. GEN. PL. M. can be reconstructed as **ezô*.

DAT. PL. M. Goth. *im*, OHG *im*

Not only Gothic, but the entirety of the proto-Germanic family utilizes PGm. **imaz* for all three genders in dative plural. The ending **-maz* is also the nominal dative plural ending.

NOM. SG. F. PGm. Goth. *si*, OHG *sie*

Overall, the PGm. feminine pronouns belonging to the same paradigm as **is* ‘he’ can be divided into three groups depending on their stem: the nominative singular, which stands on its own, the other direct cases based on PIE **h₁ih₂-eh₂-*, and the oblique cases on **h₁es_i-eh₂-*.

Already in PGm. times, an initial /s/ was added to what ought to be the original pre-PGm. NOM. SG. F. **ī*. This /s/ was taken from the determiner **sa* ‘the, that’. According to Lehmann (2004, 56), OHG *sie* should be equated with Ved. *syás* ‘that’ but I don’t find this connection appealing. Ved. *syá-*, which is only recorded as *syás* in the nominative, appears to be a combination of the /s/, again taken from the determiner, and the relative pronoun.

ACC. SG. F. Goth. *ija*

Even though Gothic NOM. SG. F. changed under the influence of the paradigm of **sa*, the accusative singular did not undergo the same change. This is true only for Gothic. The original PGm. ACC. SG. F. is reconstructed as **ijō* by Kroonen (2013, 268), which reveals the PIE formation **h₁ih₂-eh₂-m*, which is a secondary and enlarged formation.

GEN. SG. F. Goth. *izos*, OHG *ira*, *iro*

While the initial /i/ in Gothic can be traced back to PIE /e/, the ending *-zos*, common to all Gothic demonstrative, should be reconstructed as **-zōs*, giving the form PGm. **ezōs*. From a PIE point of view, this form is analyzed by Dunkel as built with **h₁es-*, the PIE genitive, **-eh₂-*, the feminine/neuter suffix, and the genitive ending **-s*. Dunkel’s solution is remarkable and allows to confront Goth. *izos* with Ved. *asyás* and Av. *aṇhā̃* ‘hers’. However, the PGm. and

PIIr. forms are not etymologically connected; they only exemplify the same morphological process by using a different motion suffix.

DAT. SG. F. PGm. Goth. *izai*, OHG *iru*

The DAT. SG. F., together with the GEN. SG. F., is based in PGm. on **ezō-* plus the dative ending **-ei*.

NOM. PL. F. Goth. *ijos*

The Gothic form is based, like the ACC. SG. F., on **h₁ih₂-eh₂-* to which was added the plural marker **-s*. Such a form is only attested in Gothic but appears to be old.

ACC. PL. F. Goth. *ijos*

Even though the ACC. PL. F. form surfaces as identical to the NOM. PL. F., their reconstructions differ about the ending. The ending of the accusative plural should be reconstructed as **-ns*, the typical accusative plural ending.

GEN. PL. F. Goth. *izo*, OHG *iru*

The genitive plural in PGm. is also built according to the subdivision discussed earlier, adding the genitive plural ending **-m* to the oblique stem.

NOM./ACC. SG. N. Goth. *ita*, OHG *iz*

Gothic NOM./ACC SG. N. differs from all the other Germanic languages due to the presence therein of /a/ at the end of the word. This /a/ is believed to be (Dunkel 2013, 215) a reflex of a PIE emphatic particle **oh₂*. Except for Gothic, the PGm. direct case for the singular neuter is **it*, which is in line with the other IE languages.

NOM./ACC. PL. N. Goth. *ija*

The Gothic neuter plural nominative/accusative descends without modification from the PGm. one which in turn is formed by adding the collective/neuter plural marker **-eh₂* to **h₁ih₂-*, the original PIE neuter plural. This is an instance of re-pluralization.

2.3.3.5 Non-paradigmatic forms

ON *i dag* ‘today’

ON *i dag* ‘today’ appears to be only non-paradigmatic form still existing in PGm. that was built on **h₁e-*. Not only that, but in this adverb the deictic reading is still present, indicating that up to the PGm. times **h₁i-* could still indicate proximal deixis also beyond the main pronominal set.

2.3.4 Balto-Slavic

The third person anaphoric pronoun in Balto-Slavic must have been originated from the syncretism of PIE **h₁e* and **h₁io-* (Derksen 2008, 2015, Kortlandt 1983). One can claim this with a certain degree of safety thanks to these two considerations:

- If the OCS **i* Lith. *jìs* derived from PIE **h₁e*, where does the initial glide come from?⁸
- If they derived from PIE **h₁io-*, why do they not follow the thematic conjugation? Indeed, one would expect Lith. ***jàs*.

2.3.4.1 Baltic

2.3.4.1.1 Paradigmatic forms

Lithuanian			
Anaphoric pronoun			
		Masculine	Feminine
SG.	NOM.	<i>jìs</i>	<i>jì</i>
	ACC.	<i>jĩ</i>	<i>jā</i>
	GEN.	<i>jõ</i>	<i>jõs</i>
	DAT.	<i>jám</i>	<i>jái</i>
	INSTR.	<i>juõ</i>	<i>jà</i>
	LOC.	<i>jamè</i>	<i>jojè</i>
PL.	NOM.	<i>jĩẽ</i>	<i>jõs</i>
	ACC.	<i>juõs</i>	<i>jàs</i>
	GEN.	<i>jũ</i>	<i>jũ</i>
	DAT.	<i>jíems</i>	<i>jóms</i>
	INSTR.	<i>jaĩs</i>	<i>jomìs</i>
	LOC.	<i>juosè</i>	<i>josè</i>

Pronominal suffix			
		Masculine	Feminine
SG.	NOM.	<i>-is</i>	<i>-jì</i>
	GEN.	<i>-jo</i>	<i>-ios</i>
	DAT.	<i>-jam</i>	<i>-jai</i>

⁸ It is possible to imagine that the initial glide is due to the avoidance of hiatus that was inserted between two words, the first ending in vowel and the second one, in this case being the pronoun, starting with a vowel. This process is, however, not regular.

Pronominal suffix		
PL.	ACC.	-jǫ
	INSTR.	-ju
	LOC.	-jame
	NOM.	-ji
	GEN.	-ju
	DAT.	-iems
	ACC.	-ius
	INSTR.	-iais
	LOC.	-iouse

2.3.4.2 Slavic

2.3.4.2.1 Paradigmatic forms

It is important to note that the nominative forms of the singular of all three genders are not attested. Synchronically, *onŭ*, *ona*, and *ono* are used (2008,372). However, given also the comparison with its Baltic cognates, and the existence of forms that preserve NOM. SG. M. **i* as in OCS *iže*, *jaže*, *eže* ‘he/she/it, who’, it is safe to assume that they were part, up until to a certain point in time, of the PSl. declension.

Old Church Slavonic				
Anaphoric pronoun				
		Masculine	Feminine	Neuter
SG.	NOM.	<i>*i</i>	<i>*ja</i>	<i>*je (<*jo)</i>
	ACC.	<i>i</i>	<i>jǫ</i>	<i>je</i>
	GEN.	<i>jego (ego)</i>	<i>jeje (eę)</i>	
	LOC.	<i>jemŭ</i>	<i>jei</i>	
	DAT.	<i>jemu</i>	<i>jei</i>	
	INSTR.	<i>imŭ</i>	<i>jejǫ</i>	
PL.	NOM.	<i>*i</i>	<i>ję</i>	<i>ja</i>
	ACC.	<i>ję</i>	<i>ję</i>	<i>ja</i>
	GEN.	<i>ixŭ</i>	<i>ixŭ</i>	
	LOC.	<i>ixŭ</i>	<i>ixŭ</i>	
	DAT.	<i>imŭ</i>	<i>imŭ</i>	
	INSTR.	<i>imi</i>	<i>imi</i>	

Pronominal suffix			
		Masculine	Feminine
SG.	NOM.	-i	-ja
	GEN.	-jego	-jeje
	DAT.	-jemu	-jei
	ACC.	-i	-jə
	INSTR.	-imĩ	-jej
	LOC.	-jemĩ	-jeiq
PL.	NOM.	-i	-jə
	GEN.	-ixũ	-ixũ
	DAT.	-imũ	-imũ
	ACC.	-jə	-jə
	INSTR.	-imi	-imi
	LOC.	-ixũ	-ixũ

NOM. SG. M. OCS *i, Lith. jìs

The PBSl. reconstruction from OCS **i* and Lith. *jìs* must be **jis*, clearly meaning that the syncretism between PIE **h₁e* and **h₁iō-* already took place in PBSl. It is important to point out that PBSl. **jis* is reflected in OCS as **i* regularly.

ACC. SG. M. OCS i, Lith. jĩ

The Slavic form *i* represents a relict since normally the accusative case is not used in Slavic and the genitive is used in its place.

NOM. SG. F. OCS *ja, Lith. jì

Although **ja* is not attested by itself, it can be found in the relative OCS *jaže* ‘she, who’. The difference between the OCS and the Lith. pronouns is due to the two different endings. In OCS, the pronoun is in line with the other feminine pronouns, see OCS *ona*, while the Lithuanian one is a faithful continuation of PIE **h₁ih₂*, except for the initial /j/ which is shared by the whole paradigm. The remaining forms will not be analyzed individually, since they are overall regular, later pronominal formations built by adding the language-specific pronominal suffixes on top of the stem.

Pronominal forms

Both in Baltic and Slavic the adjectives may be modified by a so-called pronominal suffix, or determiner, whose meaning is similar to that of an article.

Examples: OCS *novoje, novajego* ‘the new, of the new’ or Lith. *geràsis, gėrojo* ‘the old, of the old’. The pronominal suffixes and the pronouns are almost identical, and it is safe to assume the suffixes derive from the pronouns. This feature cannot be traced back to PIE.

2.3.4.3 Non-paradigmatic forms

Lith. *beĩ* ‘and’

According to Dunkel, this conjunction was formed by combining PIE **b^he* with **h₁id*. However, its only cognate Av. *bōit* ‘really’ seems to have had a rather different meaning.

Ru. *etot, eta, eto* ‘this one’

This peculiar pronoun is formed by two elements, the first one being *e* from **h₁e* and the second one being *tot*, which is itself a reduplicated pronoun from **tūtū* < **to-to*.

OCS *jedinŭ* ‘one’

This Slavic form represents a mystery. Its morphology appears similar enough to Lith. *vienas* that it would seem reasonable to etymologize them together to a shared PBSl. word. However, what would then be an intrusive /d/ is left unexplained. Derksen’s (2008, 139) suggestion that the word may contain the reflex of NOM./ACC. SG. N. **h₁ed* conflicts with Winter’s law. The best solution is therefore to assume that this form has been formed by prefixing PSl. **inŭ* with an unidentifiable morpheme PIE **h₁ed^h-*.

This form presents a variant OCS *inu* without the initial morpheme.

