



Universiteit
Leiden
The Netherlands

The PIE word for 'dry'

Lubotsky, A.M.

Citation

Lubotsky, A. M. (1985). The PIE word for 'dry'. *Historische Sprachforschung*, 98, 1-10. Retrieved from <https://hdl.handle.net/1887/2659>

Version: Not Applicable (or Unknown)
License: [Leiden University Non-exclusive license](#)
Downloaded from: <https://hdl.handle.net/1887/2659>

Note: To cite this publication please use the final published version (if applicable).

The PIE word for 'dry' *)

1. The PIE root for 'to be dry, to dry up' has been reconstructed as **saus-* on the basis of the following evidence:

Gr. *αῦος, αῦος* 'dry'; denom. *αὔω; αὐαίνω, αὐαίνω* 'to dry';
 Skt. *śuṣ-* (< **suṣ-*) 'to become dry', Av. *haoš-* 'to wither away';
 Skt. *śúṣka-* 'dry', Av. *huška-* 'id.', OP *uška-* n. 'land';
 OE *sēar* 'dry, sear', MLG *sōr* 'id.', OHG denom. *sōrēn* 'to dry up';
 Lith. *saũsas* (4) 'dry', Latv. *sāuss* 'id.', OPr. *sausai* adv. 'dry'; Lith.
 (*nu-*)*sùsti* 'to become dry, mangy', Latv. *sùst* 'to become dry';
 Slav. **sûxъ* (c): OCS *suxъ*, Russ. *suxój*, SCr. *sûh* 'dry', etc.;
 Alb. *thanj* 'to dry up' if from **sausnjo*;
 Lat. *sūdus* 'dry (of weather)' if from **suz-dos*.

This word family is very important for the discussion of the phoneme **a* in Proto-Indo-European. Proponents of the view that PIE had this phoneme use the root **saus-* as one of their trump cards (e.g., recently Mayrhofer 1981: 21) On the other hand, scholars who believe that every PIE **a* goes back to (a sequence with) **H₂* admit that the root **saus-* is a problem. As a matter of fact, we cannot substitute **H₂e* for **a* in this root because PIE **sH₂eus-* would have yielded acute intonation in the Balto-Slavic zero grade (Kortlandt 1975: 3) and a long *ū* in the Indo-Iranian zero grade (Beekes 1969: 178). The same holds true if we reconstruct PIE **seH₂us-*.

However, if we examine the material carefully, we come to the conclusion that the reconstruction of **a* in **saus-* is based only on Greek *αῦος*. For all other languages a root **seus-* with the ablaut forms **sous-* and **sus-* would suffice because in Indo-Iranian, Balto-Slavic, Germanic, and Albanian short **o* and **a* fell together. A correct evaluation of the Greek evidence turns out to be of crucial importance for the reconstruction of this root. In the following sections I intend to show that Gr. *αῦος* cannot represent **hauhos* < **sausos*, but rather points to **ahuhos* < **H₂susos*.

2. In 1967 Kiparsky pointed out that an intervocalic sequence *-Rh-* was metathesized in Greek. As a result of this development,

*) I am indebted to Professors R.S.P. Beekes, F.H.H. Kortlandt, and C.J. Ruijgh for commenting upon this paper.

-Rh- merged with -hR-, which yielded a geminate -RR- in Aeolic and lengthening of a preceding vowel in other dialects. This metathesis accounts for the Greek word for 'dawn' (Att. *ἔως*, Ion. *ἠώς*, Dor. *ἄφως*, Lesb. *αῦως*) which can now be derived from the proto-form **ausōs* < **H₂eusōs*, without postulating an ad hoc lengthened grade **āusōs*.

In the same way, we expect *sauos* to yield Aeol. *αῦος*, but in other dialects the lengthening of the *a*. In fact, we find everywhere *αῦος*, and in Attic (and Doric, see below) *αῦος*. Kiparsky (1967: 627) is therefore forced to assume that *αῦος* was originally a Lesbian word which was borrowed by Homer, and from Homer spread to the other dialects. But even if we consider it probable that Homer would have borrowed a word for 'dry' from Lesbian, the Attic *h-* in *αῦος* and in the denominative verb *αὔαινω* (cf. *ἀφαιαίνω*, *καθαίαινω* with the aspirated preverbs) 'to be dry' makes this explanation impossible. Lesbian is a psilotic dialect, so that there should be no traces of initial *h-*.

Although Kiparsky admits this, he still tries to find a way for explaining *αῦος* as a Lesbian form (l.c.): "Now we should expect IE **sauos* to yield Greek *haiños*, not *aĩnos*... The former existence of *h-* is conclusively shown, in fact, by the aspiration of the preverb in derived verbs like *kathauaínō*, *aphauaínō* 'dry'. Thus *aĩnos* has lost its *h-*, a fact which further enables us to pin the word down as a specifically Lesbian word". And in note 8 he writes: "'Attic *haiños*', cited by the dictionaries, is actually confined mainly to grammarians, and appears to be a conscious back-formation based on *kathauaínō* and other similar compound verbs". If I understand Kiparsky correctly, he argues that Lesbian has lost the word-initial *h-*, but preserved it in compound verbs, where the *h-* aspirated the preverb. I think this explanation is improbable because the preservation of *h-* to which Kiparsky refers occurs only sporadically in frequently used compounds (Schwyzer 1939: 321). "A conscious back-formation" based on a sporadically appearing form seems implausible. Furthermore, the *h-* in *αῦος* appears to be attested also in Doric (in a IV–III c. B.C. fragment edited by Turner 1976; the *h-* of *αῦος* is discussed on p. 57), which seems to be a decisive argument against the Lesbian origin of *αῦος*.

