

# Are Latin *pons*, *pontifex* and the Indo-European cognates evidence of an *i* stem?

Filip De Decker  
Universiteit Hasselt  
Belgium  
filipdedecker9@gmail.com

Sanskrit *panthāh*, Avestan *panthā*, Old Persian *paθim*, Latin *pons* (and its compound *pontifex*), Greek *πόντος* and *πάτος*, Armenian *hun* (genitive *hni*), Old Church Slavic *ponth*, Old Prussian *pintis* cannot easily be reconciled into one single paradigm and, consequently, the exact reconstruction is debated. It has been argued that the Indo-Iranian, Latin, Armenian and Balto-Slavic forms are evidence for an *i* stem, either original (Schmidt, Bezenberger, Hirt e.a.) or of secondary and laryngeal origin (Beekes, Schrijver). Starting from the two different "*i* reconstructions" this article re-examines the Latin, Greek and Indo-Iranian cognates, and tries to account for the evolutions in the different languages. We agree with Beekes, Schrijver and De Vaan in that the Latin nominative is problematic and the Armenian form corresponds perfectly to a reconstruction *\*pontH*. In addition, we believe that also the compound *pontifex* and the Scythian name Παντικαπηης fit into this schema. However, we have our doubts as to the paradigm with a nominative *\*Hs* and an accusative *\*eHm*, find the independent innovation in Sanskrit and Avestan less likely, and consider the Old Persian form *paθim* not conclusive, because it is a back-formation on the nominative and especially in light of the Scythian name Παντικαπηης, which raises some questions as to the exact Iranian treatment of the Proto-Indo-Iranian cluster *\*nth*. We therefore believe that the original reconstruction *\*ponteh<sub>s</sub>* (made by Pedersen in 1926) still has preference, despite the problems that it poses for Latin.\*

---

\*We would like to thank Mark Janse and Wolfgang De Melo (Universiteit Gent), Eric Pirart (Université de Liège), Reyes Bertolín Cebrián (Calgary), Michael Weiss (Cornell), Lucien Van Beek (Leiden), and Michael Meier-Brügger (FU Berlin) for their assistance, useful references comments and insights on this article, and Lesley Annette Bolton (Calgary) and Mario Salens and David Langendries for correcting our English. It goes without saying that we alone are responsible for any

### Reconstruction 1: the *i* is of Indo-European origin

The first theory is that of Schmidt (1885:370-374), Hirt (1895:249, 1921: 39,55-56, 1927:75-76,102),<sup>1</sup> Bezenberger (1908b), Reichelt (1901:267, 1909:156) and Kent (1953:30,52,61) who argued that the Sanskrit case forms *pathibhih*, the compound *pathikṛt* (first pointed out by Kuhn 1855:75), the Old-Persian *paθim*, the Latin genitive plural *pontium* and the Balto-Slavic forms were evidence of the fact that the original Indo-European paradigm contained an *i*. In addition, the Latin compound *pontifex* (Meringer 1890:23) and the Armenian genitive *hni* were adduced as proof for the *i* stem, but especially Bezenberger (1908a:96-97) opposed the link with the Latin form *pontifex*. Schmidt assumed a root with a lengthened grade *\*ponthōi-* in the nominative and accusative singular and a zero grade *\*pnthi-* in the oblique cases. He argued that the languages with an apparent *i* stem generalised the zero grade while Indo-Iranian preserved the original ablaut patterns. He assumed that Greek initially also preserved the ablaut but later simplified the declension by creating two different declensions, namely *πόντος* and *πάτος*. *Πόντος* was based on the nominative singular, but lost the *i* element, added a nominative *s* and shortened the vowel, *πάτος* was a back creation on the oblique cases. As such, the evolution from PIE into Greek would have been the following: *\*ponthōi* lead to *\*ponthō* which created *ponthōs* with an analogical *s* to indicate the nominative masculine singular as had happened in Sanskrit and then yielded *\*ponthos* which finally became *πόντος*. To prove that evolution from *os* into *os* in the nominative singular was not uncommon in Greek he pointed at the doublets *κάλως* and *κάλος* and the second declension plural forms such as *κάλους* (which can be found in Odyssey 5,260 and Herodotos; LSJ quotes a nominative plural in *ως* for Attic). Meillet-Vendryès

---

shortcomings and errors in this article.

<sup>1</sup>Hirt (1895:249) catalogued *manthās* as an *i* stem and since the declensions of *manthās* and *panthās* are similar, we can assume that he considered *panthās* to be an *i* stem as well. He explicitly stated this in his *Indogermanische Grammatik* III.

(1948:477-481) agreed with Schmidt that *pathibhih*, *pontb* and *pontium* pointed to an *i* stem and that the *i* in the nominative already disappeared in PIE but did not discuss the specifics of the Greek nouns, and only mentioned the Greek cognates to point at the evolution of PIE *\*t<sup>h</sup>* into Greek  $\tau$  (1948:57). Bezzenberger (1908b) explained the nominative *panthāh* as the result of *\*panthais*. He considered the Sanskrit roots *path-*, *pathay-* and *panthan-* and the use of the Avestan root *pant-* in the oblique cases and root *paθ-* in the strong cases as analogical extensions based on reinterpretation of different case forms.

### Reconstruction 2: the *i* stem is of laryngeal origin

In his 1985 work on the origin of the nominal declension (1985:38) and in a short article in 1989 Beekes argued for an *i* stem which was originally of a laryngeal nature (against his assumptions in 1969, 1972, 1988, 1995 and 2010).<sup>2</sup> He suggested a paradigm *\*ponth<sub>1</sub>s* in the nominative, *\*ponteh<sub>1</sub>m* in the accusative and *\*pnth<sub>1</sub>es* in the genitive. This was based primarily on the Old Persian form *pθim* and the Latin nominative *pons*. Beekes' reconstruction would have created the following Proto-Indo-Iranian declension: *\*panthHs*, *\*pantaHam*, *\*pathHas* leading to a Proto-Sanskrit declension *\*panthis* *\*pantām* *\*pathas*, with the aspiration being generalised throughout the entire paradigm. The most convincing piece of evidence for Beekes was the Old Persian form *pθim*, which in his opinion stood for *panθim*. He stated that interconsonantal laryngeals disappeared in Iranian and therefore assumed that this form could not be a direct continuation of a form *\*pontHm*. He argued that this accusative was a back-formation from the nominative *\*panthi* which led to this noun being transferred to the *i* stems. In a later stage both Sanskrit and Avestan would have replaced independently from each other the nominative by a form with the same vocalism as the accusative, and as such the original *\*panthis* would have been replaced by *panthās*. Additional evidence for the existence of a root *\*pontH* in at least one (Indo-)Iranian

---

<sup>2</sup>In 1969 and 1972 he argued for a reconstruction *\*pontēh<sub>1</sub>s* and in 1995 and 2010 he argued for *\*ponteh<sub>1</sub>s*.

language is the Scythian name Παντικαπης "fish road" (not quoted by Beekes, but discussed in Mayrhofer 2006:14-15). As such this name proves that not only the forms \**ponteH* and \**pntH* were used in Indo-Iranian, but also a form \**pontH* was in use because otherwise the name would have been \* Παντακαπης (if based on \**ponteH*) or \* Παθικαπης (if based on \**pntH*). Mayrhofer (2006:14-15) used this form as additional evidence for the ablaut in the Indo-Iranian and Indo-European paradigm of this noun, and the laryngeal aspiration in Iranian, but did not discuss the issue of an *i* stem declension.

For Slavic Beekes assumed that the form \**ponteh<sub>1</sub>m* lead to the accusative form *pontb*, which created the *i* declension (which had already been argued by Pedersen 1926:54), and this reconstruction was adopted by Derksen (2008:417-418). For Armenian Beekes argued that the sequence \**eh<sub>1</sub>* of the accusative evolved into *i* and subsequently created an *i* declension.

For Latin Beekes, followed by Schrijver (1991:371) and De Vaan (2008:479-480), suggested \**ponth<sub>1</sub>s* as the basis for Latin. The paradigm as proposed by Pedersen (cf. infra) posed a serious problem with respect to the nominative singular. Pedersen reconstructed PIE \**ponteh<sub>1</sub>s* and this would have given \**pontēs* in Latin. Latin has nouns with a long *e* and it is difficult to explain why this noun would have disappeared and been replaced by *pōns*. Therefore, they proposed the following Indo-European and Proto-Latin declension:

nom. sg.	PIE * <i>ponth<sub>1</sub>(s)</i>	Proto-Latin * <i>pontas</i> or * <i>ponts</i>
acc. sg.	PIE * <i>ponteh<sub>1</sub>m</i>	Proto-Latin * <i>pontēm</i>
gen. sg.	PIE * <i>pnth<sub>1</sub>es</i>	Proto-Latin * <i>pontes</i>

This Proto-Latin paradigm underwent the effects of the strong initial stress and the shortening of long vowels before the final *m*. This would have given the accusative *pontem* (with short *e*) and the genitive *pontis*. These two forms would have facilitated the transition to the nouns with a *ti* suffix. If the laryngeal disappeared in the cluster \**th<sub>1</sub>s* (which Schrijver did not rule out), the attraction to the *ti* suffix nouns would even have been easier.

Beekes argued that the Greek evolution into a

thematic stem could not be explained but considered the transformation "trivial". In his 2010 dictionary he reconstructed *\*ponteh<sub>1</sub>s* for PIE but did not elaborate on the specifics for Greek. Hamp (1953:137) had already noticed that Greek thematised this noun. Much earlier (before the laryngeal theory) Ciardi-Dupré (1901:215-222) had already doubted that Greek *πόντος* and Latin *pons* descended from the same paradigm as Sanskrit and Slavic because of the declension and the root. He started from a thematic noun *\*pontos* (which was taken over by Boisacq 1937:803 without mentioning Ciardi-Dupré, and which had already been suggested by Froehde 1883:125, who included the Slavic and Indic words and Greek *πάτος* but excluded *πόντος*) and assumed that syncope in Latin had led to the creation of the noun *pons*, with the genitive plural and the syncope of the nominative singular being the driving force to transfer the entire declension of this noun into the *i* stems.