OCS *jedŭva* ‘hardly’

The PSl. **ed(ǔ)va* form can be analyzed as the combination of **ed* and **va*. The second element is cognate of Lith. *võs* ‘hardly’. Dunkel’s interpretation is to etymologize **ed* as the reflex of **h₁ed* ‘it’, while Derksen points that the dental must have been **d^h* due to the accentuation and the length of the vowel. This particle **ed^h* may well be the same from OCS *jedinŭ* ‘one’ below.

OCS *jese, ese* ‘behold!’

According to Meillet (1934, 82), this Slavic interjection is formed by these two PIE elements: the first one must be traced back to **h₁e*, while the second one must be etymologized as **k^ʰe*, the proximal deictic morpheme. This etymology is not unanimous, see Derksen (2008, 144) who reconstructs PIE **h₁e-se*, leaving out however the precise nature of this proposed morpheme **se*. Throughout the Slavic linguistic landscape, the cognate words of OCS *ese* have a rather wide range of meanings, as in Ukr. *esé* (dial.) ‘here!’, Sln. NOM. SG. M. *esej* ‘that one’, Bulg. *esé* ‘there!’, suggesting that the original meaning could have been more linked to the element **h₁e*, which, judging by the overwhelmingly large number of attestations so far, represented an alternative to both distal and proximal deixes.

OCS *jeterŭ* ‘anyone’

The morphological shape of this pronoun displays the old PIE combination of **h₁e* followed by **-tero-*, the contrastive suffix. The Slavic word however shows that a shift in meaning has taken place, from ‘other’ to ‘anyone’.

OCS *i* ‘and’

Although Dunkel’s elaborate reconstruction PIE **h₂i-h₂i* may be convincing, given the fact that the particle **h₂o*, possibly related to Dunkel’s PIE **h₂i*, had a conjunctive reading, see Luw. *=(h)ha*, Hitt. *=(i)a* ‘and’. However, as pointed out by Derksel (2008, 207), OCS *i* could also be the

semantic evolution of PIE **h₁ei*, for it is a typologically common evolution for an anaphoric pronoun to be bleached into a simple conjunction.

OCS *ibo* ‘therefore’

The etymologization of OCS *i* < PIE **h₁ei* appears even more convincing considering the word OCS *ibo* ‘therefore’. This conjunction is formed by *i* and *bo* ‘because’ which reflects PIE **b^ho*. As seen before, the combination of **h₁ei* and **b^ho* is not alien to PIE.

Lith. *inas* ‘real’, OCS *inŭ* ‘another’

From PBSl. **ino-*, itself from PIE **h₁oino-* ‘one’. Due to its meaning and the fact that this form only existed in PBSl, I am not sure whether it can be reconstructed for IE.

Lith. *it* ‘very’

Although one might suppose that Lith. *it* could be a reflex of PIE **h₁id*, Dunkel suggests Lith. *it* < **h₁ith₂*. Instead, Pronk (personal communication) considers Lith. *it* a reflex from PIE **iti*, and thus probably not a continuation of PIE **h₁id*. If one accepts that Lith. *it* is indeed a continuation of PIE **h₁id*, then this form can be compared to its Latin cognate *ita*.

Lith. *õ*, OCS *a* ‘but’

The reconstruction is uncertain, but Lith. *õ*, OCS *a* ‘but’, PBSl. **ã* may relate to the ablative case of **h₁e*, namely **h₁õd*.

OCS *onŭ*, *ona*, *ono* ‘he, she, it’, Lith. *anàs* ‘that’

The mechanical PBSl. reconstruction from OCS *onŭ* and Lith. *anàs* would give PBSl. **anos*. Beyond that, there is no consensus around the PIE reconstruction of this specific pronoun. The best solution may be **h₂eno-* and therefore this pronoun is not related to PIE **h₁e*.

Lith. *vienas* ‘one’

At first sight, these two forms, the Slavic one and the Baltic one, may not look too similar to each other, although having the same meaning. Thanks to the aid of OPr. *ainan* it is possible to conclude that the Proto-Baltic form is likely to have been **(w)é/óino-*. The origin of initial /w/ in Proto-Baltic is controversial. According to Dunkel (2014, 590) it goes back to PIE **u̯é* ‘away, without’, and that its PIE transposition ought to be **u̯é-(e)ino-* ‘alone, isolated’. Initial /w/ could also be a sporadic hiatus-avoiding prosthetic semivowel that stuck firmly in Latvian and Lithuanian. This solution is inelegant, but it avoids the creation of a new proto-form.

Final considerations

In Balto-Slavic, given the dialect-specific syncretism of PIE **h₁e* and **h₁io-*, it is not easy to rate the grade of certainty that the words listed above do indeed derive from PIE **h₁e*.

However, forms such as OCS *onŭ*, *jeterŭ*, *ibo*. Lith. *vienas*, Ru. *etot*, that have cognate outside the Balto-Slavic group, can safely be derived from PIE **h₁e*. Conversely, Lith. *ð*, OCS *i*, do not have yet a convincing etymology.

2.3.5 Celtic

2.3.5.1 Anaphoric pronoun

Tonic pronouns are not that well preserved in Celtic due to the syntactic changes the language family has undergone. The nominative case is well attested, while the accusative has almost disappeared as a pronoun case. This is because object agreement has shifted from the pronoun to the verb itself.

NOM. SG. M. OIr. *é*

The consensus (Schrijver 1997, Dunkel 2013, Matasovic 2009, Casteilleiro 2019) reconstructs OIr. *é* from PIE **h₁ei*. It is impossible to determine whether PCel. had inherited a NOM. SG. M. **h₁ei* or rather the latest nominative was taken from the oblique stem. This consideration is important considering the isogloss in regard of the nominative singular masculine (see 2.4.3).

GEN. SG. M. OIr. *a^L*, *aí*

In virtue of the fact that OIr. *a^L* ‘his, its’ triggers the lenition of the following consonant, OIr. *a^L* < PCel. **ehio* < PIE **h₁esio* may be the correct reconstruction.

NOM. SG. F. OIr. *sí*, Gaul. *eia*

It appears that a split has occurred between insular and continental Celtic regarding the NOM. SG. F.: Gaul. *eia* traces back to PIE **h₁ei-h₂*. This form, presenting laryngeal-2 as the feminine nominative ending, nonetheless showcases the oblique stem **h₁ei* instead of the original **h₁i-* as bases. OIr. *sí* derives instead from the suppletive feminine stem PIE **si-*, itself a syncretism of **seh₂* and **h₁ih₂*.

NOM. SG. N. OIr. *(h)ed*

Although it is fairly certain that OIr. *ed* continues PIE **h₁id*, its precise reconstruction is nevertheless more complicated than it may seem. This is because final **-d#* would have not survived

in PCelt. and it therefore must have been followed by another syllable. Schrijver (1997) instead suggests that *ed* could derive from PIE **h₁ed-h₁ed*, a reduplicated pronoun.

OIr. INFIXED ACC. SG. -*m*-

The way the accusative has survived as a pronominal case is as an inflected clitic pronoun. In Old Irish this is best observable in some old, petrified verbal formation like *da-mbeir* ‘he brings him’, where the infix *-m-* continues **h₁im*.

OIr. -*ib* in *indib* ‘in them’

This pronominal suffix is attached to prepositions, but it derives from the pronoun **h₁eib^ho/i*. This form originally represented the ablative.

2.3.6 Armenian

2.3.6.1 Non-paradigmatic forms

OArm. *ays* ‘this’ *ayd* ‘that near you’, *ayn* ‘that’

Although the original paradigm of **h₁e* is lost in Armenian, this element made its way into this set of deictic pronouns. *Ayn*, *ays*, and *ayd* are fully regular and the deictic element that is the focus of this thesis does not change throughout the paradigm and they will therefore be analyzed as a whole.

According to Martirosyan (2010, 562) the element <oy> must be derived from **h₁oi-*, the o-grade of **h₁ei-*, something rare compared to the other IE languages. The second element, which gives the three pronouns their individual meaning, derive from PIE **k₁e*, **to-*, and **no*, respectively.

Dunkel (2014, 194) instead proposes a different etymologization. OArm. *ay-* does not come from a single PIE proto-form but a combination of **h₁e* plus **h₂i*, an emphatic particle. Another way to dissect OArm. *ay-* might also be, again according to Dunkel, **h₁e-h₂-i*, morphologically representing the locative plural. I find these last two explanations unnecessarily complicated.

2.3.7 Tocharian

Tocharian, of all the IE languages, is the only branch in which no reflex of the anaphoric pronoun survived to the time the language was written down. Not only, but I also was not able to find any trace of the anaphoric pronoun in any Tocharian word, be it adverb or adjective. This should not disconcert anyone, or possibly lead to think that the anaphoric pronoun must have been a more recent innovation. On the contrary, given the copious presence of **h₁e*-derived pronouns and adjectives in Anatolian, it is patent that Tocharian lost the inherited anaphoric pronoun paradigm.

2.3.8 Albanian

2.3.8.1 Anaphoric pronoun

Albanian			
		Masculine	Feminine
SG.	NOM.	<i>ai</i>	<i>ajo</i>
	ACC.	<i>atë</i>	<i>atë, atâ</i>
	GEN.-DAT.	<i>ati</i>	<i>asaj</i>
	ABL.	<i>ati</i>	<i>aso, aco</i>
PL.	NOM.	<i>ata</i>	<i>ato</i>
	ACC.	<i>ata</i>	<i>ato</i>
	GEN.-DAT.	<i>atyre, atyne</i>	<i>atyre, atyne</i>
	ABL.	<i>asish, acish</i>	<i>asosh, acosh</i>

NOM. SG. M. *ai, ay*

Alb. *ay, ai* ‘he’ knows three very different etymologies. The first one, advanced by Orel (2000, 243) links it with the PIE pronoun **h₁e*; specifically, the pronoun is a combination of *a-* plus *-i*, that transposed in PIE terms would then be **h₁e-h₁ei*; the first element became then the base for all the other forms of this paradigm. Dunkel instead (2013, 101) traces it back to PIE **ou* ‘away, distant’ plus **so-* ‘he’. I do not find any reason to move away from what already in PIE used to be an anaphoric pronoun since intervocalic **s* yields /h/ in Albanian. Alternatively, Demiraj (1993, 140), following Pedersen, deemed the connection between the Albanian pronoun and PIE **h₁e* as erroneous and instead favored the etymology of the first element Alb. *a-* as the reflex of PIE **so-*.

NOM. SG. F. *ajo*

Orel interprets the second element, *-jo*, visible in *ajo* ‘she’, as the continuation of PIE **h₁ieh₂*, the feminine of PIE **h₁ie-*. Although I believe this to be possible, I think a better etymology for *ajo* would be **h₁ej-e_h₂*, being it, therefore, an exact cognate of Lat. *ea*.

2.3.10.2 Non-paradigmatic forms

Alb. *tjetër*, PL. *tjerë* ‘other/s’

This pronoun clearly shows the same archaic PIE morphology of OCS *eterŭ* ‘someone’, namely PIE **h₁e-tero-*. The alternation between /t/ and /r/ is due to the preservation of the reflexes of SG. **h₁é-tero-* VS **h₁e-téro-*, while the initial /t/ in the singular form is due to the univerbation of the article *tě*. (Orel 1998, 457).