### Critical assessment of the two theories

With regards to Schmidt's reconstruction we believe that his explanation for the Greek nominative *πόντος* might be problematic for several reasons:<sup>3</sup> firstly, the Greek nouns going back to PIE *\*ōi* stems are feminine, secondly they never lose their *i* completely as can be seen in older nominatives such as *λεχῶι* and *Συφῶι* (Meillet-Vendryès 1948:480; Smyth 1956:71, Buck 1955:92-93),<sup>4</sup> thirdly they do not use a nominative marker *s* (Meillet-Vendryès 1948:480) and fourthly they do not shorten the stem vowel in the nominative. Fifthly, masculine nouns in *ωs* also exist outside the Attic declension, as can be seen in inherited forms such as *πάτρως* and *μητρως*, which renders the idea of a mere shortening of *ωs* less likely, although these forms can also be explained as analogical reformations from the accusative.<sup>5</sup> Nevertheless, it has to be said that if these

<sup>3</sup>We discuss the value of the Sanskrit examples later in this article.

<sup>4</sup>We cannot discuss the theory of Schmalstieg (and Pirart, in a personal communication) that the nominative singular had a long vowel because it lost a resonant or a laryngeal at the end of the word. In that theory Sanskrit *devi* has a long *i* because the laryngeal has fallen out and *homo* has a long *o* because the *n* has been dropped.

<sup>5</sup>Hirt (1921:56) considered the Greek *πόντος* to be a reformation on an

feminine stems have a (rare) plural, the forms are from the second declension (Smyth 1956:71-72).

We believe that there are some remarks to make about Beekes' reconstruction. Firstly, there is the question as to why the nominative would have been in *\*Hs* and the accusative in *\*eHm*. This type is not very common (there are no examples of it in Greek nor Latin), and poses problems for both the Greek and the Indo-Iranian declension (cf. infra). Secondly, there is the question of the disappearance of the Latin nominative *\*ponta*. Latin had masculine nominatives in short *a* such as *agricola* (and according to Festus –quoted in Lindsay 1894:371-373 and De Saussure 1909- also forms such as *hosticapas* ad *paricidas*)<sup>6</sup> and therefore the question is why this word added a nominative *s* and syncopated the final syllable.<sup>7</sup> De Saussure (1909, quoted in Bally-Gautier 1922:585-594) showed that masculine nouns ending in *\*Cs* and *\*CHs* did in fact influence each other, and that the masculine *ā* nouns were only later on transferred into the feminine *a* stems. Evidence of this was the genitive plural in *um* (and in our opinion also the doublets *-capas* and *-ceps*).<sup>8</sup> In addition, one could argue that nouns of the *agricola* type referred to persons and originated from *\*(e)h<sub>2</sub>* whereas this noun referred to a thing and originated from *\*h<sub>1</sub>*.<sup>9</sup> Against these last two elements one could argue that the nouns of the *agricola* type were in origin abstract nouns (Lindsay 1894:371 and Weiss 2009:227) and that the three Indo-

---

older accusative *\*pontōm*.

<sup>6</sup>We owe the reference to Lindsay to Wolfgang De Melo (p.c.). The exact passage (Paulus Festus 278.10) can be found in Lindsay (1894:371): *siqui hominem liberum dolo sciens morti duit, paricidas esto*. Festus is also quoted in Weiss 2009:227.

<sup>7</sup>We cannot discuss the question whether these masculine nouns had added the *s* already in Indo-European times. Lindsay 1894:373-374 pointed out that these nouns had added the *s* in Oscan and Umbrian as well (without the shortening of the *a*). The issue is mentioned in Weiss 2009:227. It could be a Graeco-Italic isogloss, an independent innovation or an inherited feature of Indo-European. The first option seems to be excluded because not all Greek dialects shared this "innovation".

<sup>8</sup>Lindsay did not treat this issue and De Saussure wrote his article after Lindsay, but the similarities between *capas* and *ceps* were already noticed by Lindsay 1894:371 although he considered the form *capas* to be "strange".

<sup>9</sup>The issue of exact laryngeal will be dealt with later in this article.

European laryngeals merged into *a* in Proto-Italic if not followed or preceded by another vowel, and that *\*ponth<sub>1</sub>* and *\*ponth<sub>2</sub>* would have given *\*ponta* anyway.

The Iranian forms pose more problems, if we start from the reconstruction *\*pontHs* for the nominative and if we reconstruct *p[an]θim* for Old Persian. If we accept Beekes' reconstruction for Old Persian, it would mean that the Proto-Indo-Iranian cluster *\*nth* was not deaspirated in Proto-Iranian. This had long been assumed because of the Avestan form *pantā* (Bartholomae 1883:47 and 1889:9-10, Pedersen 1926:54-56, Reichelt 1927:36-37 and later also Elbourne 1998, 2000 and ftc.) which was supposed to continue PIE *\*pont<sup>h</sup>o* : the laryngeal theory made it clear why the strong cases had no aspiration as those forms did not have a cluster *\*tH* out of which a secondary voiceless aspirate could arise. In addition, there was an Iranian counter-example, namely the form *zathā*, which was already pointed out by Kuryłowicz (1927:22, 1935:47).<sup>10</sup> In that case

---

<sup>10</sup>The issue cannot be discussed in detail here, but the evidence of the Avestan paradigm is very important. Before the discovery of the laryngeal theory it was believed that the PIE form was *\*pont<sup>h</sup>ós*, which preserved its aspiration in Sanskrit but lost it in Avestan and Greek. In order to explain the loss of aspiration in Avestan, a "sound law" was devised that stated that Indo-European *\*t<sup>h</sup>* became *t* in Avestan, if preceded by *s* or *n*. There were several examples of *s* but only one example of *\*t<sup>h</sup>* being preceded by *n*. Moreover, there was an exception to this rule, namely the Avestan word *zathā*. In order to account for this exception, Bartholomae first assumed that the form *zathā* was a mistake in the tradition (*Arische Forschungen* II:158- non vidi) but later recanted this and tried to explain the Iranian *zathā* as the result of an analogical levelling based on the oblique cases (1889:9-10). The laryngeal theory has shed some new light in the discussion because the difference in consonantism could not be explained by assuming a root *\*pont<sup>h</sup>* but Pedersen (1926:54-56), to whom the explanation of this paradigm goes back, believed that the laryngeal aspiration had already been spread analogically in Proto-Indo-Iranian times. The problem is that there are only two other examples that can be used in this discussion, and both can be explained as the result of analogical levelings (this was already pointed out by Hamp 1953:136). As Michael Weiss (p.c.) points out, the suspicion of Pedersen does not mean that the original distribution was not preserved into Iranian, but only makes it inconclusive, if the assumptions of Bartholomae and Pedersen were correct to start with. He also pointed at Avestan *zathā*. Elbourne (1998) tried to refute the evidentiary value of this form. Heiner Eichner assured us during the discussion of the Conference *Greek and Latin from an Indo-European Perspective* (GLIEP) 3 that the assumptions of Reichelt

the Avestan paradigm would have replaced *\*panthi* by *pan̄tā* with the consonantism of the accusative as well, and would have preserved the accusative in the paradigm as the sole form with a non-aspirate against the other forms with an aspirate. Moreover, the Old Persian form is an accusative and would not be correct according to Beekes's own reconstruction. The accusative in Proto-Indo-Iranian was *\*pantaHm* which cannot have given *p[an]θim* but would have evolved into *\*pantām*. One has to assume that the Old Persian nominative in *i* influenced the original Old Persian accusative and replaced the form by an accusative in *im*. Beekes argued that the interconsonantal laryngeals are dropped in Iranian and that a form *\*pontHm* could never yield *p[an]θim*, which means that in his reconstruction the nominative cannot have had an *s* because otherwise it would have lost the laryngeal as well. Also in his reconstruction Avestan and Sanskrit would have lost an original nominative under influence of the accusative whereas Old Persian would have lost the original accusative form under the influence of the nominative. We find it nevertheless difficult to see why such an ablauting paradigm would have kept the distinction between the weak cases and the accusative but not that between the nominative and accusative. Moreover, the evidence of the Old Persian form *p[an]θim* is in our opinion not conclusive. The exact vocalisation is debated: the Old Persian script did not write the vowels and the cluster *anta* was usually written as *a ta* (Meillet 1915:39), so it is difficult to account for the exact reading of this form. The form can also have been *p[a]θim* (which is the commonly used reconstruction, see Meillet 1915:54 and Kent 1953:30,52) and in that case we are dealing with a zero grade, which is the normal grade for *i* and *u* stems in the nominative and accusative (Meillet 1915:163). The Scythian name also casts some doubts on Beekes' reading of *p[an]θim*. As we argued above, the

---

and Bartholomae were wrong, and that the distribution of the Avestan paradigm had to be considered original. An additional problem is the Greek absence of aspiration in this noun (the problematic nature of this Greek absence was already noticed by Grassmann, Brugmann and Wackernagel) but the presence of aspiration in *μόθος*. We hope to come back to this at another occasion.

Scythian form has to be reconstructed as *\*pontH-* and because in that form the laryngeal came in direct contact with the voiceless plosive, one expects a voiceless aspirate of secondary laryngeal nature in Proto-Indo-Iranian, which would become a fricative in Proto-Iranian. Therefore we would expect Πανθικαπηης, but the Scythian form has no fricative. As such, this form seems to indicate that Proto-Iranian did in fact deaspirate the Proto-Indo-Iranian cluster *\*nth*. On the other hand, one has to discuss how the Scythian names were transcribed into Greek. If the Scythian dental fricative were always rendered by Greek τ, this would seriously decrease the evidentiary weight of this instance. There is a king's name Ατεας which is sometimes linked with Avestan *Haθia* or Young Avestan *āθβuia*. As such, it indicates that Greek rendered the Scythian (and Iranian) fricative by *t* but the name can also be linked with Vedic *atya*, in which case it would be a "normal" correspondence (all suggestions are from Mayrhofer 2006:19). Zgusta (1955:221-223, 246) pointed out that an Iranian θ was rendered by either τ or θ in Greek.<sup>11</sup> As such, the Scythian form is less convincing. Mayrhofer (2006:14-15) argued that this name proved that the form *παντι-* was additional evidence for the fact that Iranian preserved the distinction between plain voiceless plosive and voiceless aspirate, contrary to Indic where the laryngeal aspiration was analogically spread to those forms where it was not etymological. This remains to be seen, however. If *παντι* preserved the original situation and the *t* referred to an original *\*t*, the reconstructed form would have to be *\*ponteH-*. In that case, the *i* is problematic, because PIE *\*e/oH* normally does not yield *i* in Iranian. We therefore believe that this form is a back-formation on the zero grade (as is Greek *πάτος*). In that case, the evidentiary value of *paθim* for an *i* stem would be lessened by the fact that the noun has the zero grade and not the full grade. As such this form cannot be a direct descendant of *\*ponteH*, as the accusative singular is a strong case. We therefore think that the Iranian branch on the one hand generalised the root

---

<sup>11</sup>We owe this reference to Michael Weiss (p.c.).

\**ponteH* as can be seen in the Avestan ablative *pantat* and, on the other hand, created a noun on the root \**pntH* as well, as can be seen in the Avestan (feminine) accusative *paθam* (coming from \**pntHeh<sub>2</sub>* - this Avestan form was quoted in Jackson 1892:91-92). With regards to the Old Persian form we agree with Mayrhofer-Brandenstein (1964:140) who assumed that the Old Persian form was a secondary innovation and that the *i* had no direct connection with the inherited form \**pntə*, but we nevertheless believe that this noun was built on the zero grade \**pntH*.

With regards to the Armenian forms *hun* and *hni* there are some problems as well, but these are not confined to Beekes' reconstruction. Bugge (1893:71-72) argued that the nominative was built without *s* and that this was the driving force behind the declension being transferred into an *i* stem. The disappearance of the cluster \**tH* in this noun is not easily explained. Meillet (1903:16)<sup>12</sup> and Bugge (1893:71-72) argued that PIE \**t* and *t<sup>h</sup>* disappeared at word end (as the laryngeal aspiration was not yet accepted in their days). Martirosyan (2010:426) referred to Armenian *sun* (from PIE \**k<sup>o</sup>mt<sup>h</sup><sub>2</sub>*) to indicate that the cluster \**tH* might have been dropped at word end in Armenian. Hamp (1953:136) reconstructed \**pontni* for Armenian and suggested (with doubts) a possible link between this (proto-)form and the (post R̥gVeda) Vedic forms in *panthan-*, if this form was to be considered old.<sup>13</sup> Martirosyan (2010:426) pointed out that the noun *hun* allowed no certain judgement on the exact declension class, and that the Latin and Balto-Slavic forms were not conclusive either to prove a root \**ponti*. The evolution \**eh<sub>1</sub>* > *i* in Proto-

---

<sup>12</sup>Meillet made this assumption already in MSL 7(1892), but we were unable to consult this article.

<sup>13</sup>Bartholomae (1888:76) noticed that the stem *pant(h)an-* was used in both Sanskrit and Avestan, but he added that this was not necessarily an indication for the original state. Brugmann (1876a:287,309) reconstructed \**panthanm* as predecessor for Sanskrit *panthām* and assumed that \**panthan-* was the original Proto-Indo-Iranian stem. As such, Brugmann assumed an evolution \**VNm* into \**v̄m* (with *N* being any nasal), which makes him (partial) founder of Stang's Law. For Sanskrit it is assumed that the *-an-* from the stem came from the synonym *adhvan*, (Renou 1952:206-207, Mayrhofer 1978:54) but this cannot be said for Avestan. The issue has to remain outside the scope of this article.

Armenian seems to be confirmed by the facts. If there was a sound law PIE  $*tH\# > \emptyset$  in Proto-Armenian, this would be an additional argument in favor of Beekes' reconstruction  $*pontH$  for the PIE nominative. As such, the Armenian evolution appears probable but we have some doubts about the fact that the accusative form was the leading factor to transfer this noun into the *i* stems.

The Tocharian forms also exclude an inherited *i* stem.<sup>14</sup> The Tocharian B compound *amäkpänta* "wagon chief" is a reflex of PIE  $*pntH-$  and Tocharian A *mapanti* "army chief" both point to an *o* stem (which of course does not necessarily prove that the PIE word was an *o* stem): the Tocharian B form is built on  $*hamaks-pntHos$  (Adams 1984, 1999:19) whereas the A form seems to be  $*ma-pont(H)-os$ .

With regards to the Greek "trivial" change of an laryngeal stem into an *o* stem, we assume that Beekes (1989:7) meant that Greek changed the complex declension into a thematic declension. The thematisation of an irregular paradigm is easy to understand, although it is difficult to predict which declension would have been simplified and which one not. If we accept that the Greek nouns are indeed thematisations, they have no bearing in this discussion as they could be formed on  $*pont(h_1)os$  and  $*pnt(h_1)os$ . With regards to Ciardi-Dupré's suggestion of a Graeco-Latin formation  $*pont-o-s$ , we would like to point out that his suggested syncope of the Latin form would be remarkable for two reasons: firstly, there are words in *entus* (such as *violentus*) but they did not undergo this syncope and secondly, it seems unusual to us that a noun would shift from a very common declension to a less common and more complicated one, because Latin usually has the opposite shift as can be seen in the thematic nouns *humus* and *aurōra* from nouns with ablaut in root and suffix. Syncope in the second declension is only attested with certainty in the nouns and adjectives in  $*eros$  and  $*ulos$  (such as *puer* and *famul*). Ciardi-Dupré's explanation for Greek seems to be generally accepted nowadays,<sup>15</sup> as the

<sup>14</sup>We owe this reference to Lambert Isebaert and to one of the anonymous referees of the journal.

<sup>15</sup>Of course without the laryngeal as in those days the laryngeal theory was *in statu nascendi* and hardly accepted at all. Unfortunately Ciardi-Dupré is almost never credited with this reconstruction (he is quoted in

word is now normally considered to be a τóμος noun, i.e. originating from *\*pont(H)-o-s*. We agree with Ciardi-Dupré that the Greek nouns look different from the Baltic and Indo-Iranian forms, but the Slavic and Latin ones are similar and moreover we find it hard to explain why perfectly regular nominatives such as *\*pontus* and *\*fontus* would have been replaced.<sup>16</sup>

We now analyse the evidence for an *i* stem in the Latin noun *pons*.

### Evidence for an *i* in Latin *pons*

Two elements are used to prove that *pons* was an *i* stem in Latin:

a) its genitive plural ends in *ium*: *pontium*. This was already pointed out by Schmidt (1885:370). The genitive plural is generally considered to be the best indication to check if a Latin noun or adjective is an original *i* stem (Lindsay 1895:51-54; Meillet-Vendryès 1948:460-462; Risch, quoted in Untermann 1992:139). The original nominative *pontis* became *pons* by the effects of the strong initial stress in proto-Italic.<sup>17</sup>

b) the second element is the compound *pontifex*. Several modern scholars (Meiser, De Vaan, Weiss) see this form as additional evidence for the Latin *i* stem in *pons*. Nowadays it is no longer accepted that the *i* was of PIE date, but is considered a Latin innovation, and, as a consequence, *pontifex* is usually reconstructed as *\*ponti-faks* (De Vaan 2008 s.u. *pontifex*). Neither Schmidt nor Bezenberger used this form as evidence for the Indo-European heritage of the *i* stem. Bezenberger (1908a) even explicitly rejected the connection between *pons* and *pontifex* and linked, with

---

Walde and Walde-Hoffmann, but not in later etymological dictionaries such as Boisacq, who mentioned his suggestion but not his name, Pokorny, Frisk, Chantraine or Beekes-Van Beek).

<sup>16</sup>There is a Latin word *pontus* but this is generally considered a loanword from Greek (as is argued by the etymological dictionaries of Walde and Ernout-Meillet). Michael Weiss (p.c.) adds that this word is never found in Plautus or Terence and only occurs in prose as of Livy, who was known to use a poetic language.

<sup>17</sup>These reconstructed forms have to be distinguished from the nominatives in Late Latin such as *noctis*, *pontis*, *mentis* etc. that can be found in the *Appendix Probi* and that are the basis of the Italian nominatives of the type *notte*, plural *notti*.

Walde (1905:598-599), the word with the Sabellic *puntes*. The meaning of that word was not certain but it was linked with Latin *quinque* in which case *pontifex* would then mean "belonging to the council of the five priests".<sup>18</sup> The link between *pontifex* and Sanskrit *pathikṛt* was already made by Kuhn (1855:75) followed by Herbig (1916:216), noting that they agreed in meaning, but without pronouncing himself on the original declension.

We now discuss the weight of these arguments.

### Assessment of the evidence for an *i* stem in the declension of *pons*

We believe that both arguments in favor are not conclusive. In our opinion the evidentiary weight of the genitive plural in *ium* is limited because the exact circumstances in which *um* or *ium* appeared, were already unclear in Antiquity.<sup>19</sup> Even Lindsay (cf. supra- 1895:54), who stated that the genitive plural was the most reliable indication of an *i* stem, noticed that forms such as *panium* (where there is no *i* from an historical point of view) and *partum* (where there seems to be evidence for an historical *i* stem) coexisted. Moreover, there are many nouns that historically never had an *i* in their declensions that still display a genitive plural in *ium* such as the present participles in *nt* (although the genitive form could be due to influence of the feminine forms in *\*ih<sub>2</sub>* of the active participle: in that case the feminine genitive *\*-ih<sub>2</sub>om* would have spread to the masculine forms),<sup>20</sup> the nouns *nox*, *dens* and the nouns in *-tāt-*, for which the comparative evidence of Greek and Sanskrit has no trace of any *i*: Greek has *φέρων*, *φέρουτος* next to Latin *ferens*, *ferentis*, and *νεότης*,

---

<sup>18</sup>Other suggestions, including the ones that did in fact link *puntes* with *pons*, can be found in Untermann 2000:608. Untermann himself thinks that the Sabellic has to be linked with "five", but does not pronounce himself on the issue of *pontifex*.

<sup>19</sup>Untermann (1992:139) argued that the "classification" of the genitive plurals was still in progress in Classical Latin and that, consequently, there was still a lot of confusion. Weiss (2009:246, footnote 23) quotes a passage from the Latin grammarian Varro, *De Lingua Latina* 8,38 in which Varro mentioned the unpredictability of the Latin genitive plural. This means that already in I<sup>a</sup> the exact rules of the genitive plural were no longer clear.

<sup>20</sup>We owe this reference to one of the anonymous referees of the journal.