Alb. *a* ‘whether, or’

There is little consensus around the etymology of this conjunction (Orel 1998, 1). Orel connects Alb. *a* to the PIE pronominal stem **h₁e-*. The problem with this reconstruction is the tenuous lexical connection between the proto-meaning ‘this, he’ and ‘or’, however, the *a-* is a productive particle to form deictic words and the etymology is thanks to this more probable. Another solution, Demiraj (1993, 70) is that Alb. *a* is the reflex of PIE **h₂éu* ‘but, or’.

Alb. *andaj* ‘therefore’

The aforementioned element *a-* is the base for this conjunction. The second element *ndaj*, from *ndë* ‘in’ is a cognate of Gr. *ἐνδον* ‘within’. It is thus possible that the original meaning ‘therein’ might have shifted to a causal conjunction.

Alb. *atje* ‘here’

This adverb is composed by two elements, the first, *a-*, has been established to derive from **h₁e-*, while the second element, *-tje*, is of uncertain etymology (Orel 1998, 4).

Alb. *aty* ‘there’

Since the element *ty* is the Alb. reflex of PIE **to-*, according to both Orel and to Dunkel, it is possible that we are dealing here with an original PIE pronoun of the type **h₁e-to-* whose meaning has shifted in Albanian to a locative adverb.

Final considerations

Whether any of these forms is a derivation of PIE **h₁e* depends on the interpretation of the first element Alb. *a-* present in all the forms of the pronoun and the various non-paradigmatic forms. If one accepts Orel's interpretation, then the PIE pronoun **h₁e* is well preserved in Albanian, although not with its original paradigm. Otherwise, if one prefers Demiraj's view, then also Albanian lost all traces of the PIE pronoun.

2.4 Reconstruction of the PIE paradigm

2.4.1 The case for initial laryngeal-1.

As stated above, through the various years of existence of Indo-European linguistics this elusive anaphoric pronoun has not always been reconstructed as **h₁e*.

There are two main candidates: **e_i*, and **i_s*. What these two possible reconstructions share is the lack of **h₁*. This conflict arises since initial laryngeal-1 is difficult to detect. Up to Kloekhorst's 2004 work on the reflex of initial **h₁* in Luwian (and later in Anatolian as a whole), its presence could not be detected directly. As it is well-known, **h₁* does not color adjacent vowels, meaning that **h₁V > *V*. Eventually, in all IE languages except for Anatolian, prevocalic laryngeals in *Anlaut* position are lost without traces. Therefore, before Kloekhorst's theory, these could only be proven by the uncommon complex formation in which the reflex of PIE **h₁* had not been leveled out, such as Ved. PTCP. *ásat-* 'not being' < PIE **h₁esnt-* (Kapovic 2017, 44) or inferred by typological reasons (see Gamkrelidze and Ivanov 2010, Kölligan apud Giannakis 2013), for whom IE roots could not start by anything other than consonants, as were the laryngeals. Even though this theory has been losing acceptance recently, the presence of **h₁* in the anaphoric pronoun is assured by its presence in the relative pronoun **h₁io-*, which is derived from it, as it will be proven later in this same thesis.

Kloekhorst's idea is that, in Anatolian, the IE branch that overall preserves laryngeals the best in the IE family, **h₁e* can be observed directly, through plain spelling, Hitt. *e-eš-zi* 'is' < PIE **h₁ésti*, or even by the usage of a separate sign in Hieroglyphic Luwian, HL *á-sa-* 'to be'. In Luwian, sign **19*, also traditionally transcribed as *á*, just stands for the reflex of **h₁* which is

exactly the sign that is used with consistency to spell the anaphoric pronoun *á-pa-* < **h₁o-b^ho-*⁹ (Kloekhorst 2004), which is an Anatolian new formation based on the IE original anaphoric pronoun.

2.4.2 The reconstruction

Masculine									
		Plt.	Gr.	PIIr.	PGm.	PBSl.	Alb.	Arm.	PCel.
SG.	NOM.	<i>*es</i>		<i>*a₁iam</i>	<i>*ez</i>	<i>*jis</i>	<i>ai</i>	<i>ay-</i>	<i>*ei</i>
	ACC.	<i>*im</i>	<i>iv</i>	<i>*imam</i>	<i>*inō</i>				<i>*e/im</i>
	GEN.	<i>*esio</i>		<i>*asyá</i>	<i>*eso</i>				<i>*ehio</i>
	DAT.	<i>*esmei</i>		<i>*asmāi</i>	<i>*imm-</i>				<i>*eiboi</i>
	ABL.	<i>*esiod</i>		<i>*asmād</i>					
	INSTR.								
	LOC.			<i>*asmin</i>					
PL.	NOM.	<i>*eioi</i>		<i>*imai</i>	<i>*īz</i>				
	ACC.	<i>*eions</i>		<i>*imans</i>	<i>*ins</i>				
	GEN.	<i>*eisom</i>		<i>*aisam</i>	<i>*ezô</i>				
	DAT.	<i>*eifos</i>		<i>*aibhyas</i>	<i>*imaz</i>				
	INSTR.	<i>*eisōis</i>		<i>*aibhis</i>					
	LOC.			<i>*aisu</i>					

Feminine									
		Plt.	Gr.	PIIr.	PGm.	PBSl.	Alb.	Arm.	PCelt.
SG.	NOM.	<i>*eiā</i>	<i>ī</i>	<i>*ī-</i>	<i>*sī</i>		<i>ajo</i>		
	ACC.	<i>*eiām</i>	<i>iv</i>	<i>*imām</i>	<i>*ijō</i>				
	GEN.	<i>*esiās</i>		<i>*asyas</i>	<i>*ezōs</i>				
	DAT.	<i>*esiāi</i>		<i>*asyāi</i>	<i>*ezōi</i>				
	INSTR.			<i>*a₁ā</i>					
	LOC.			<i>*asyai</i>					
	ABL.	<i>*esiād</i>							
PL.	NOM.	<i>*eiās</i>		<i>*imāns</i>	<i>*ijōz</i>				
	ACC.	<i>*eiāns</i>		<i>*imāns</i>	<i>*ijōz</i>				
	GEN.	<i>*eisāsom</i>		<i>*ā-</i>	<i>*ezô</i>				
	DAT.	<i>*eiāfos</i>		<i>*ā-</i>	<i>*imaz</i>				
	INSTR.			<i>*ā-</i>					
	LOC.								
	ABL.	<i>*eisās</i>		<i>*ā-</i>					

⁹ The *o in the first element is dropped due to aphaeresis. Kloekhorst 2004.

Neuter									
		Plt.	Gr.	Ved.	PGm.	PBSl.	Alb.	Arm.	PCel.
SG.	NOM./ACC.	<i>*id</i>			<i>*it</i>				<i>*ed(ed)</i>
PL.	NOM./ACC.	<i>*eiā</i>		<i>*imā</i>	<i>*ijō</i>	<i>*ja</i>			

PIE (excluding Anatolian)				
		Masculine	Feminine	Neuter
SG.	NOM.	<i>*h₁es, *h₁ei</i>	<i>*h₁ih₂, *h₁ieih₂</i>	<i>*h₁id</i>
	ACC.	<i>*h₁im</i>	<i>*h₁ieih₂m</i>	
	GEN.	<i>*h₁eso, *h₁esio,</i>	<i>*h₁esieh₂s</i>	
	DAT./INSTR.	<i>*h₁e-sm-</i>	<i>*h₁esi-?</i>	
	LOC.	<i>*h₁ei</i>		
PL.	NOM.	<i>*h₁oi ?</i>	<i>*h₁ieih₂s</i>	<i>*h₁ieh₂, *h₁ieih₂</i>
	ACC.	<i>*h₁eons</i>		
	GEN.	<i>*h₁eisom</i>	<i>*h₁ei-?</i>	
	DAT.	<i>*h₁ei-</i>	<i>*h₁ei-?</i>	

SG. NOM. M. **h₁es, *h₁ei* < **h₁e*

The nominative singular masculine, being the pivotal element in any PIE paradigm, represents the most controversial and most difficult form to reconstruct. Comparing the reconstructions of the various IE proto-languages, it is possible to reconstruct two different proto-forms: **h₁es*, the predecessor of Lat. *is* and PGm. **is*, and **h₁ei*, from PIIr. **aj-*, and PCel **ei*, and perhaps Arm. *ay-*.

It is my opinion that neither of the two represents the original PIE form, and that both have undergone dialect-specific changes, and that ultimately both derived from a single PIE form, namely **h₁e*.

Why can not one of these two be the original?

First, the evidence for **is* is gathered only from standardized regular paradigms, and ignores the evidence from Anatolian, cfr. Hitt. nom. sg. c. *aši* ‘s/he’, which points to the presence

of **o* in the root, or also alternative forms from the Germanic languages, such as OE *(h)ē* ‘he’ or Ger. *er* ‘he’.

Second, it pushes too far back in time the regularization of nominative ending **-s*. It is suspicious that most of the forms with the nominative ending **s* have the same vowel of the accusative form, and it is easy to imagine that **h₁e* >> **h₁i/e-s* after the influence of **h₁i/e-m*, taking over the root as well as the regular ending pattern. The issue is that it is easier to explain the introduction of nom.sg. **-s* in Latin and Germanic, rather than its demise in Vedic.

The second possibility, **h₁ei*, is shared by most PIE introductive grammar (Kapovic 2017¹⁰, Fortson 2004) due to its straightforwardness, as nom.sg. **e_ǵ*, acc.sg. **im* would fit well in a regular ablaut scheme and can explain the particular situation of nom.sg. in PIIr. **a_ǵám* > Ved. *ayám*, Av. *aiiām*, corresponding to its first element **a_ǵ*. However, the PIIr. form does not even showcase the simple form but a newly created and enlarged one and cannot even be supported by more complex combinations in Vedic itself, like in the case of Ved. *asáu*, whose first element must derive from **h₁e* and not as **h₁ei*.

When inspecting the overall paradigm, and confronting it with the Latin and Proto-Germanic forms, it is hard to explain how the form **h₁ei*, a well-established form through the paradigm, which became the base for the oblique cases and even the plural, came to be supplanted by an outlying formation, rather than the other way around.

In mechanical terms, let’s consider either one of these two alternatives were the original form:

- PIE **h₁es* > Lat. *is*, PGm. *is*; >> PIE **h₁eis* >> **h₁ei* > Arm. *ay-*, PIIr. **ai-*.

¹⁰ While Kapovic’s main reconstruction appears to be **e_ǵ*, he is open to the possibility of **(h₁)e_ǵ*, indicating the initial laryngeal between brackets.

- PIE **h₁ei* > Arm. *ay-*, PIIr. **ai-*; >> PIE **h₁eis* >> *h₁es* > Lat. *is*, PGm. *is*.

Neither thereof can be correct.

Therefore, the final solution is, in my opinion, that both **h₁ei* and **h₁es* represent two alternative evolutions from the form **h₁e*. Specifically, this form, very bare and not enlarged by any suffix, must be exceptionally ancient, stemming from a period before the generalization of the ergative **-s*.