νεότητος next to Latin *novitas*, *novitatis*. In addition, the forms *civitatium* and *civitatium* occur besides each other (Kühner-Stegmann 1879:211), just as the forms *ferentum* and *ferentium*, *mensum* and *mensium* (Meiser 1999:140-141). Ernout-Meillet (1948:460-462) agreed with the assumption that the genitive plural is the best indication for an *i* stem, but pointed out that the mutual influence of consonant stems and *i* stems is widespread. We would like to add to this that in the accusative singular, the genitive singular, the ablative singular, the nominative plural, the accusative plural and the ablative-dative plural the consonant stems and the *i* stems influenced one another to a very large extent (Bammesberger 1984b:87-88; Untermann 1992:139, Klingenschmitt 1992:113-117; Meiser 1999:139-141 even uses a third category, *Mischflexion*). We therefore are inclined to question the conclusiveness of the genitive plural evidence. In addition to the genitive plural it is sometimes argued that also the accusative singular and ablative singular can prove that a noun is an *i* stem, such as the accusatives *partim* from *pars* (Lucretius 6,384), *piscim* from *piscis* (Praeneste III<sup>a</sup>,<sup>21</sup> the forms are quoted from Klingenschmitt 1992:113) *navim* from *navis*,<sup>22</sup> *tussim* from *tussis*, *puppm* from *puppis* and the ablatives *securi* from *securis*, *imbri* from *imber*, *igni* from *ignis*, *civi* from *civis*, *mari* from *mare* (forms can be found in Meiser 1999:140). In the case of *pons* the argument is based on the form *ponti*, which occurs besides *ponte* (Kühner-Stegmann 1879:181-182) but we believe that the evidence is also in that case too confused to be conclusive because the forms *navem*, *cive* and *mare* are also used, and the accusative *civem* is used almost exclusively, as is the form *pontem*.

Schmidt (1885:371-372; followed by Meillet-Vendryès 1948:480-481) also used the Sanskrit case forms in *i* such as *pathibhih* to prove the Indo-European word had *i* in its oblique cases, and that this was an additional element that proved that *pons* was an *i* stem in Latin. It is not at all

---

<sup>21</sup>A Roman figure refers to a century and an Arabic figure to a date. A small *a* indicates that the year/century is BC while a small *p* indicates that it is AD.

<sup>22</sup>The question whether *navis* is a genuine *i* stem in Latin or a back formation on the genitive singular like *canis* cannot be addressed here.

certain that the Sanskrit form *pañbhīh* continues an *i* stem. Kuiper (1955:91, followed by Mayrhofer 1957:210-211, 1983:120 and 2005:120) argued that the Avestan form *padābiš* effectively ruled out an *i* stem, because Avestan *ə* could not continue an Indo-European *\*i*. The Avestan form *padābiš* goes back to PIE *\*pñth<sub>1</sub>b<sup>h</sup>is*. In Proto-Indo-Iranian the sonantic *\*n* became *a* and this form would have become *\*pat(h)Hbhis*. At that stage the two branches underwent a different evolution: the interconsonantic laryngeal “vocalised” in Proto-Sanskrit and became *i* which creates the form *pañbhīh*, while in Proto-Iranian interconsonantic laryngeals were lost (as can be seen in *duyda* from *\*d<sup>h</sup>ugh<sub>2</sub>tēr* < *\*d<sup>h</sup>ugh<sub>2</sub>ters*)<sup>23</sup> and voiced aspirates lost their aspiration. This led to the creation of the Proto-Iranian form *\*patbis* in which the voiced *b* voices the preceding *t* and creates *\*padbiš*. In that form an *ə* is inserted in the writing, but the pronunciation is still disyllabic and the *ə* is merely graphic (De Vaan 2003:384,448).<sup>24</sup>

To support the Indo-European heritage of the *i* the evidence of the Sanskrit compound *pañhikṛt* “road making” was adduced (Bezzenberger 1908b:384). This form is not conclusive, however, as the Sanskrit *i* does not necessarily represent an Indo-European *\*i* but can also be the reflex of a laryngeal. The Sanskrit form can then be reconstructed as *\*pñth- kṛt* in which the laryngeal vocalised and became *i* and in which the aspiration was extended analogically from those forms where the laryngeal came into contact with the plain plosive and was followed by a vowel (just like the aspiration was extended from the genitive singular into the nominative *pañhāh* and the instrumental *pañbhīh*).

### The creation of the compound *pontifex*

*Pontifex* has a religious meaning “high priest”. As such the link with the noun *pons* might seem less obvious, and

<sup>23</sup>We cannot discuss the idea suggested by Gernot Schmidt (*non vidi*), and Hackstein 2002:5 that this was already of PIE date. Kuiper 1942 assumed that the laryngeal in this paradigm was vocalic in some cases and consonantic in others, and that every language generalised one or the other. Martin Peters fine-tuned the observations of Gernot Schmidt and argued that in PIE *\*CHCC* became *\*CCC* if the accent followed the cluster (Schmidt and Peters were quoted in Mayrhofer 1981b:437).

<sup>24</sup>We would like to thank Eric Pirart for pointing this out.

was not accepted by every scholar (cf. *supra*). But since the other suggestions for *pontifex* are not convincing either, Ernout (1928:217-218) suggested sticking with the meaning that was already used by the Romans themselves, namely “building bridges”. From a semantic point of view this meaning is perfectly defensible. The *pontifex* would originally have been the one who made the roads accessible to walk on and who guided the people on these roads. Since the Romans often had to go through inaccessible and swampy areas, the way to build roads would have been to build bridges. The one who went first, could only be a person of a certain religious stature to appease the gods that could have been residing in those swamps. From the association between the guiding of the people and the religious power of that person, the word obtained the religious meaning and lost the original meaning (Herbig 1916:219, with reference to Mommsen 1856:158; Ernout 1928:217-218; Ernout-Meillet 1948:922-923; Müller-Renkema-Leeman 1969:704).

The origin of the compound *pontifex* was debated from a semantic point of view, but also from a morphological point of view. The noun is generally interpreted to be a compound of *pons*. Two suggestions have been made: the first one uses this compound as proof that *pons* was an *i* stem (either inherited from Indo-European or created in Proto-Latin), and the second theory considers the *i* to be a compound marker. We believe that a comparison with the Sanskrit compound *pathikṛt* can shed some new light on the issue.

The normal reconstruction of this word is *ponti-fex*, in which *ponti* represented the stem and *fex* was the verbal component of the compound.<sup>25</sup> As such, the word proved the *i* stem of the noun *pons*. This assumption was made both by scholars who accepted the Indo-European nature of the *i* (Meillet-Vendryès) and by scholars who thought that the *i* stem was a Latin innovation (Meiser, De Vaan 2008: *s.u.* *pons*, Weiss 2009). There is not much discussion about the reconstruction of *fex* which goes back to *d<sup>h</sup>h<sub>1</sub>k-s*, but with regard to the *i* in this compound, some

---

<sup>25</sup>For a recent analysis of Latin compounds with verbal elements one can refer to Fruyt 2002, especially 269-272.

observations can be made. While it is a long established fact that intervocalic *i* is not necessarily a reflex of an inherited *i* and that any unstressed vowel in an open syllable could have been changed into *i* in Proto-Latin, this has nevertheless not been observed in the compound *pontifex* and the *i* has been accepted by several scholars as an inherited vowel. According to others however, the *i* was a compound marker and had no original link with the stem (Collart 1967:95, Bammesberger 1984b:115). Collart quotes examples such as *somnifer* and Bammesberger gives as an additional example the compound *particeps*, in which he interprets *parti-* as a special “compound case”. One can wonder, however, if *parti* was not the stem of *pars* instead of a compound case. From a synchronic point of view this explanation is correct as there are many words that seem to have this “marker” such as *somnifer*, *aquilifer*, *belligerus*. We believe that the fact that most compounds have an *i* before the second element of the compound is an indication of an internal evolution within Latin (this had already been pointed out by Brugmann 1889:55-56).<sup>26</sup>

When we look at the reconstruction for Sanskrit and the Latin reconstruction, we have two apparent differences. The first one is the ablaut grade of the stem, which is different in Sanskrit and Latin, and the second one is the apparent different origin of the *i* in Sanskrit and the *i* in Latin. In our opinion these differences are not insurmountable and can be explained. The vocalism in Sanskrit is the zero grade which can be explained by a generalisation of the zero grade. In Latin the vocalism of the form *pontifex* has been built on the nominative *pons*. The second difference is that Sanskrit has preserved traces of the laryngeal whereas Latin has not. Interconsonantic

---

<sup>26</sup>Compounds with a short *o* exist but they are in all likelihood created under Greek influence, as has been argued by Brugmann 1889:55-56, Lindsay 1894:364, Leumann-Hoffmann-Szantyr (1977:390) and Fruyt (2002:266), with reference to Leumann. Lindsay 1894:364 argued that *o* before a labial sound could be “genuine relics of the Old spelling” if the word occurs in Old Latin (such as *albo-galerus*, quoted in Paulus Festus 8.6 and Plautus, *Curculio* 445 *Unomammia*, after the name of an Amazon on a Praenestine cippus *Oinumama*) but that they were Greek imitations if the word was of later date. Wolfgang De Melo (p.c.) points out that the Plautine compounds such as *merobiba* (*Curculio*) with an *o* are almost certainly Greek imitations.

laryngeals appear in Latin as *a* as can be seen in *pater* from *\*ph<sub>2</sub>tēr* < *\*ph<sub>2</sub>ters* (Meiser 1999:107, Schrijver 1991:85,97, Fortson 2004:248, Bakkum 2008:58-59, Weiss 2009:96). One would therefore expect *\*pontafex* if Latin were to continue a laryngeal. In our opinion, the vocalism of *pontifex* does not rule out a laryngeal. If we start from the reconstructed form (with original or analogically restored full grade) *\*ponth<sub>1</sub>-d<sup>h</sup>h<sub>1</sub>-k-s* this would have given *\*pontafax* in Pre-Proto-Italic before the effect of the strong Proto-Italic initial stress. The effect of the initial accent affected all syllables that were not under the stress, but there was a different treatment for short and open syllables on the one hand, and for closed and long syllables and diphthongs on the other hand. Every short vowel in an open syllable that was not under the accent, became *i* and all short vowels in a closed syllable became *e* (Dietrich 1852:546-549; Niedermann 1931:2-37, Meiser 1999:67-70, Weiss 2009:116-120). If we apply this initial stress rule to *pontifex* we can explain the vocalism perfectly: in the Proto-Italic form *\*pontafex* the first *\*a* which is short and stands in an open syllable, becomes *i* which is the expected outcome, and the second *\*a* which is short but stands in a closed syllable, becomes *e* which is also the expected outcome. In the case forms, the second *\*a* is no longer standing in a closed syllable but in an open, and therefore becomes *i* which is what happens: the genitive *\*pontafakes* becomes *pontificis*. This evolution is not without parallels in Latin. Many compounds have an *i* that can be explained by the effect of the strong initial stress. Some examples are *novitas* from *\*neuotāts*, *somnifer* from *\*suopnob<sup>h</sup>eros*. The fact that this *i* occurred so often in compounds, might have created the impression in Latin (synchronically) that *i* was a compound maker. The only anomaly left to explain in *pontifex* is the *f* of *fex*: the expected Latin outcome of *\*d<sup>h</sup>* would have been *d* because *\*d<sup>h</sup>* was standing in Inlaut. It is likely that the *f* was restored analogically on the verb *facere* just as the verb *\*\*condicere* was restored into *confacere* by effect of the simplex *facere* (and just like *fer* in *somnifer* was restored on the consonantism of the verb *ferre*).

Besides the form *pontifex* one also finds the form *pontufex* that occurs at the end of II<sup>a</sup> but this is not an indication against either reconstruction. Kent (1932:100)

and later Weiss (2009:117-118) point out that *i* was colored into *u* before labials and that this had nothing to do with the original vocalism in pre-Proto-Italic times. Meiser (1999:68) argues that the reduced vowel *ə*, which he considered to be the result of the strong initial stress, became *\*ü* before labials and that the writing was with either *i* or *u* and that only in Classical times the orthography was determined. He quotes *pontifex* as an example of the coloring of *i* but this is not conclusive as the other vowels became *i* or *u* before labials as well (such *taberna* and *contubernalis*, quoted in Meiser 1999:78).

As such, the compound *pontifex* does not contradict Beekes' suggestion of a nominative *\*pontH* and agrees in composition with the Scythian name ΠΑΥΤΙΚΑΠΗΣ, in their use of the root *\*pontH*.

### The declension and origin of Latin *pons*: Pedersen's reconstruction

In line of what was argued above, we still need to explain the creation of the nominative *pons* and its declension in Latin. In 1893 Pedersen reconstructed the Proto-Indo-Iranian paradigm and in 1926 the PIE forms, which in modern notation would look like this:<sup>27</sup>

nom. sg. <i>*ponteh<sub>1</sub>s</i>	gen. sg. <i>*pnth<sub>1</sub>es</i>	nom. pl. <i>*ponteh<sub>1</sub>es</i>
acc. sg. <i>*ponteh<sub>1</sub>m</i>	gen. pl. <i>*pnth<sub>1</sub>oHom</i>	dat. pl. <i>*pnth<sub>1</sub>b<sup>h</sup>os</i>

If we follow through with his reconstruction, the Proto-Latin declension would have given the following forms:

nom. sg. <i>*pontēs</i>	gen. sg. <i>*pentēs</i>	nom. pl. <i>*pontēs</i>	gen. pl. <i>*pentōm</i>
acc. sg. <i>*pontēm</i>	dat. pl. <i>*pentābos</i>		

Such a paradigm would have been too irregular and anomalous to survive, as it contained elements of several different declensions. The first evolution in our opinion would have been the levelling of the same stem throughout

---

<sup>27</sup>Pedersen did not specify the exact color of the laryngeal and only used the sign *X*. We assume that he meant *\*h<sub>1</sub>* because he suggested that the cluster *eXm* became *\*ēm*. He did not reconstruct the genitive with *\*oHom* either.

the entire declension.<sup>28</sup> As such, the genitive plural and the dative plural would have become *\*pontōm* and *\*pontabos*, and the genitive singular would become *\*pontas*. Then the final *m* of the genitive plural ending would have shortened the long *o* of the genitive plural (and the long *e* of the accusative singular). The next evolution was the effect of the strong initial stress which caused the short *e* of *\*pontes* and the short *a* of *\*pontabos* to become *i* as in *somnifer* from *\*suopnob<sup>h</sup>eros*. The next step was the closing of the final syllables, which would have created the forms *pontibus* and *pontum*. At this stage the paradigm already had the forms *pontibus*, *pontis* and *pontum*. The genitive *pontum* was interpreted as a genitive of a third declension noun with a consonant stem. From the case forms *pontis* and *pontibus* the impression was made that there was a noun from the third declension. By analogy of forms like *frontis* and *frontibus* a new nominative *pons* was created: *frontis* : *pontis* = *frons* - X, X = *pons*. The genitive plural was still *pontum* at this stage because there was no *i* stem involved. Under the influence of forms such as *frontium* and *fontium*, the genitive plural of *pons* became *pontium* just like the genitive plural of the participles became *ferentium* although there was never an *i* stem in the present participles. The nominative singular remains a problem however. While we agree with Beekes that the *i* stem forms are of secondary nature, we still need to account for the disappearance of a perfectly normal nominative form *\*pontēs*. Beekes' reconstruction assumed that the laryngeal disappeared without vocalising in the nominative singular, which seems less likely (but not impossible, cf. *supra*) to us in light of forms such as *agricola*. We believe, with Pedersen, that in an initial stage the inherited form *\*pontes* and the analogically created form *pons* coexisted in a similar fashion as *plebes* and *plebs*

---

<sup>28</sup>Wolfgang De Melo (p.c.) assumes that this analogical levelling had probably already happened before Proto-Latin. Given the fact that neither Oscan nor Umbrian have any traces of this ablaut, it is very likely that the levelling is of Proto-Italic date. On the other hand, the nouns in *ion* have levelling in the Latin paradigm but not in the Sabellic one, so one could argue that the levelling in this specific occurred independently. The issue of paradigmatic levelling and secondary ablaut deserves closer scrutiny. In any case the levelling must have been the first evolution in this specific paradigm.

coexisted. We admit that the disappearance is strange especially in the light of the unchanged form *clades*, and the coexistence of doublets as *plebs* and *plebes* (in which the third declension forms do not occur in Old Latin, see Weiss 2009:255) but we suspect that the form *\*pontes* would have been ousted under the influence of the forms in *ons* such as *mons*, *frons* and *fons* on the one hand and the participle forms in *ns* on the other hand. We believe that the masculine gender of *\*pontes* might also have played a role in the disappearance, because the nouns in *es* were almost exclusively feminine.

### The PIE reconstruction of this noun

Finally we have to explain why in this article the reconstruction *\*ponteh<sub>1</sub>s* as first suggested by Pedersen in 1893 and 1926 was used. In 1967 Schindler proposed to use the reconstruction *\*pentoh<sub>2</sub>s* because of other declensions which he described as "amphikinetic". He suggested that the nouns in this declension type were categorised as R(e) S(o) D(z) in the strong cases and R(z) S(z) D(e) on the weak cases (1967:201-205).<sup>29</sup> His reconstruction has now been accepted by most Indo-European handbooks (Meier-Brügger, Fortson, Clackson, Weiss) and scholars. While this is certainly true for some nouns (quoted by Schindler), such as Hittite *tekan*, Greek *χθών* and Sanskrit *kṣam*, and Greek *ἔως*, Latin *aurōra* and Sanskrit *uśāh*, the reconstruction with an *o* seems nevertheless more likely in light of the cognates in Slavic, Armenian, Greek and Latin. This was already pointed out by Pedersen, who was followed by Hamp (1953:136) and Beekes (1969:179); this reconstruction has been reiterated in the etymological dictionaries of De Vaan, Beekes-Van Beek and Lubotsky. Hamp (1953:136) and Mayrhofer (in his 1986 *Indogermanische Grammatik* against his earlier and later reconstructions) reconstructed *\*pEntEH* to indicate that stem vowel and thematic vowel are debated and not certain. We believe that the Latin paradigm indicates that the

---

<sup>29</sup>R stands for root, S stands for suffix and D stands for desinence, ending; (e) stands for "e grade", (o) stands for "o grade" and (z) stands for zero grade. In describing these ablaut patterns we followed the system used in Clackson 2007:79-81.

original vowel was *o* because if the reconstruction had been *\*pentoh<sub>2</sub>* for the strong cases and *\*pnth<sub>2</sub>* for the weak cases, the entire Latin declension would have had an *e* and it is difficult to see how that would have been leveled out into *o*. We believe that the Tocharian evidence speaks for *o* as well.<sup>30</sup> The Tocharian B compound *amäkpänta* "wagon chief" is a reflex of PIE *\*pntH-* and Tocharian A *mapanti* "army chief" point at a form *pont(H)-o* (Adams 1984, 1999:19).

The second problem is the reason for choosing *\*h<sub>1</sub>* instead of the generally accepted *\*h<sub>2</sub>*. The first reconstructions were made with *\*h<sub>1</sub>*, but gradually the reconstruction of this noun was changed because most scholars assumed that only *\*h<sub>2</sub>* could aspirate. The first one to state this was Kuryłowicz (1927:22) although he was not entirely certain in this case but assumed that since all certain aspirating cases involved *\*h<sub>2</sub>*, this noun had to have *\*h<sub>2</sub>* as well. Initially, Pedersen's reconstruction was accepted by most scholars (as can be seen in Hamp 1953 and the initial versions of Mayrhofer's etymological dictionary). After Schindler's article in 1967, Mayrhofer (1981b:432-against his *KEWAi* and 1978:54) argued that only the second laryngeal could aspirate and this is now accepted by most scholars. The reasons why we accept Pedersen's reconstruction are twofold: first, we believe with Beekes (1969:179, 1970:42, 1988a) and Lubotsky (f.c. a s.v. *panthāh*) that *\*h<sub>1</sub>* can aspirate as well, and secondly we believe that the reconstruction *\*pentoh<sub>2s</sub>* poses problems for all languages, except Indo-Iranian. The instances used to prove the aspirating effects of *\*h<sub>1</sub>* are the 2<sup>nd</sup> person plural active Sanskrit *tha* Greek *τε*, and Latin *tis* coming from PIE *\*th<sub>1</sub>e*, and Sanskrit *asthi* Greek *ὄστέ(ι)οῦ* and Latin *os* coming from *\*Hosth<sub>1</sub>(eio)*, although other explanations for these two instances are also possible, such as a root *\*Host* with a suffix *eio* in Greek for *ὄστέ(ι)οῦ* and Sanskrit aspiration under the influence of the preceding *s* (a theory already extensively argued for by Hiersche 1964),<sup>31</sup> and a secondary ending *\*th<sub>2</sub>e* which disappeared in Greek but was preserved

<sup>30</sup>We owe this reference to Lambert Isebaert and to one of the anonymous referees of the journal.