SG. ACC. M. **h₁im*

PIE **h₁im* is the base form for all the IE accusative formations. The possible alternative, **h₁em*, is instead in my opinion not a real form. **h₁em* is erroneously reconstructed from PIt. **em*. However, PIt. **em* must be judged as a language-specific unstressed innovation. It is difficult to interpret the original nature of the vowel, given the fact that the original root did not contain any semi-vowel. In any case, **i* is assured by PIIr. **im-*.

SG. GEN. M. **h₁esio*, **h₁eso*

Independently from the two different forms, the root of the pronoun is steadily **h₁e*, probably indicating that the genitive and the nominative had a common origin, plus the suffix **-s(i)o* (Beekes 1988). This ties back to the ergative theory, which states that genitive and nominative derive from non-other than a common, older case, the ergative. The two different forms are caused by a dialect split, described later in this chapter when dealing with the pronominal isoglosses.

SG. DAT./INSTR. M. **h₁esm-*

Considering all the attested formations, it seems that the suffix **-sm-* belonged to a proto-dative from which all the other forms derived, by adding the dialect-specific ending, except in Anatolian. The suffix **-sm-* itself is according to De Vaan (2019, 203) the 0-grade form of the root **sem-* ‘one’.

SG. LOC. M. **h₁ei*

Although it was not maintained in the paradigm of any IE language, this form is usually reconstructed based on the non-paradigmatic attestation and it is particularly relevant to understand the possible deictic reading of the anaphoric pronoun. After all, the deixis is itself a locative indication. This can be further analyzed as **h₁e* + **i*. The locative ending **i* is attested in the nominal paradigm and is present in many of what are classically considered adverbs. Many assume that this construction of base root plus the locative ending is the base for all the **h₁ei*-based forms of the paradigm.

PL. NOM. M. **h₁oi?*

What I am suggesting is that, considering Lat. *eī*, which comes from **ei-oi* according to Beekes (1983), Ved. *imé*, in which the last part may come both from **ei* or from **oi*, and Hitt. *é*, which can only be derived from **h₁oi*, may be the proof that the original PIE nominative plural was **h₁oi*.

The problem with this reconstruction is that it does not follow any already-established PIE ablaut pattern.

PL. ACC. M. **h₁eons?*

The structure of this pronoun, reconstructed from Latin and PIIr., appears to be a recent formation, formed by combining **h₁e* with **ons*.

PL. GEN. M. **h₁esom*

This form is usually etymologized as **h₁eisom*, which gives more credit to the PIIr. reconstruction. However, both OLat. and PGm. point to **h₁esom*, which looks more ancient and closer to the genitive singular.

PL. DAT. M. **h₁ei-*

The original shape of the dative is not recoverable. The attestations vary depending on the dialect and they are so different that no proto-form can be reconstructed.

SG. NOM. F. **h₁ieih₂*, **h₁ih₂*

The nominative feminine singular poses in my opinion many questions that are difficult to answer. First, we are presented with two very different forms, namely **h₁ieih₂*, and **h₁ih₂*. Since it is widely agreed that the PIE feminine gender must have been of recent origin, it can be further noticed that the two formations derive from two different base forms and their shapes are dictated by two different analogic processes.

The form **h₁ih₂* can be reconstructed from Greek *ἰ¹¹*, the analysis of PIIr. initial vowel **ī-* and from the second element of PGM. **sī-*. The base **h₁i-*, the same of the neuter singular, is combined with **-h₂*, the collective ending that also formed the plural of the neuter nouns. This feminine singular formation is thus different from the neuter plural.

The form **h₁ieih₂* is taken directly from the neuter plural. Alternatively, it is possible to assume that the new feminine nominative plural was formed with the new enlarged root **h₁ei* + the more recent athematic neuter ending plural **-eh₂*.

It seems to me that the form **h₁ih₂*, less regular, must have been the more ancient one.

ACC. SG. F. **h₁ei-*

The remaining singular feminine forms are formed building on top of the enlarged root with the regular feminine endings. Therefore, it appears that the feminine forms are somewhat more recent, being more regular.

GEN. SG. F. **h₁esieh₂s*

¹¹ The reason why PIE **h₁ih₂* did not produce pre-Gr. **ja* is in my opinion to be ascribed to the syllabification of PIE **h₁ih₂*.

The best way to dissect this form is to follow De Vaan (2019, 204); he views **-si-* as the feminine counterpart of **-sm-* which can be found in the dative masculine. The relationship between **-sm-* and **-si-* is based on animacy/inanimacy and it is explained in De Vaan (2019).

NOM. PL. F. PIE **h₁ieih₂s*

In the same way, the feminine plural is built regularly adding the feminine endings. This can be seen in the plural nominative, where the plural is formed simply adding the pluralizing **s* to the newer singular formation.

NOM./ACC. SG. N. **h₁id*

The neuter singular is formed by adding the neuter singular ending **d*, found only in the pronouns, to the singular base form **h₁i-*. The ending **-d* is also visible in PIE **tod* ‘that’, **k^wid* ‘what?’.

NON./ACC. PL. N. **h₁ieih₂*, **h₁ieh₂*

Although **h₁ieh₂* appears to be the older variant, from the two is **h₁ieih₂* that survived and is reflected in the various Indo-European languages.

2.4.3 Isoglosses

Alongside the well-known isoglosses, such as the presence or not of the neuter gender, or the difference of the instrumental plural and genitive singular endings that have been extensively analyzed by Gamkrelidze and Ivanov (2010), it is possible to spot further isoglosses in the anaphoric pronoun.

NOM. SG. M.	<i>*h₁ei</i>	<i>*h₁es</i>
Languages:	PIIr. PCel. Arm. Alb.	PIt. PGm.

GEN. SG. M.	<i>*h₁esio</i>	<i>*h₁eso</i>
Languages:	PIIr. PIt. PCel. Alb.	PGm. PBSl. ¹²

NOM. SG.F.	<i>*h₁eieh₂</i>	<i>*ih₂</i>
Languages:	PIt. Alb.	Gr. PIIr. PGm.

It is interesting to notice that Hittite cannot be placed in any isogloss, in my opinion, because these isoglosses took place only in common PIE after the split of Anatolian.

Furthermore, these isoglosses cannot be grouped, suggesting that the individual split happened independently, although from the same analogical processes.

2.4.4 Proto-Indo-Anatolian

Finally, by comparing PAn. with what can be reconstructed for PIE (or rather late PIE, also called Common PIE) it is possible to attempt a reconstruction of PIA (proto-Indo-Anatolian).

Animate			
		PIE (excl. PAn.)	PAn.
SG.	NOM.	<i>*h₁e</i>	<i>*h₁os (+ *i)</i>
	ACC.	<i>*h₁im</i>	<i>*h₁om (+ *i)</i>
	GEN.	<i>*h₁eso</i>	<i>*h₁el</i>
	DAT.	<i>*h₁es-</i>	<i>*h₁ed</i>
	INSTR.	<i>*h₁ei</i>	<i>*h₁ed-</i>
PL.	NOM.	<i>*h₁oi ?</i>	<i>*h₁oi</i>
	ACC.	<i>*h₁eons</i>	<i>*h₁oni-us?</i>
	GEN.	<i>*h₁esom</i>	-
	DAT.	<i>*h₁ei-</i>	<i>*h₁ed</i>

¹² Only the pronominal form INTER. GEN. SG. N. OCS *česo* ‘of what’.

Non-animate			
SG.	NOM.ACC.	PIE (excl. PAn.)	PAn.
		<i>*h₁id</i>	<i>*h₁id (i-?)</i>
PL.	NOM.ACC.		
		<i>*h₁ieih₂</i>	-

PIA			
SG.	NOM.	Animate	Non-animate
		<i>*h₁e</i>	<i>*h₁i-</i>
	ACC.	<i>*im</i>	-
PL.	NOM.		
		<i>*h₁oi</i>	?

NOM. SG. M. **h₁e*

The presence of final **s* in PAn. allows speculating that nominative **-s* could already be present there. However, I am firm in the consideration that the original NOM. SG. M. was *s*-less for the reasons that have already been stated. More interesting is the *e*-grade/*o*-grade ablaut alternation. It is impossible to know which one came first, but it is in truth more probably that the Anatolian paradigm had shifted to a regular *o*-stem under the pressure of the other regular pronouns.

ACC. SG. M. **h₁im*

Even though PAn. ACC. SG. M. presents an *o*-grade, I am convinced that **h₁om+i* has been analogically reshaped after the nominative. The older accusative is still visible in the PAn. neuter **in+i*. If not from the original accusative, the existence of **in+i* would have no explanation whatsoever. It is also possible that **i-* might have been the 0-grade form of earlier **h₁ej-* and that it was created when the ergative alignment shifted to accusative.

NOM. PL. M. **h₁oi*

The PAn. reconstruction confirms what has been said previously about the nominative plural. Not only, now the aberrant *o*-grade is supported by the *o*-grade visible in the nominative singular.

NOM/ACC. SG. N. **h₁id*

Set aside NOM/ACC. SG. N. **im+i* (the Hittite proto-form), if we survey the neuter form of the other pronouns, we find that the neuter is consistently formed by the addition of **d*, such as Hitt. *=at* and *apat*. This leads to the conclusion that **id* is reconstructable for PIA, again presenting an unexpected ablaut alternation.

However, in Anatolian, **id* is nowhere to be found. The ending neuter singular, excluding *ini*, is *-i* (Hitt. *ki-i* ‘that’, *ki-ni* ‘that’) suggesting that either Hittite removed final **-d*, or that the addition of **-d* to mark the neuter was a post-Anatolian innovation.

In any case, it is safer to agree that the neuter form ought to be **id*; this is in agreement with the reconstruction of other pronouns such as Hitt. *apāt* ‘that near you’ and *=at* ‘it’.

NOM/ACC. PL. N. ?

Given the fact that the no neuter plural form of the pronoun is attested in the Anatolian languages, and that even in PIE the formation of the neuter plural looks too regular to be ancient, it is my conviction that PIA had no plural form for the neuter pronoun. This should not come as a surprise, since it is well known that there was no clear-cut differentiation between singular and plural regarding neuter objects in the ancient IE languages. Even in classical languages, like Greek, neuter plural subjects agreed with singular verbs.

3 The relative pronoun

The relative pronoun derived from PIE **h₁iōs* is rarer compared to the anaphoric pronoun. It is also described as a relative pronoun due to its use in Greek and Vedic, even though PIE **h₁iōs* and its variations do not always function as relative, especially in the IE language where PIE **h₁iōs* is not attested as part of a regular paradigm. This is especially true in PGm. and in PBSl. where the meaning is deictic. Furthermore, given its regular structure, its paradigm does not reveal much in terms of pre-PIE reconstruction; however, what makes it interesting is its original PIE phonology and the fact that its reflexes differ in meaning, alternating from a true relative pronoun to a deictic pronoun.