<sup>31</sup>One can refer to the discussion in Joseph 1984.

in Sanskrit and used as primary ending,<sup>32</sup> or a secondary aspiration as sign for the second person (Gray 1930:238, Kuryłowicz 1956:381) for the ending *tha*. We would also like to point at the fact that  $*h_1$  and  $*h_2$  behaved similarly in (Proto-)Sanskrit: both laryngeals changed PIE  $*d^h$  into *h* as can be seen in the participle *hitah* from  $*d^h h_1 tos$  and the 1<sup>st</sup> person plural middle ending *mahi* coming from  $*med^h h_2$ .

### Conclusion

We started by discussing the two theories that suggested an *i* stem for this paradigm, one arguing for an original diphthong *ōi/oi*, that was simplified in almost all branches, the other one arguing for a stem  $*ponth_1$  that evolved independently into an *i* stem in several languages and that was later analogically (and also independently) removed in Sanskrit and Avestan. We analysed the evidence for both theories and concluded that the Latin and Greek evidence for an inherited *i* stem was not convincing because it contradicted the Greek sound laws and because the Latin evolutions could also be explained otherwise. We then proceeded to Beekes' analysis and found that his evolutions for Latin, Armenian (and Slavic) were at least plausible and allowed the reconstruction of a form  $*pontH$ , even though the Latin nominative *pons* remains a problem in our eyes. We also pointed at the Latin compound *pontifex* and the Scythian name *παντικαπης* as additional elements confirming the existence of  $*pontH$ . We nevertheless have our doubts on the Indo-Iranian (and Indo-European) reconstructions because of the following reasons. First, we wonder why this noun would have had a nominative in  $*Hs$  and an accusative in  $*eHm$ . Secondly, we doubt the independent innovation of the nominative singular in both Sanskrit and Avestan, but rather think that those languages preserved the original declension. Thirdly, we doubt the evidence of the Old Persian form *pθim*, as this accusative form is in itself already an analogical reformation, regardless of which reading one takes. The Greek forms are most easily explained by assuming later thematisations, either from a stem with or without laryngeal, but they have no bearing in this discussion because their origin might be

<sup>32</sup>We owe these two suggestions to Michael Weiss (p.c.).

secondary. In light of all the above, we believe that the original paradigm as proposed by Pedersen in 1926, nominative *\*ponte<sub>h</sub>is* and genitive *\*pnt<sub>h</sub>ies*, has some problems but is still the best explanation for the facts in most languages.

### Bibliography

Adams, D.

- 1984 Greek (*h*)*amaksa* "wagon chassis" and its cognates. *Zeitschrift für vergleichende Sprachforschung* 97:230-232.  
 1999 *An Etymological Dictionary of Tocharian B*. Amsterdam: Rodopi.

Bakkum, G.

- 2008 *The Latin Dialect of the Ager Faliscus. 150 years of scholarship*. 2 Volumes. Amsterdam: University of Amsterdam Press.

Baldi, P.

- 1983 *An Introduction to the Indo-European languages*. Carbondale, IL: Southern Illinois University Press.

Bally, C. - Gautier, L.

- 1922 *Recueil des publications scientifiques de Ferdinand De Saussure*. Genève.

Bammesberger, A.

- 1984a *Studien zur Laryngaltheorie*. Göttingen: Vandenhoeck und Rupprecht.  
 1984b *Lateinische Sprachwissenschaft*. Regensburg: Pustet.  
 1988 *Die Laryngaltheorie und die Rekonstruktion des indogermanischen Laut- und Formensystems*, herausgegeben von Alfred Bammesberger. Heidelberg: Winter.

Bartholomae, C.

- 1879 *Der gâôâ dialekt*. Habilitationsschrift. Leipzig.  
 1883 *Handbuch der altiranischen Dialekte*. Leipzig: Breitkopf und Härtel.  
 1885 Beiträge zur altiranischen grammatik. *Beiträge zur Kunde der indogermanischen Sprachen* 9:126-133.  
 1888 *Beiträge zur Flexionslehre der indogermanischen Sprachen, insbesondere der arischen Dialekte*. Gütersloh.  
 1889 Arisches. *Beiträge zur Kunde der indogermanischen Sprachen* 15:1-44.  
 1890 *Studien zur indogermanischen Sprachgeschichte. Indogermanisches SS mit vier Exkursen*. Leipzig: Max Niemeyer.  
 1904 *Altiranisches Wörterbuch*. Strassburg: Trübner.

Beekes, R.

- 1969 *The Development of the Proto Indo European Laryngeals in Greek*. Paris – The Hague: Mouton.

- 1972a Review Lindeman 1970. *Kratylos* 15,2:40-47.
- 1972b The nominative of the hysterodynamic noun-inflection. *Zeitschrift für Vergleichende Sprachforschung* 86,30-63.
- 1985 *The Origins of the Indo-European Noun-inflection*. Innsbruck: Institut für Sprachwissenschaft.
- 1988a Laryngeal developments: a survey. In: Bammesberger, A. *Die Laryngalthorie und die Rekonstruktion des indogermanischen Laut- und Formensystems*, herausgegeben von Alfred Bammesberger, 59-105. Heidelberg: Winter.
- 1988b *A Grammar of Gatha Avestan*. Leiden: Brill.
- 1989 Old Persian *pōim*. *Münchener Studien zur Sprachwissenschaft* 50:7-13.
- 1995 *Comparative Indo European Linguistics: An Introduction*. Amsterdam-Philadelphia: Benjamins.
- 1998 *Een nieuw Indo-Europees etymologisch woordenboek*. Mededelingen van de Koninklijke Nederlandse Academie van Wetenschappen 61,9.
- Beekes, R. – Van Beek, L.  
2010 *Etymological Dictionary of Greek*. 2 volumes. Leiden: Brill.
- Benveniste, E.  
1966 *Problèmes de linguistique générale*. Paris: Gallimard.
- Bezzenberger, A.  
1908a Pontifex und imperator. *Zeitschrift für vergleichende Sprachforschung* 42:86-97.  
1908b Ar. *pánthās* und seine Flexion. *Zeitschrift für vergleichende Sprachforschung* 42:384-385.
- Boisacq, E.  
1938 *Dictionnaire étymologique de la langue grecque. Étudiée dans ses rapports avec les autres langues indo-européennes*. Heidelberg: Winter.
- Bopp, F.  
1857 *Glossarium comparativum linguae sanscritae, in quo omnes sanscritae radices et vocabula usitatissima explicantur et cum vocabulis graecis, latinis, germanicis, lituanicis, slavicis, celticis comparantur a Francisco Bopp*. Berlin: Dümmler. (third edition, the original edition -without Latin transcriptions- dates from 1832)
- Brandenstein, W. - Mayrhofer, M.  
1964 *Handbuch des Altpersischen*. Wiesbaden: Harassowitz.
- Brugmann, K.  
1876a Nasalis sonans in den indogermanischen Sprachen. *Studien zur griechischen und lateinischen Grammatik* 9: 285-338.  
1876b Zur Geschichte der stammbastufenden Declinationen. Erste Abhandlung: Die Nomina auf -Ar- und -Tar-. *Studien zur*

- griechischen und lateinischen Grammatik* 9: 363-406.
- 1886 *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen*. Erster Band: Einleitung und Lautlehre. Strassburg: Trübner.
- 1889 *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen*. Zweiter Band, Erste Hälfte: Wortbildungslehre, Stammbildungslehre, Flexionslehre. Strassburg: Trübner.
- 1892 *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen*. Zweiter Band, Zweite Hälfte: Wortbildungslehre, Stammbildungslehre, Flexionslehre. Strassburg: Trübner.
- 1922 *Kurze vergleichende Grammatik der indogermanischen Sprachen*. Berlin: Vereinigung wissenschaftlicher Verleger.
- Brugmann, K. - Delbruck, B.  
 1904 *Kurze vergleichende Grammatik der indogermanischen Sprachen*. Strassburg: Trübner.
- Brugmann, K. - Osthoff, H.  
 1878-90 *Morphologische Untersuchungen auf dem Gebiete der indogermanischen Sprachen*. 5 Volumes.
- Buck, C.  
 1904 *A Grammar of Oscan and Umbrian*. Boston: Ginn.  
 1955 *Comparative Grammar of Latin and Greek*. Chicago: University of Chicago Press.
- Bugge, S.  
 1893 Beiträge zur etymologischen Erläuterung der armenischen Sprache. *Zeitschrift für vergleichende Sprachforschung* 32:1-87.
- Burrow, T.  
 1955 *The Sanskrit Language*. London: Faber.  
 1979 *The Problem of Shwa in Sanskrit*. Oxford: Clarendon Press.
- Chantraine, P.  
 1961 *Morphologie historique du grec*. Paris: Klincksieck.  
 1968-74 *Dictionnaire étymologique de la langue grecque*. Paris: Klincksieck.
- Ciardi-Dupré, G.  
 1901 Zur Geschichte der lateinischen Vocalsyncope. *Beiträge zur Kunde der indogermanischen Sprachen* 26:188-223.
- Clackson, J.  
 1996 Review Sihler 1995. *The Classical Review* NS. 46,2:297-301.  
 2007 *Indo-European Linguistics*. Cambridge: Cambridge University Press.
- Collart, J.  
 1967 *Histoire de la langue latine*. Paris: Presses universitaires de France