3.3 The attested forms

3.3.1 Greek

3.3.1.1 Relative pronoun

		Masculine	Feminine	Neuter
SG.	NOM.	ὁς	ἥ	ὃ
	ACC.	ὃν	ἥν	ὃ
	GEN.	οῦ	ἥς	οὔ
	DAT.	οῖ	ἥ	οῖ
PL.	NOM.	οἱ	αἱ	ἃ
	ACC.	οὓς	ἃς	ἃ
	GEN.	οῶν	ῶν	ῶν
	DAT.	οἷς	ῇς	οἷς

Ancient Greek provides us what is in my opinion the most useful piece of information regarding this pronoun. As stated before, its root is usually reconstructed as **iō* (Fortson 2004, Sihler 1995¹³). This is however a too simplistic resolution and that ignores the Greek “split” of

¹³ Sihler addresses this problem claiming that **H₂yV- > ζV-*, which is precisely the opposite of what is advanced here.

PIE $*\text{̑}V$. Others, like Dunkel, prefer to etymologize Gr. ὄζ from $*h_2\text{̑}ios$, or also $*H\text{̑}ios$ ¹⁴, something that is done with the purpose of distinct the anaphoric pronoun from the relative one. But, if one considers its proximity in shape and meaning with the anaphoric pronoun, then the only reasonable solution will be identified $*H$ as being $*h_1$. The presence of the laryngeal is obfuscated in Indo-Iranian and Germanic, yet this is not true in Greek.

This interpretation is not universally accepted; however, as discussed in Beekes (1969, 95-98) and Bozzone (2013) there is the possibility to interpret Greek ζ - as the reflex of PIE $*\text{̑}$, as in Gr. $\zeta\upsilon\gamma\acute{o}\nu$ (cognate of Goth. *yuk*, Ved. *yugá*, from PIE $*\text{̑}iugóm$ ‘yoke’), while the sequence of $*h_1\text{̑}$ becomes ’ (the aspiration, also known as *spiritus asper*, written from now on as *h* for clarity’s sake).

Briefly, the considerations are the following:

- This is the most convincing way to explain the two different evolutions of the supposed initial $*\text{̑}$ in Greek.
- Even though there is evidence to support the view that every PIE word must have started with a consonant, there is no reason to assume that a laryngeal must always be required in PIE before glide. As a matter of fact, $*\text{̑}$ was a consonant.
- Following the previous point, being $*\text{̑}$ a consonant, we do not find evidence for the vocalization of preceding laryngeal before $*\text{̑}$, leading to the conclusion that the sequence PIE $*h_1\text{̑} >$ Gr. $/h/$.
- This proposed sound law has phonetic basis: one way to untangle the problem is to suppose that the new Gr. *h* sound is the result of the combination of the place of

¹⁴ Which is somewhat of an agnostic statement.

articulation of $*h_1$, glottal, which was kept, with the manner of articulation of influenced by the following $*y$, approximant, thus creating a glottal approximant, namely /h/. A second possibility, as given by Bozzone (2013) is to postulate that PIE $*h_1$ represented already in PIE a glottal approximant and that the coalescence of PIE $*h_1$ and $*j$ gave rise to $*h^y$.

- This would also mean that while the coalescence of PIE $*h_1$ and $*y$ produces Gr. h , this is not true for $*h_2$ and $*h_3$: PIE $*h_{2/3}y$ - > pre-G. $*y$ - > Gk. ζ .

The present interpretation not only untangles the *impasse* between Gr. ζ - and h -, but it is also able to detect the laryngeal in Gr. $\alpha\zeta\omicron\mu\alpha\iota$ ‘to revere’, cognate of Ved. $yájati$ ‘to worship’, both from PIE $*h_1jeh_2g$ -.

However, the etymologization of both Gr. $\acute{\omega}\rho\alpha$, PGm. $*jēraq$ from PIE $*jeh_1$ - casts doubts on this sound law: it would be difficult to accommodate a possible initial $*h_1$ when followed in the same syllable by a second $*h_1$. A solution to this problem would be to assume that also $*h_2j$ - would give $*h$ in Greek. Notwithstanding, a clear-cut solution has not been found yet, but this is in my opinion the most credible so far.

A second solution to this problem is to postulate that the Greek relative pronoun is related to Ved. $sās$, Jav. $hō$ ‘this, the’ and to Toch.B se , $sā te$, Toch.A $sās$, $sās tās$ ‘this’ meaning that is the reflex of PIE $*so$ - (Dunkel 2008). Phonologically, this may be correct, however, the evidence coming from the non-paradigmatic words, the lexical correspondence with the deictic pronoun, and especially the grammatical correspondence with Ved. yas is enough to rule out this possibility.

It is safer to assume that the reflex of PIE $*so$ - is to be found in Gr. $\omicron$, the article, position also held by Beekes (2010).

3.3.1.2 Non-paradigmatic forms

Gr. ἕως ‘until, so long as’

This form is reconstructed by Dunkel (2014, 317) as derived from **h₁ǵéh₂-h₁-u_o-*. In his words, the adverb is based on the neuter plural in the e-grade¹⁵, which is not uncommon in the adverbs, the *h₁* signals the old instrumental case, and the particle *-u_o-* can be described as conveying an exclusive meaning. Originally, its meaning must have been ‘with this (and nothing else)’. The temporal reading is also shared by Ved. *yāvat*.

Gr. ἤμος ‘when, as soon as’

The form is built from the collective **h₁ǵe-h₂*, which later was adopted as the feminine singular. I am not sure about the origin of the second element, even though OCS *jamože* ‘to where’ shows the same formation.

Cypriot Gr. *o-pi* ‘if’, Gr. ὅθι ‘where’, Gr. ὅτε ‘when, if’

Greek showcases three interesting adverbs based on the relative pronoun, whereas other languages such as Latin based the same adverbs on the deictic adverb. Confront Gr. ὅθι ‘where’ with Lat. *ibī* ‘where’, both forms built by adding the locative suffix *-d^{hi}*. My interpretation regarding this set of adverbs is that the aspiration was taken from the relative pronoun and added to original, yet unrecoverable, forms based on the anaphoric pronoun.

Gr. ὅσοις ‘however (great)’

Gr. ὅσοις functions as a relative and is built from PIE **h₁ǵo-ti-o-*.

Gr. ὅστις, ἥτις ‘whoever, whichever’

This pronoun was formed by adding the indefinite pronoun *τις*, from PIE **k^wis*, to the relative pronoun.

¹⁵ There can be a discussion whether the alternation between **e* and **o* should be regarded as ablaut or as two different suffixes. This discussion is treated in (3.4).

Gr. Hom. *ὅστις* ‘whoever’

From the initial aspiration, one can deduce that this pronoun is built on top of PIE **h₁ǵo-*. From the meaning and the Greek reflex, one can recognize the final PIE element **k^wi*.

Gr. *ὅς* or *ὥ* ‘how’

Originally, this form represented the instrumental case of Gr. *ὅς* and belonged to the regular paradigm. Like Ved. *yā* ‘with which’, the long vowel was caused by the instrumental ending **h₁* lengthening PIE **o*. Final *ς* was added later after it had shifted from a pronoun to an adverb.

3.3.2 Latin and other Italic languages

3.3.2.1 Non-paradigmatic forms

Lat. *iam* ‘already, now’

Lat. *iam* may be analyzed in two ways, both correct from a sound law point of view. On one hand, it may have been a repurposing of the PIE feminine accusative singular of **h₁e*, on the other one it can derive from the e-grade of the relative pronoun in its feminine accusative case. I lean towards the first solution since the form **h₁jo-* is nowhere else to be seen in Latin.

3.3.3 Indo-Iranian languages

3.3.3.1 Relative pronoun

		Masculine	Feminine	Neuter
SG.	NOM.	<i>yaḥ</i>	<i>yā</i>	<i>yat</i>
	ACC.	<i>yam</i>	<i>yām</i>	<i>yat</i>
	GEN.	<i>yasya</i>	<i>yasyāḥ</i>	<i>yasya</i>
	DAT.	<i>yasmai</i>	<i>yasyai</i>	<i>yasmai</i>
	ABL.	<i>yasmāt</i>	<i>yasyāḥ</i>	<i>yasmāt</i>
	INSTR.	<i>yena</i>	<i>yayā</i>	<i>yena</i>
	LOC.	<i>yasmin</i>	<i>yasyām</i>	<i>yasmin</i>
PL.	NOM.	<i>ye</i>	<i>yāḥ</i>	<i>yāni</i>
	ACC.	<i>yān</i>	<i>yāḥ</i>	<i>yāni</i>
	GEN.	<i>yeṣām</i>	<i>yāsām</i>	<i>yāsām</i>
	DAT.	<i>yebhyaḥ</i>	<i>yābhyaḥ</i>	<i>yebhyaḥ</i>
	ABL.	<i>yebhyaḥ</i>	<i>yābhyaḥ</i>	<i>yebhyaḥ</i>
	INSTR.	<i>yaiḥ</i>	<i>yābhiḥ</i>	<i>yaiḥ</i>
	LOC.	<i>yeṣu</i>	<i>yāsu</i>	<i>yeṣu</i>

As stated above, the presence of Ved. *y-*, assures us its derivation from PIE **j*. Initial **h₁* must be inferred from its correspondence with Gr. *ὅς* but cannot be proven through sound laws from Vedic.

3.3.3.2 Non-paradigmatic forms

Ved. *yàdyad* ‘whatever’

The relative pronoun could be reduplicated in Ved. forming *h₁jio-* *h₁jio-*, giving the pronoun a generalizing reading.

Ved. *yàs... kàs ca* ‘whoever, whatever’, Av. *yō cišca*

This same form, minus the final element **k^we* ‘and’ is visible in Greek *ὅττι*. It is interesting to notice that Greek and Indo-Iranian share many composed formations that are not present in other IE languages.

Ved. *yāt* ‘since’, Av. *yāt* ‘id.’

These two forms originate from the old ablative neuter singular (hence the suffix **ad*), probably meaning ‘from that time’.

Ved. *yátas* ‘from where’, Ved. *yátra* ‘to where’, Av. *yaθrā* ‘id’.

In Vedic, the difference between the deictic and the relative is visible by confronting pairs like Ved. *itás*, *átra* against Ved. *yátas*, *yátra*. Since this difference is not as clear-cut in other IE languages, it is impossible to determine whether it was inherited or the two forms influenced each other in PIIr. times. In Avestan and Vedic one may find many other temporal and locative adverbs built on top of the relative pronoun.

Ved. *yáthā* ‘how’, Aav. *yaθā* ‘id.’

Due to the presence of PIIr. **t^h* one must reconstruct PIE **h₁jō-th₂-*, **th₂* being the collective of **so-*, **to-*, followed by a combination of vowel plus laryngeal, most likely **eh₁*, leading to the hypothesis that this was originally an instrumental.

Ved. *yāvat* ‘as long as’, Av. *yauuat* ‘id.’

The form is identical to Gr. ἕως and it, therefore, points to a PIE origin.