- Collinge, N.  
 1970 *Collectanea Linguistica. Essays in general and genetic linguistics.* The Hague: Mouton.
- Collitz, H.  
 1886 Die dreifache Abstufung in der altindischen Declination. *Beiträge zur Kunde der indogermanischen Sprachen* 10:1-71.
- Cowgill, W.  
 1965 Evidence in Greek. In Winter, W. (ed) *Evidence for Laryngeals*, 142-180. The Hague: Mouton.
- Cuny, A.  
 1912 Notes de phonétique historique: indo-européen et sémitique. *Revue de phonétique* 2: 101-132.  
 1942 Questions relatives à la vocalisation indo-européenne de ē, ə₂, ə₃. *A philological miscellany presented to Eilert Ekwall*, 230-240. Uppsala.
- De Decker, F.  
 2010 What is the Greek counterpart of Sanskrit *th*? Handout and lecture at the conference Greek and Latin from an Indo-European Perspective 3, Bratislava, July 8-10<sup>th</sup> 2010.  
 ftc What is the Greek counterpart of Sanskrit *th*? (written version of De Decker 2010)
- De Lagarde, P.  
 1866 *Gesammelte Abhandlungen.* Leipzig: Brockhaus.
- Derksen, R.  
 2008 *Etymological Dictionary of the Slavic Inherited Lexicon.* Leiden: Brill.
- De Vaan, M.  
 2003 *The Avestan Vowels.* Leiden: Brill.  
 2008 *Etymological dictionary of Latin and the other Italic languages.* Leiden: Brill.
- Dietrich, A.  
 1852 Zur Geschichte des Accents im Lateinischen. *Zeitschrift für Vergleichende Sprachforschung* 1:543-557.
- Elbourne, P.  
 1998 Proto-Indo-European voiceless aspirates. *Zeitschrift für vergleichende Sprachforschung* 111:1-30.  
 2000 Plain voiceless stop plus laryngeal in Proto-Indo-European. *Zeitschrift für vergleichende Sprachforschung* 113:2-30.  
 ftc A rule of deaspiration in Greek.
- Ernout, A.  
 1928 *Les éléments dialectaux du vocabulaire latin.* Paris: Champion.

- Ernout, A. - Meillet, A.  
1967 *Dictionnaire étymologique de la langue latine*. Paris: Klincksieck.  
(4ième ouvrage augmenté)
- Fortson, B.  
2004 *Indo-European Language and Culture: an introduction*. Oxford:  
Blackwell.
- Frisk, H.  
1960-74 *Griechisches etymologisches Wörterbuch*. Heidelberg: Winter.
- Froehde, F.  
1883 Der lateinische ablaut. *Beiträge zur Kunde der indogermanischen Sprachen* 7:97-126.  
2002 Constraints and productivity in Latin nominal compounding. *Transactions of the Philological Society* 2002:259-287.
- Furnée, E.  
1972 *Die wichtigsten konsonantischen Erscheinungen des Vorgriechischen*. Paris-Amsterdam: Mouton.
- Geldner, K.  
1907 *Der Rig Veda in Auswahl*. Stuttgart: Kohlhammer.
- Gildersleeve, B.  
1894 *Gildersleeve's Latin Grammar*. Boston- New York: Heath.
- Graßmann, H.  
1863a Über die aspiraten und ihr gleichzeitiges  
vorhandensein im an- und auslaute der wurzeln. *Zeitschrift für  
vergleichende Sprachforschung* 12,81-110.  
1863b Über das ursprüngliche vorhandensein vom wurzeln, deren  
anlaut und auslaut ein aspirate enthielt. *Zeitschrift für  
vergleichende Sprachforschung* 12,110-138.  
1873 *Wörterbuch zu Rig Veda*. Leipzig: Brockhaus.
- Gray, L.  
1930 The personal endings of the present and imperfect active and  
middle. *Language* 6,3.229-252.
- Greppin, J.  
1982 The reflex of the Indo-European voiceless aspirates in  
Armenian. In *Mijazgayin Hayerenagitakan Gitazolov*, 35-48  
Erevan: Hayakan.
- Hackstein, O.  
2002 Uridg. \*CH.CC > \*C.CC. *Zeitschrift für vergleichende  
Sprachforschung* 115:1-23.
- Hamp, E.  
1953 Indo-European nouns with laryngeal suffix. *Word* 9:135-141.

- 1970a Albanian *djathë* cheese. *Zeitschrift für vergleichende Sprachforschung* 84: 140-141.
- 1970b Sanskrit *duhita*, Armenian *dustr*, and IE internal schwa. *Journal of the American Oriental Society* 90,2.228-231.
- Herbig, G.  
1916 Zur Vorgeschichte der römischen pontifices. *Zeitschrift für vergleichende Sprachforschung* 49:211-232.
- Hiersche, R.  
1964 *Untersuchungen zur Frage der Tenuis Aspiratae im Indogermanischen*. Wiesbaden: Harassowitz.
- Hirt, H.  
1895 *Der indogermanische Akzent: ein Handbuch*. Strassburg: Trübner.  
1900 *Der indogermanische Ablaut: Vornehmlich in seinem Verhältnis zur Betonung*. Strassburg: Trübner.  
1912 *Handbuch der griechischen Laut- und Formenlehre*. Heidelberg: Winter.  
1921 *Indogermanische Grammatik. Teil II: der indogermanische Vokalismus*. Heidelberg: Winter.  
1927 *Indogermanische Grammatik. Teil III: das Nomen*. Heidelberg: Winter.
- Hoenigswald, H.  
1965 Evidence in Indo-Iranian. In: Winter, W. (ed) *Evidence for Laryngeals*, 93-99. The Hague: Mouton.
- Hoffmann, K. - Leumann, M. - Szantyr, A.  
1977 *Lateinische Grammatik*. München: Beck.
- Hübschmann, H.  
1897 *Armenische Grammatik. Teil I Armenische Etymologie*. Leipzig: Breitkopf und Härtel.
- Jackson, J.  
1892 *An Avesta Grammar in Comparison with Sanskrit. Part I: Phonology, Inflection, Word Formation*. Stuttgart: Kohlhammer.
- Joseph, B.  
1984 A Note on Assibilation in Hittite. *Die Sprache* 30:1-16.
- Kent, R.  
1932 *The Sounds of Latin: A descriptive and historical morphology*. Language Monographs 12.  
1953 *Old Persian: Grammar, Texts, Lexicon*. New Haven, CT: American Oriental Society.
- Kortlandt, F.  
1981 1st sg. middle \*H<sub>2</sub>. *Indogermanische Forschungen* 86:123-136.

- Klingenschmitt, G.  
 1992 Die lateinische Nominalflexion. In Panagl, O. – Krisch (eds) *T. Latein und Indogermanisch*, Kolloquium der Indogermanischen Gesellschaft Salzburg 23.-26. September 1986, 89-135. Innsbruck : Institut für Sprachwissenschaft der Universität Innsbruck.
- Kloekhorst, A.  
 2008 *The Hittite Inherited Lexicon*. Leiden: Brill.
- Kuhn, A.  
 1855 *Miszellen III: Pfad, πάτος, πόντος, pons, pontifex*. *Zeitschrift für vergleichende Sprachforschung* 4:73-77.
- Kühner, R – Holzweissig, F.- Stegmann, C.  
 1879 *Ausführliche Lateinische Grammatik*. Hannover: Hahn. (anastatic reprint in 1966)
- Kuiper, F.  
 1934 *Die indogermanischen Nasalpräsentia*. Amsterdam: Noordhollandsche Uitgeversmaatschappij.  
 1942 *Notes on Vedic noun inflection*. *Mededelingen van de Koninklijke Nederlandse Academie van Wetenschappen* 5,4: 161-255.  
 1957 *Avestan Mazdā*. *Indo-Iranian Journal* 1:86-95.  
 1966 *Review Hiersche 1964*. *Indo-Iranian Journal* 10:218-227.
- Kuryłowicz, J.  
 1927 *Les effets du ə en indo-iranien*. *Prace Filologiczne* 11:201-243.  
 1932 *Les désinences moyennes de l'indo-européen et du hittite*. *Bulletin de la Société Linguistique de Paris* 33:1-4.  
 1935 *Études indo-européennes*. Cracow: Gebhner-Wolf.  
 1956 *L'apophonie en indo-européen*. Wrocław: Nauck.  
 1958 *L'accentuation des langues indo-européennes*. Wrocław: Nauck.  
 1964 *The Inflectional categories of Indo-European*. Heidelberg: Winter.  
 1968 *Indogermanische Grammatik. Teil II: Ablaut*. Heidelberg: Winter.
- Lanman, C.  
 1934 *A Sanskrit Reader*. Cambridge, MA: Harvard University Press.
- Lewis, C. – Short, C.  
 1891 *A Latin dictionary*. Oxford: Oxford University Press.
- Lindeman, F.  
 1987 *Introduction to the "laryngeal theory"*. Oslo: Norwegian University Press.
- Lindsay, W.  
 1894 *The Latin Language. An historical Account of Latin Sounds, Stems and Flexions*. Oxford: Oxford University Press.  
 1895 *A Short Historical Grammar of Latin*. Oxford: Oxford University Press.

- 1897 *Handbook of Latin Inscriptions, Illustrating the History of the Language*. Chicago - Boston: Allyn and Bacon.
- Lubotsky, A.  
 ftc a *The Inherited Lexicon of Indo-Iranian*. Leiden Indo-European Etymological Dictionaries Series. (draft version can be consulted online). To appear at Brill.  
 ftc b *Historical Phonology of Indo-Iranian*. To appear in Fritz, M. - Klein, J. *Indo-European Linguistics*.
- Macdonell, A.  
 1910a *A Vedic Reader for Students*. Oxford: Oxford University Press.  
 1910b *Vedic Grammar*. Strassburg: Trübner.  
 1916 *A Vedic Grammar for Students*. Oxford: Oxford University Press.
- Mallory, J. – Adams, D. (eds)  
 1997 *Encyclopaedia of Indo European Culture*. London-Chicago.  
 2006 *The Oxford introduction to Proto-Indo-European and the Proto-Indo-European world*. Oxford.
- Martirosyan, H.  
 2010 *Etymological Dictionary of the Inherited Armenian Lexicon*. Leiden: Brill.
- Mayrhofer, M.  
 1953 *Kurzgefasstes etymologisches Wörterbuch des Altindischen - A concise etymological Sanskrit dictionary*. Heidelberg: Winter.  
 1957 *Kurzgefasstes etymologisches Wörterbuch des Altindischen - A concise etymological Sanskrit dictionary*. Heidelberg: Winter.  
 1965 Hethitisch und Indogermanisch. Gedanken zu einem neuen Buche. *Die Sprache* 10:174-197.  
 1978 *Sanskrit-Grammatik mit sprachvergleichenden Erläuterungen*. Berlin: De Gruyter.  
 1981a Ferdinand de Saussure. Nach hundert Jahren. *Sitzungsberichte der Heidelberger Akademie der Wissenschaften*: 7-38.  
 1981b Laryngalreflexe im Indo-Iranischen. *Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung* 34:427-438.  
 1983 *Sanskrit und die Sprachen Alteuropas: zwei Jahrhunderte des Widerspiels von Entdeckungen und Irrtümern*. Göttingen: Vandenhoeck und Ruprecht.  
 2004 *Die Hauptprobleme der indogermanischen Lautlehre seit Bechtel*. Wien: Österreichische Akademie der Wissenschaften.
- Mayrhofer, M.  
 2005 *Die Fortsetzung der indogermanischen Laryngale im Indo-Iranischen*. Wien: Österreichische Akademie der Wissenschaften.  
 2006 *Einiges zu den Skythen, ihrer Sprache, ihrem Nachleben*. Österreichische Akademie der Wissenschaften.
- Meier-Brügger, M.  
 1992 *Griechische Sprachwissenschaft*. Zwei Bände. Berlin: De Gruyter.

- 2003 *Indo-European Linguistics*. (translation of the 2001 German original) Berlin: De Gruyter.
- Meillet, A.  
 1903 *Esquisse d'une grammaire comparée de l'arménien classique*. Vienna : Imprimerie des Pères Mekhitaristes.  
 1915 *Grammaire du vieux perse*. Paris: Maisonneuve.  
 1928 *Esquisse d'une histoire de la langue latine*. Paris: Klincksieck.
- Meillet, A. - Vendryès, J.  
 1948 *Traité de grammaire comparée des langues classiques*. Paris: Klincksieck.
- Meiser, G.  
 1999 *Historische Laut- und Formenlehre der lateinischen Sprache*. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Melchert, C.  
 1984 *Hittite Historical Phonology*. Göttingen: Vandenhoeck und Ruprecht.
- Meringer, R.  
 1890 Sandhi oder ton. *Beiträge zur Kunde der indogermanischen Sprachen* 16: 221-234.
- Mommsen, T.  
 1856 *Römische geschichte, mit einer militärkarte von Italien*. Berlin: Weidmannsche Buchhandlung.
- Monier Williams, M.  
 1899 *A Sanskrit-English dictionary : etymologically and philologically arranged with special reference to cognate Indo-European languages*. Oxford: Clarendon Press.
- Müller, F. – Thiel, J. - Leeman, A.  
 1969 *Beknopt Latijns-Nederlands Woordenboek*. Groningen: Wolters Noordhoff.
- Niedermann, M.  
 1931 *Phonétique historique du latin*. Paris: Klincksieck.
- Panagl, O. – Krisch, T.  
 1992 *Latein und Indogermanisch*, Kolloquium der Indogermanischen Gesellschaft Salzburg 23.-26. September 1986. Innsbruck : Institut für Sprachwissenschaft der Universität Innsbruck.
- Pedersen, H.  
 1893 r/n stämme. *Zeitschrift für Vergleichende Sprachforschung* 32,240-273.  
 1926 *La cinquième déclinaison latine*. Copenhagen: Host.

- Polomé, E.  
1965 The laryngeal theory so far: a critical bibliographical survey. Winter, W. (ed) *Evidence for Laryngeals*, 9-78. The Hague: Mouton.
- Reichert, H.  
1901 Die lateinische V. deklination. *Beiträge zur Kunde der indogermanischen Sprachen* 26:266-276.  
1909 *Awestisches Elementarbuch*. Heidelberg: Winter.  
1927 *Die Erforschung der indogermanischen Sprachen: Iranisch*. Grundriss der vergleichenden Grammatik der Indogermanischen Sprachen, Band 4,2. Berlin: De Gruyter.
- Renou, L.  
1952 *Grammaire de la langue védique*. Lyon:IAC.
- Rix, H.  
1972 Review Beekes 1969. *Kratylos* 14,2:172-175.  
1975 *Flexion und Wortbildung*. Akten der V. Fachtagung der Indogermanischen Gesellschaft. Wiesbaden.  
1976 *Historische Grammatik des Griechischen. Laut- und Formenlehre*. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Ruijgh, C.  
1978 Review Rix 1976. *Mnemosyne* IV 31,3:298-307.
- Schaeken, J. - Birnbaum, H.  
1999 *Das altkirchenslavische Wort: Bildung - Bedeutung - Herleitung*. München: Sagner. (accessible also via [www.schaeken.nl](http://www.schaeken.nl))
- Schindler, J.  
1966 Bemerkungen zum indogermanischen Wort für Schlaf. *Die Sprache* 12:67-76.
- Schindler, J.  
1967 Das indogermanische Wort für Schlaf und die dentalen Spiranten. *Die Sprache* 13:190-205.  
1969 Die indogermanischen Wörter für „Vogel“ und „Ei“. *Die Sprache* 15,2:144-167.  
1972 *Das Wurzelnomen im Arischen und Griechischen*. Würzburg. Inauguraldissertation.  
1973 Bemerkungen zur Herkunft der indogermanischen Diphthongstämme. *Die Sprache* 19,2:148-157.  
1974 Fragen zum paradigmatischen Ausgleich. *Die Sprache* 20: 1-10.
- Schmidt, J.  
1883 Heteroklitische nominative singularis auf *ās* in den arischen sprachen. *Zeitschrift für Vergleichende Sprachforschung* 26:401-409.  
1885 Indogermanisches *ō* aus *ōi* in der nominalflexion. Mit excurs: Zur bildung des nominativus singularis. *Zeitschrift für*

*Vergleichende Sprachforschung* 27:369-397.

Schrijver, P.

1991 *The Reflexes of the Proto-Indo-European Laryngeals in Latin*. Amsterdam-Atlanta, GA: Rodopi.

Schwyzler, E.

1939 *Griechische Grammatik*, auf der Grundlage von Karl Brugmanns griechischer Grammatik. München: Beck.

Sihler, A.

1995 *A New Comparative Grammar of Greek and Latin*. Oxford: Oxford University Press.

Skjaervø, P.

2010 Old Iranian languages. In: Windfuhr, G. (ed.). *The Iranian Languages*, 43-195. London: Routledge.

Smyth, H.

1956 *Greek Grammar*. Revised by Gordon Messing. Cambridge, MA: Harvard University Press.

Sommer, F.

1902 *Handbuch der lateinischen Laut- und Formenlehre*. Heidelberg: Winter.

Szemerényi, O.

1967 The new look of Indo-European. Reconstruction and typology. *Phonetica* 17:65-99.

1973 La théorie laryngale de Saussure à Kuryłowicz: essai de réévaluation. *Bulletin de la Société linguistique de Paris* 68:1-73.

1975 Rekonstruktion in der indogermanischen Flexion, Prinzipien und Probleme. In: Rix, H. *Flexion und Wortbildung*. Akten der V. Fachtagung der Indogermanischen Gesellschaft, 325-345. Wiesbaden: Reichelt.

1980 *Einführung in die vergleichende Sprachwissenschaft*. Wiesbaden: Reichelt.

1996 *Introduction to Indo-European Linguistics*. Oxford (translated from *Einführung in die vergleichende Sprachwissenschaft*, 4e Auflage, 1990 with additional notes and references).

Untermann, J.

1992 Wurzelnomina im Lateinischen. In Panagl, O. – Krisch, T. *Latein und Indogermanisch*, Kolloquium der Indogermanischen Gesellschaft Salzburg 23.-26. September 1986, 137-153. Innsbruck : Institut für Sprachwissenschaft der Universität Innsbruck.

2000 *Wörterbuch des Oskisch-Umbrischen*. Heidelberg: Winter.

Wackernagel, J.

1894 *Altindische Grammatik: I. Lautlehre*. Göttingen: Vandenhoeck und Ruprecht.

1927/8 Indo-Iranica 1. *pánthah* "Weg". *Zeitschrift für Vergleichende*

*Sprachforschung* 55:104-109.

Wackernagel, J. - Debrunner, A.

1930 *Altindische Grammatik: III. Nominalflexion- Zahlwort - Pronomen.* Göttingen: Vandenhoeck und Ruprecht.

Wackernagel, J. - Debrunner, A. -Renou, L.

1957 *Altindische Grammatik.* (With a new introduction on the Lautlehre.) Göttingen: Vandenhoeck und Ruprecht.

Walde, A.

1905 *Lateinisches Etymologisches Wörterbuch.* Heidelberg: Winter.

Walde, A. - Hoffmann, J.

1937 *Lateinisches etymologisches Wörterbuch.* Heidelberg: Winter.

Walde, A. - Pokorny, J.

1927 *Indogermanisches etymologisches Wörterbuch.* Berlin.

Watkins, C.

1968 *Indogermanische Grammatik.* Teil III. Heidelberg: Winter.

Weiss, M.

2009 *Outline of the Historical and Comparative Grammar of Latin.* Ann Arbor: Beech Stave Press.

Weitenberg, J.

1975 Armenisch *ort'* "Weinstock, Rebe", griechisch *πτόρθος* und hethitisch *paršdu.* *Zeitschrift für Vergleichende Sprachforschung* 89,66-75.

Whitney, W.

1879 *A Sanskrit Grammar, including both the classical language, and the older dialects, of Veda and Brahmana.* Bibliothek indogermanischer Grammatiken Band II. Leipzig: Breitkopf und Härtel.

Winter, W.

1965 *Evidence for Laryngeals* (ed.). The Hague: Mouton.

Zgusta, L.

1955 *Die Personennamen griechischer Städte der nördlichen Schwarzmeerküste: die ethnischen Verhältnisse, namentlich das Verhältnis der Skythen und Sarmaten, im Lichte der Namenforschung.* Prague: Tschechoslowakische Akademie der Wissenschaften.

1984 *Kleinasiatische Ortsnamen.* Heidelberg: Winter.

Zubaty, J.

1892 Die ursprachliche tenuis aspirata im arischen, griechischen und latein. *Zeitschrift für Vergleichende Sprachforschung* 31:1-9.