3.3.4 Germanic languages

Dunkel's position (2014, 384) about the following Germanic entries is that they are formations built from the PIE conjunction **jō-* 'and'. In my opinion, instead, those forms that are pronominal, be it locative or relative, do derive from PIE **h₁jō-*, while with regards to those adverbs such as PGm. **jai* 'yes', it is indeed more likely that they derive from the conjunction **jō*.

3.3.4.1 Non-paradigmatic forms

Goth. *ja* 'yes, thus', OHG *ja* 'yes', ON *já* 'yes'

In regard of PGm. *ja*, following Kroonen's opinion (2013), I do not believe that its origin must be found in PIE **h₁jō*. If one assumes that the original meaning had to be closer to 'and' than to 'yes', based on PGm. **jah* 'and', then the best etymology would be PIE **jō*, as stated before. If instead one wishes to draw a parallel between PGm. **ja* and Lat. *iam* 'indeed', then the etymology **h₁i-eh₂*, as in the collective of **h₁e-*, is possible.

Runic NOM. SG. M. *ias*, *iaR*

This form, reported by Dunkel (2014, 384), perfectly showcases the inherited relative PIE pronoun **h₁jō-* in a Germanic language. Regrettably, Runic is the only language that presents a direct continuation of the relative pronoun, and the interpretation of early Runic texts is notoriously not unanimous. I would not, therefore, put too much faith into this attestation.

Goth. *jabai*, *ibai*, *iba* 'if', OHG *ibu* 'if', ON *ef* 'if'

In the same way as Goth. *jabbe*, Goth. *jabai* was a combination of **h₁jōd* together with the ablative ending **b^ho/e*.

Goth. *jainar* 'yonder', Goth. *jaind* 'thither', *jainprō* 'from there', *jaindrē* 'thither'

These adverbs are built on top of PGm. **jainaz* and prove that the pronoun was well integrated in the deictic system.

Goth. *jains* ‘yon’, OHG *jēner*, ON *inn*

Germanic languages are instead rich in attestations of this group of pronouns that can be named “yon-group”. To the yon-group belong the deictic pronoun proper and all the local adverbs, both movement and stationary. It is an interesting case because it is the only instance in which a pronoun deriving from the PIE relative pronoun has a deictic meaning. PGm. **jainaz* represents the so-called “third deixis”, which means it refers to objects away both from the speaker and the listener.

From a structural point of view, PGm. **jainaz* was formed with various PIE elements, namely **h₁jo-h₁i-no-*. The various elements perfectly explain the usage of this pronoun: while its main indication is deictic (**h₁i-* and **no-*), it could also be used as a relative pronoun (**h₁jo-*), and this meaning is still retained in some Germanic languages such as in Dutch *diegene* ‘s/he, who’.

Goth. *japþe* ‘even if’

This concessive adverb can be reconstructed from PIE **h₁jod-teh₁*, the N. SG. combined with the old instrumental of **to-*, once again indicating that many of the IE adverbs were in origin pronouns.

Goth. *hvarjis* ‘which one?’, ON *hverr* ‘id.’

The PGm. interrogative pronoun **hwarjaz* can be compared to Ved. *yàs... kàs ca*. The fact that in PGm. the two elements are inverted suggests that in PIE they were yet not fixed.

3.3.5 Baltic and Slavic

It is important once again to remember that it is almost impossible to discern which Balto-Slavic anaphoric forms are derived from PIE **h₁e* and which ones from **h₁jo* because the two paradigms have undergone syncretism both in form and in meaning. Therefore, the following forms have been listed here mainly because it is possible to link them with other words in other IE languages due to their formation and their meaning that can be safely derived from PIE **h₁jo-*. In the end, these words might have been formed in a time where **h₁jo-* and **h₁e-* were still separated; however, this is speculation.

3.3.5.1 Non-Paradigmatic forms

Latv. *ja* ‘when’ < H₁od

The reconstruction of Latv. *ja* from **h₁iod* is due to having the same meaning of Ved. *yád*.

OCS *jegože* ‘which one’

This form was, in my opinion, formed by the PIE pronominal base **h₁je* followed by **g^ho* and **g^he*

Lith. *jėi* ‘when, if’

This form appears to have been originally an e-grade instrumental. The reconstruction therefore is: **h₁je-h₁i*.

Lith. *jeib* ‘because’

Although similar to Goth. *jabai*, Lith. *jeib* appears instead to have been built on top of Lith. *jėi* while adding the suffix **-b^hi*.

Lith. *jogi* ‘because’

In this case, the base form **h₁iō-* has been enlarged by the element **g^he/i* that can be often found in Balto-Slavic pronouns and adverbs. According to Dunkel (2014, 313) the forms must be derived from the original ablative **h₁iō-d*.

3.3.6 Celtic

3.3.6.1 Paradigmatic forms

Celtib. NOM. SG. *ios*, ACC. SG. *iom*, GEN. SG. F. *ias*, NOM/ACC. PL. F. *ias*, NOM/ACC. PL. N

ia

Thanks to the Celtiberian pieces of evidence, it is possible to demonstrate that Celtic continued the PIE relative pronoun **h₁io-*. Although the whole paradigm is not attested, the four attested forms continue the regular PIE paradigm (Wodtko 2003, 16-17).

3.4 Reconstruction of the PIE paradigm

		Masculine	Feminine	Neuter
SG.	NOM.	* <i>h₁iōs</i>	* <i>h₁iēh₂</i>	* <i>h₁iōd</i>
	ACC.	* <i>h₁iōm</i>	* <i>h₁iēh₂m</i>	
	GEN.	* <i>h₁iōsjo</i>	* <i>h₁iōsje₂h₂s</i>	
	DAT.	* <i>h₁iōsmōi</i>	* <i>h₁iōsje₂h₂ei</i>	
	ABL.	* <i>h₁iō-</i>	* <i>h₁iōsje₂h₂s</i>	
PL.	NOM.	* <i>h₁iōi</i>	* <i>h₁iēh₂es</i>	* <i>h₁iēh₂</i>
	ACC.	* <i>h₁iōms</i>	* <i>h₁iēh₂ms</i>	
	GEN.	* <i>h₁iōisoHom</i>	* <i>h₁iēh₂soHom</i>	
	DAT.	* <i>h₁iōis-</i>	-	

Overall, the PIE paradigm of the relative pronoun presents itself as very regular and therefore clearly young. The masculine and the feminine follow the o-stem, while the neuter endings are in line with those of other pronouns, especially in regard of final *-d as the mark of the neuter singular.

There can be two ways to analyze the structure of this pronoun. The first would be to consider **h₁iō* and **h₁iē* two ablaut variations of the root **h₁iē*. Instead, in my opinion, the only way to analyze these forms is to consider them formed by the root **h₁i-* plus the ablauting thematic vowel e/o; this accounts for the parallel between the paradigm of this pronoun and the o-stem nouns. The distribution of the two stems does not appear to have a particular logic behind it. Some forms, such as Ved. DAT. PL. M. *yébhyas* are based on the enlarged stem **h₁iōj*; the additional **j* might be original from the instrumental.

In the same way as the pronouns, also the adverbs may be based both on the e-grade or the o-grade of the suffix, and, again, no pattern is discernable.

The way I view the relative pronoun, as a combination of root **h₁i-* and suffix *-o- is tied to the consideration that the relative and anaphoric pronouns must be formally related.

4 Considerations

4.3 Common origin or derivation?

If one subscribes to the notion that the relative pronoun was shaped as **h₁iō-*, as it has been the case in this work, then it is natural to assume that the anaphoric pronoun and the relative pronoun must be related somehow.

Related how? Theoretically, there can be up to three possibilities.

1. The first thesis would be to derive both relative and anaphoric pronouns from a common proto-pronoun in pre-PIE. This was the interpretation I held before embarking on writing my thesis.
2. The anaphoric pronoun is derived from the relative pronoun.
3. The relative pronoun is a dialectal-specific derivation of the anaphoric pronoun. This is the solution I ascribe to.

The arguments in favor of the third solution and that are directly contrary to the first and second solutions are:

- While the paradigm of the anaphoric pronoun is very irregular and therefore must be ancient, the relative pronoun is mostly regular and in line with an o-stem noun.
- Contrary to Dunkel (2014, 319), who states that and the pronoun **h₂iō*, had existed in all IE branches, and that it was replaced in some dialects such as Anatolian and Baltic in its relative function by the interrogative pronoun **k^wi/o-*, in my opinion the relative

pronoun began to exist at the earliest after the Anatolian split¹⁶. I subscribe to this view because nowhere in Anatolian the pronoun **h₁iō-* is present in any shape or form, and, although it is also not present in Latin, there appear to be evidences in Celtic, which would therefore lead to think that it was present in Italo-Celtic.

- From a formal standpoint, I envision two possible solutions to explain the formation of **h₁iō-* from **h₁e-*:

(1) NOM. **h₁e* >> (2) LOC. **h₁e-i* (3) > (4) **h₁iē-* >> (5) **h₁iō-*

From the old nominative (1), the locative is formed (2) by adding the locative particle **i*. The new form **h₁iē-*, once it had become the oblique stem (4), was reshaped as **h₁iē-*. At this point, **h₁iē-* (still used throughout the new paradigm and as the base of some adverbs), shifted to an o-stem (5).

or

(1) ACC. **h₁i-* >> (2) **h₁iēh₂* >> (3) **h₁iō-*

From the accusative stem **h₁i-* (1), the collective **h₁iēh₂* can be regularly formed (2). Since **-eh₂* is the regular feminine and neuter plural suffix of the o-stem, **h₁iō-* can be derived from analogy (3).

Both paths are possible, however, the second solution looks more attractive given the fewer amounts of steps required.

4.4 The possible link between the augment and the pronoun

¹⁶ Although Gamkrelidze and Ivanov (2010, 339) consider the creation of **h₁iō-* and its usage as the new relative pronoun as an isogloss, they only group together Greek, Phrygian, Indo-Iranian and Slavic, leaving out Germanic and Celtic.

The augment is a verbal prefix used in some IE languages (Greek, Indo-Iranian, Phrygian, and Armenian) that indicates the past time. In the earliest stage of Greek and Vedic, the augment was optional, and the augment-less verbal forms carry an injunctive sense (Fortson 2004, 101)¹⁷. Moreover, in the hymnic literature of Vedic and Homeric Greek, augment-less forms are preferred when describing a general past-tense narrative, while the forms with augment tend to be resultative or refer to events of the recent past to which the speaker had a direct experience. Although the specific usage of the injunctive is deeper than how it is portrayed here, what ties the augmented and augment-less past tense forms with the anaphoric reading of the personal pronoun, is the apparent link between the anaphoric element of the “real experience” of the speaker in case of augmented forms, and the hypothesized original particle or adverb that was supposedly attached to the beginning the verb as a clitic.

In relation to this, the augment is reconstructed in PIE as **é*, or, if one assumes the identity of the augment and the pronoun, as **h₁é-*. The phonetic shape and the general temporal deictic meaning of this prefix has thus led to believe that the IE augment and the PIE anaphoric pronoun must be related, or, more specifically, that the augment stems out from the pronoun, like the bleached grammaticalization of the first. The *communis opinio* postulates this grammatical shift from **h₁e-* ‘he, that’ to **h₁e-* ‘then’. Es: **h₁é-b^heret* > Gr. *ἐ-φερε*, Ved. *á-bharat* ‘s/he brought’.

Although the reconstruction is correct, there are some problems with the hypothesis of its origin. Willi (2018, 357-503) analyses in great depth this problem and identifies two major issues.

¹⁷ “Their precise function or functions are still not fully clear. In Homer, injunctives are interchangeable with past tenses but sometimes have gnomic force (that is, are used to express general truths). In Indo-Iranian, injunctives can indicate intent, futurity, and some quasi-modal meanings, and were also used in commands, especially prohibitions” (Fortson, 2014).

(1) First, the augment is nowhere to be found in Anatolian, the most ancient attested IE languages, and it is only present in a specific sub-grouping of IE language that already shares a large number of isoglosses, in particular in regard to the verbal system. To classify the augment as a general IE feature is a legacy from the traditional PIE reconstruction. Back in the previous century, PIE was reconstructed comparing Latin, Greek, and Vedic; since the augment was shared by two out of three, it was integrated into the PIE reconstruction.

(2) Given the fact that the augment is a central IE feature, Willi identifies a commonality between the reduplicated perfect and the augmented forms of the verbs. In his opinion, **h₁e-* was a generalized reduplicated prefix originated from a verb beginning in **h₁-* such as **h₁em-* ‘to take’. In the case of **h₁em-*, the reduplicated aorist and the augmented one would have the same structure ** h₁e-h₁m-e/o-*.

According to Willi, the generalized ** h₁e-* “reduplication” arose in response to the weakening, in this specific dialectal area, of the laryngeals and their coloring effect on the adjacent vowels. In his words, the first laryngeal in the reduplicated aorist of **h₂eǵ*, **h₂e-h₂ǵ-e/o-*, could have just been confused for a *h₁*, given the fact that the following vowel was already colored from **e* to **a* by the root laryngeal. At this point, the standardized reduplicated prefix of a laryngeal-beginning verb would then be spread to any other verb. This also explains the frequency of the so-called augment when compared to the reduplicated prefix: the augment was newer and became more regular, while the older was ousted and narrowed to a causative meaning.

A third problem that can be resolved by separating the augment from the anaphoric pronoun is the fact that **h₁e-* is a pre-PIE reconstruction and cannot be reconstructed for any proto-language of

the IE family. Unfortunately, the Greek NOM. SG. M. reflex of the inherited PIE anaphoric pronoun did not survive, but both in Arm. and in Ved. the anaphoric pronoun form is shaped as **h₁ei-*; Ved. *ayam* ‘he’ and Arm. *ays* ‘this’ do derive from **h₁e*, but **h₁e* itself was long gone when those two languages came to exist and could in no way have undergone the grammaticalization process that according to many textbooks turned it into a verbal prefix.

4.5 The Pre-PIE pronoun in the ergative theory framework

Beginning with Uhlenbeck (1901) and then with Vaillant (1936), many researchers pointed out that although PIE was undoubtedly an accusative language, one can find many traces of its ergative previous evolutionary stage. Amongst this long list, I argue that the paradigm that was here reconstructed for the anaphoric pronoun in pre-PIE represents an additional argument in favor of the ergative hypothesis.

Briefly, the ergative hypothesis argues that the root distinction between **so-* and **to-* in the nominative of the demonstrative pronoun is a reflection of the older ergative-absolutive distinction. The ergative case is the marked case, indicating the subject of a transitive sentence, while the absolutive, unmarked, refers to the object of an accusative sentence or to the subject of an intransitive sentence. Although ergative and absolutive were not at first bound to the grammatical gender of the NP, the ergative began to be tied to animate nouns and pronouns, while the absolutive to the neuter one: it is usually animate beings performing actions unto other beings, animate or inanimate alike. This can be also witnessed in the endingless or unmarked neuter direct case of many ancient IE nouns, such as NOM/ACC. SG. N. **jék^w-r-Ø* ‘liver’.

Similarly, the NOM. SG. M. **h₁e* that can be reconstructed for pre-PIE can be interpreted as the absolutive case (**h₁e-Ø*) of the old paradigm. Once this is assumed, also the other cases can be re-interpreted under the scope of the ergative framework.

- Pre-PIE ERG. and PIE NOM./GEN. **h₁e-s* << Pre-PIE ERG. **h₁e-Ø*. The ergative form became rooted more in certain dialects, and became the standard animate nominative, while in other dialects the ergative was only adopted as the genitive GEN. **h₁e-s-(o/īo)*.
- Pre-PIE ERG.IN. and PIE N. **h₁i-d*. << Pre-PIE ABS. **h₁i-Ø*. In this passage, which I admit is speculative, the older absolutive case was re-characterized as neuter (ergative?¹⁸) by adding the neuter marker **-d*.
- Pre-PIE DIR. and PIE AN. ACC. **h₁i-m*. << Pre-PIE ABS. **h₁i-Ø*. As it has been demonstrated by Willi (2018, 594) the original function of **-m* in Pre-PIE was directional and it was added to the old absolutive case¹⁹. Thanks to the likely increase of the antipassive construction, the directional form **h₁im* became the *de facto* object of an accusative sentence, which is called accusative.

Ultimately, it is possible to sketch a bare-boned paradigm for the Pre-PIE anaphoric pronoun from before and after it underwent syntactical changes due to the shift in action from pure ergative to accusative alignment:

Pre-PIE (transitory phase)		
	Prototypically Animate	Prototypically Inanimate
Erg.	<i>*h₁e-(s)</i> ²⁰	<i>*h₁i-d</i>
Abs.	<i>*h₁i-m</i>	<i>*h₁i-Ø</i>
Obl.	<i>*h₁e-</i>	<i>*h₁e-</i>

¹⁸ According to De Vaan (2019, 209)

¹⁹ This origin is however older than Willi himself, mainly Vaillant (1936)

²⁰ The anaphoric pronoun, due to its high-frequency use, was able to continue its “irregular” ancient-looking s-less form long enough up to the core PIE period. The irregular form is the reason why Ved. **aj-* does not showcase the ending **-s*, while other languages like Latin do.

Pre-PIE (pure ergative phase)	
Erg.	* <i>h₁e-∅</i>
Abs.	* <i>h₁i-∅</i>
Obl.	* <i>h₁e-</i>

This is the reason why all the iterations of **h₁e* that derive from the ancient absolutive, accusative singular **h₁im*, neuter singular **h₁id*, and neuter plural/collective **h₁i(e)h₂*, are based on **h₁i*. Moreover, the oblique can be still seen in the dative **h₁e-sm-* and the locative **h₁e-i̯*.

Interestingly, the ancient inanimate absolutive was replaced in the regular paradigm by the ergative, collapsing in one single NOM./ACC. case, but it survived in various adverbs, such as Ved. *iva* ‘if’, Lat. *ibī*, and so on, and it seems to me that its meaning was narrowed down to locative, according to Kuryłowicz's fourth law of analogy.

About the animate plural PIE **h₁oi*, it is difficult to say whether it is inherited from Pre-PIE **h₁oi*, when or how the vowel **o* developed, or whether rather PIE **h₁oi* was formed analogically by replacing an unknown ending with the plural ending *-*oi* already present in those pronouns whose vowel was already **o*, such as **so*, **to-*.

It seems to me that the genesis of the animate/inanimate distinction in IE took place, in the NP, thanks to the reinforced usage of the absolutive case in line with its prototypical role in any real-life situation (ie: objects only undergo actions and never initiate them), while in the anaphoric pronoun, the distinction arose out of necessity in the newer transitory verbal alignment, while in the older alignment it was unnecessary.

Something similar is found in classical Italian, where inanimate objects may be both grammatically masculine and feminine. However, It. *ella* ‘she’, *lei* ‘she/her’ or *egli* ‘he’, *lui*

‘he/him’ are only used for people, while *esso*, *essa* ‘it’ refers to inanimate things, depending on their grammatical gender.

4.6 The pre-Indo-Uralic anaphoric pronoun

Thanks to the internal reconstruction, one can analyze further back in time than the plain comparison of the attested languages may allow. The result, pre-PIE, can itself be compared with another entire language family, Uralic, and this comparison, although scant, cast light onto extremely ancient common features that may indicate a common origin between the two.

Kortlandt (2002, 2010) and very recently Kloekhorst, Pronk (2019), listed abundant morphological material that for their phonetic cannot be considered borrowing but must be treated as true Indo-Uralic vestige; among these, pronouns, the morphological class most resistant to change, are prominent, and in this list, the anaphoric pronoun is included.

The similarities between proto-Uralic and PIE in the pronominal category are plentiful (Björn 2016):

- PIE **k^wi-* ‘who’: PU **ki* (Fin. *ken*, Saa. *gii* Hun. *ki* ‘who’)
- PIE **k^wo-* ‘who, where, what’: PU **ku-*, *ko-* (Fi. *ku-ka* ‘who’, Saa. *guhte* ‘who, which’, Hun. *hol* ‘where’)
- PIE **so-* ‘that, s/he’: PU **so(n)* (Fin. *hän*, Saa. *son*, Hun. *ö, ön* ‘s/he’)
- PIE **tod* ‘that, it’: PU **to/tu* (Fin. *tuo*, Saa. *duot* ‘that’, Hun. *tova* ‘away’)

In regard of the anaphoric pronoun, the comparison is more complicated. First, the PU **i-* (Hun. *itt* ‘here’, Komi *e-sy* ‘this, each’, Mordvin *ist’a* ‘such’) lost its anaphoric pronoun and it is used, marginally, according to Björn (2019, 38), only in its deictic function ‘this, here’; second, PU **i-* is reminiscent of PIE **h₁id* rather than **h₁e*, which is what I reconstructed for PIE nominative singular. The Uralic evidence do not question that result; in fact, it must be considered that also in

IE deictic adverbs such as Lat. *ibī* ‘there’, Ved. *iha* ‘here’, ON *í dag* ‘today’ are based on PIE **h₁i-* and not directly on **h₁e*. Therefore, it is therefore possible that PU pronoun was based on the absolutive case alone.

Regarding the relative pronoun, it is possible to draw a parallel PIE **h₁io-* and PU **ju-* /*iu*/ (Fin. *joka* ‘who’, Mordvin *juza* ‘here and there’, Mari *južo* ‘each’). However, following Björn (2019 38), who quotes Paasonen and Rédei, I believe that this connection is not indicative of a common origin (that would lead to the reconstruction of PIU **h₁io-*) but rather of a convergence: in both cases, the relative pronoun was derived independently from the anaphoric pronoun.

There are two main reasons to prefer convergence over cognateship:

- As stated before in this thesis, the relative pronoun is a recent IE development, absent in Latin, Tocharian, and crucially in Anatolian. It would be indeed contrary to the core values of historical linguistic to postulate the existence of PIU **h₁io-*, and then to assume it was lost in all those IE branches that left the PIE continuum earlier than the rest.
- As it is visible in Fin. *joka* and the other Uralic cognates, this Uralic pronominal set does not have relative meaning. Moreover, the Uralic forms are a combination of PU. **ju* + **ke*. The particle **ke* ‘also, too’ is too cognate with PIE **k^we* ‘and’. In the end, all the “relative” Uralic forms derive from a language-internal combination of particles that already existed in PU, and the cognateship between PIE **H₁io-* and PU **juke* is unnecessary.

5 Conclusions

After a thorough examination of the entire IE repertoire of anaphoric, deictic, and relative pronouns, it is possible to reach the following conclusions in regard to the (pre-)PIE paradigm and its internal development. It is safe to state that the anaphoric pronoun **h₁e* and the relative pronoun **h₁io-* began with laryngeal-1, and this, together with their usage, unequivocally point to the conclusion that the second, existing only in the central group of IE languages, was derived from the first, and that this did not happen the other way around, nor that both pronouns derive from a prior unique pronoun.

Moreover, notwithstanding the dialect-specific and language-specific internal developments, both intra- and extra-paradigmatic, that have shaped the various IE languages, it is possible to identify the original IE paradigm and, even better, the pre-PIE paradigm. This paradigm, although still speculative in some respects, appears to be simpler in its structure and in line with the ergative verbal alignment that is postulated for pre-PIE. This pre-PIE paradigm revolves around the root **h₁V-*, the vowel being **e* in the NOM. SG. AN. as in **h₁e*, **i* in the ACC. SG. AN. **im* and in the neuter **id*, and possibly **o* in the plural **h₁oi*.

Concerning its meaning, **h₁e* is in almost all IE language both anaphoric, thus not marked, and deictic. However, it appears that the main and original meaning had to be anaphoric, while its deictic usage developed independently in the various IE languages, even diverging from language to language, as shown in the telling comparison between Lat. *ibī* ‘there’ and Ved. *ihá* ‘here’, or even Goth. *jains* ‘yon’. Not only, it is possible to argue that the deictic meaning was only tied to **h₁i*, a form that does not actually appear in the regular paradigm and is instead the offshoot remnant of the older pre-PIE pronoun, namely the absolutive case.

The fact that the main and original meaning of **h₁e* was anaphoric and not deictic is supported by the fact that the verbal augment, that has been often linked to the anaphoric pronoun, was instead a dialect-specific feature derived not from a hypothetical particle ***h₁e*, meaning ‘then’, but represents the standardized form of the verbal reduplication.

It is therefore false to posit this development:

- ***h₁e* ‘then, there’ >> **h₁e* ‘s/he’, **h₁e-* (augment), **h₁i* (deictic adverb ‘here, there’)

but rather:

- **Ce-* (reduplication) >> **h₁e-* (augment)
- **h₁e* ‘s/he’ >> *h₁i-* ‘here, there’, **h₁i-o* ‘which’.

These considerations are backed by what it is possible to gather from the earliest stage of IE reconstruction, named pre-Proto-Indo-European and the Proto-Indo-Uralic. Pre-PIE has been described as an ergative language, and the peculiarities observable within the paradigm of the anaphoric pronoun are in line with this alignment:

- **h₁e* represented the original and still s-less form that indicated (A)²¹ in pre-PIE; this form was later marked in some IE languages by the ending **-s*, to mark it as the nominative.
- **h₁i*, later **h₁i-m* for the animate nouns²² and **h₁i-d* for the inanimate ones, was the absolutive form. The ending **-d* was added to the absolutive to form the ergative of inanimate nouns. The original absolutive **h₁i* may be the base from which the deictic adverbs such as Lat. *ibī*, and Ved. *ihá* were based on.

²¹ Agent, the subjective in a transitive sentence.

²² The ending **-m* came from the allative case and this origin is explained by the ergative hypothesis.

Finally, the comparison between pre-PIE and PU confirms that PIU lexicon did not include the relative pronoun **h₁iō-*, and that the PU deictic pronoun **i-* is not directly comparable with pre-PIE **h₁e* but rather with its absolutive case **h₁i*, and this interpretation is supported by the fact that PU **i-* is not anaphoric, just as the evolutions of pre-PIE **h₁i* were not anaphoric, but rather deictic.

6 References

- BEEKES, ROBERT S. P. (1969), *The Development of the Proto-Indo-European Laryngeals in Greek* (Vol. 42). Boston. De Gruyter.
- BEEKES, ROBERT S. P. (1983), On laryngeals and pronouns. *Zeitschrift für vergleichende Sprachforschung (KZ)* 96, 200-232.
- BEEKES, ROBERT S. P. (1988), The pronominal genitive singular in Germanic and Proto-Indo-European. *Beiträge zur Geschichte der deutschen Sprache und Literatur* 110, 1-5.
- BEEKES, ROBERT S. P. (2010), *Etymological dictionary of Greek*. Leiden. Brill.
- BEEKES, ROBERT S. P. & DE VAAN, MICHIEL. (2011), *Comparative Indo-European linguistics: An introduction*. Philadelphia. John Benjamins Press.
- BJØRN, RASMUS G. (2016), *Impersonal pronouns – a systematic approach to Indo-Uralic Phonology*.
- BJØRN, RASMUS G. (2019), Pronouns and Particles: Indo-Uralic Heritage and Convergence, in *The Precursors of Proto-Indo-European* (30-49). Leiden: Brill.
- BRAUNE, WILHELM & REIFFENSTEIN, INGO (2004). *Althochdeutsche Grammatik I: Laut- und Formenlehre*. De Gruyter.
- BURROW, THOMAS (1973), *The Sanskrit language*. London. Faber and Faber.
- CASTILLEIRO, CARLOS G. (2013), Old Irish Tonic Pronouns as Extracausal Constituents, in *Ériu* Vol 63, 1-39.
- DEMIRAJ, SHABAN. (1993), *Historische Grammatik der albanischen Sprache*. Wien: Verlag der Österreichischen Akademie der Wissenschaften.
- DERKSEN, RICK (2008), *Etymological Dictionary of the Slavic inherited lexicon*. Leiden. Brill.
- DERKSEN, RICK (2015), *Etymological Dictionary of the Baltic inherited lexicon*. Leiden. Brill.

- DUNKEL, GEORGE (2014), *Lexikon der indogermanischen Partikeln und Pronominalstämme*. Heidelberg. Universitätsverlag Winter.
- FORTSON, BENJAMIN (2004), *Indo-European language and culture: An introduction (Blackwell textbooks in linguistics; 19 094877939)*. Malden. Blackwell.
- GAMKRELIDZE, THOMAS V. & IVANOV, VJACESLAV (2010), *Indo-European and the Indo-Europeans: A Reconstruction and Historical Analysis of a Proto-Language and Proto-Culture*. Reprint 2010.
- GIANNAKIS, GEORGIOS K. (2013), *Encyclopedia of ancient Greek language and linguistics*. Leiden. Brill.
- GOEDEGEBUURE, PETRA (2003), The Hittite 3rd person/distal demonstrative *asi* (uni, eni etc.). *Die Sprache – Zeitschrift für Sprachwissenschaft* – Band 43 Heft 1.
- GOEDEGEBUURE, PETRA (2007), *The Hieroglyphic Luwian demonstrative ablative-instrumentals *zin* and *apin**. Chicago.
- GOEDEGEBUURE, PETRA (2015), *The Hittite Demonstratives (1st ed.)*. Wiesbaden. Harrassowitz.
- KAPOVIĆ, MATE (2017), *The Indo-European languages*. New York. Routledge.
- KLOEKHORST, ALWIN (2008), *Etymological dictionary of the Hittite inherited lexicon*. Leiden. Brill.
- KLOEKHORST, ALWIN (2012), Pronominal morphology in the Anatolian language family. *Altorientalische Vorschung*, Akademie Verlag, 39, 2, 254-264.
- KLOEKHORST, ALWIN (2012b), The Phonological Interpretation of Plene and Non-Plene Spelled *e* in Hittite, *The Sound of Indo-European. Phonetics, Phonemics, and Morphophonemics* (edd. B. Nielsen Whitehead et al.), 243-261.
- KLOEKHORST, ALWIN, & PRONK, TIJMEN (2019), *The Precursors of Proto-Indo-European*. Boston. Brill.

- KROONEN, GUUS (2013), *Etymological dictionary of proto-Germanic*. Leiden. Brill.
- KORTLANDT, FREDERICK (1983), Demonstrative pronouns in Balto-Slavic, Armenian, and Tocharian. *Studies in Slavic and General Linguistics 3: Dutch contributions to the 9th international congress of Slavists: Linguistics*, 311-322.
- KORTLANDT, FREDERICK (2002), *The Indo-Uralic verb*. In: R. Blokland; C. Hasselblatt (eds.), *Finno-Ugrians and Indo-Europeans: Linguistic and Literary Contacts*. Maastricht: Shaker, 217–227.
- KORTLANDT, FREDERICK (2010), *Studies in Germanic, Indo-European and Indo-Uralic*. Amsterdam. Rodopi.
- LEHMANN, WINFRED (2014), *A Grammar of Proto-Germanic*. Posthumous online publishing.
- MARTÍNEZ GARCÍA, FRANCISCO J., DE VAAN, MICHIEL A.C. and SANDELL, RYAN (2014), *Introduction to Avestan*. Leiden. Brill.
- MATASOVIČ, RANKO (2009), *Etymological Dictionary of Proto-Celtic*. Leiden. Brill.
- MARTYROSAN, HRACH K. (2009), *Etymological dictionary of the Armenian inherited lexicon*. Leiden. Brill.
- MAYRHOFER, MANFRED (1986), *Etymologisches Wörterbuch des Altindoarischen*. Heidelberg: Winter.
- MELCHERT, CRAIG (1994), *Anatolian historical phonology*. Leiden. Brill.
- MELCHERT, CRAIG (2009), 'Deictic Pronouns in Anatolian' *East and West: Papers in Indo-European Studies*, 151-161.
- OREL, VLADIMIR (1998), *Albanian Etymological Dictionary*. Leiden. Brill.
- OREL, VLADIMIR (2000), *A Concise Historical Grammar of the Albanian Language*. Leiden. Brill.
- SCHRIJVER, PETER (1997), *Studies in the history of Celtic pronouns and particles*. Maynooth.

DE VAAN, MICHIEL (2008), *Etymological dictionary of Latin and the other Italic languages*. Leiden. Brill.

DE VAAN, MICHIEL (2012), Reduplicated Demonstrative in Ancient Indo-European Languages, in *Philological Society* Volume 113:1 (2015) 38–52.

VAILLANT, ANDRÉ (1936), L'ergatif indo-européen, in *Bulletin de la Société de Linguistique de Paris* 37 (93-108).

WEISS, MICHAEL (2009), *Outline of the historical and comparative grammar of Latin*. Ann Arbor. Beech Stave Press.

WILLI, ANDREAS (2018), *Origins of the Greek Verb*. Cambridge: Cambridge University Press.

WODTKO, DAGMAR S. (2003), *An outline of Celtiberian Grammar*. Freiburg.