Two more explanations have been given for *αῦος*. Brugmann-Thumb (1913: 59) ascribed Ionic-Attic *au-* to the influence of the verb *αὔω* 'to be dry' < **ausiō*, but as the verb appears to be a derivative of *αῦος* (cf. also § 5 below), this explanation is improbable.

Recently, Klingenschmitt (apud Peters 1980: 11) proposed to derive $\alpha\upsilon\sigma$ from $*sausjo-$, a parallel-form to $*sauso-$ (cf. $*neujō-$ parallel to $*neyo-$). This assumption is gratuitous because there is no evidence for $*sausjo-$ whatsoever.

3. We can explain the form $\alpha\upsilon\sigma$ only if we assume that the metathesis $-wh-$ > $-hw-$ did not take place because the condition for it did not apply, i.e. the sequence $-wh-$ was not intervocalic. The end of the word cannot be disputed: it was PIE $*-usos$. Consequently, the $-u-$ was preceded by a consonant, which is only possible if we separate $\alpha\upsilon\sigma$ from Balto-Slavic and Germanic $*sousos/*sausos$ and assume a zero grade in the Greek word. In order to account for Gr. $\alpha-$ we should reconstruct an initial $*H_2-$ which was vocalized in Greek (a prothetic vowel), but lost elsewhere. The proto-form of the Balto-Slavic and Germanic word was then $*H_2sousos$, that of the Greek word $*H_2susos$. The ablaut in an o -stem is not surprising, cf. Skt. $svāpna-$, Olc. $hvefn$, Gr. $\upsilon\pi\nu\sigma$ 'sleep'. For discussion and explanation of this ablaut I refer to Beekes 1985: 156 ff. The ablaut in our word is discussed in § 8 below.

The development of $*ahuhos$ (< PIE $*H_2susos$) to $\alpha\upsilon\sigma$ does not seem to present difficulties, though the exact chronology cannot be established with certainty. I see two possibilities: either $*ahuhos$ > $*auhos$ (Grassmann's Law) > $*hauhos$ (h -anticipation¹) > $hawwos$ (= $\alpha\upsilon\sigma$); or $*ahuhos$ > $*ahuwos$ > $*hahuwos$ (h -anticipation) > $hawwos$. For the latter chronology we should assume that in Mycenaean the intervocalic $-h-$ was lost after i and u , but preserved elsewhere. The early loss of $-h-$ after i and u can be inferred from spellings i -je-re- u next to i -e-re- u for $\iota\epsilon\rho\epsilon\upsilon\varsigma$, me -nu- wa and me -nu- a_2 for $Μεν\upsilon\acute{\alpha}\varsigma$, a_2 -ra-tu- wa and a_2 -ra-tu- a for a toponym in $-ύ\acute{\alpha}$ (Ruijgh 1967: 55 f.) On the other hand, the $-h-$ after a vowel and before i , u was preserved as can be concluded from io -adjectives derived from s -stems. These adjectives are regularly spelt $-a$ - i - jo , $-e$ - i - jo , etc. which should represent $-ahios$, $-ehios$, etc. If the $-h-$ had been lost in this position, we would expect spellings $-a$ - jo , $-e$ - jo , etc.

Although I would prefer the second chronology which fits the Mycenaean facts better, both chronologies seem possible. The only remaining problem is the accentuation of $\alpha\upsilon\sigma$. In a word like $*H_2susos$ one would certainly expect oxytonesis. Several suggestions

¹) As Sommer (1905: 37 f.) has conclusively shown, we should not speak of 'Hauchversetzung' (e.g., $*auhos$ > $*hauos$), a term which is used in the literature time and again, but of h -anticipation ($*auhos$ > $*hauhos$).

for an explanation of the aberrant accentuation can be made²⁾, but none of them can be demonstrated. At any rate, there is no discrepancy with the oxytonesis of Germ. **sauzás* (> OE *sēar*, MLG *sōr*) and Slav. **sûxъ* (c) (Illich-Svitych 1979: 124) because the Greek word turns out to be a different formation (for the Balto-Slavic and Germanic words see § 8).

4. A decisive proof that Gr. *αῦος* goes back to **ahuhos* is provided by disyllabic *av̄-* of *ἀυσταλέος* in Homer. One may argue about the exact meaning of this hapax in τ 327 (it is applied to Odysseus who appears at the meals ‘*ἀυσταλέος*’ and poorly dressed, hence the translations like ‘sun-burnt, unkempt, unanointed, etc.’), but its connection with *αῦος* is generally accepted. Both *ἀυσταλέος* and *αὐστηρός* ‘harsh (wine), severe’ are probably based on a noun formed with a *-t*-suffix. Scholars have explained the disyllabicity in *ἀυσταλέος* as artificial (e.g., Bechtel 1914: 76), but this seems unlikely. The word fits well in the hexameter, and the poet would not have used an unnatural hiatus form if there had been no reason for doing so.

If, however, we reconstruct **ahustaleos* in view of *αῦος* < **ahuhos*, the disyllabic *av̄-* receives a straightforward explanation.

5. Thus, the Greek evidence shows unambiguously that the root under discussion should be reconstructed **H₂sus-* and not **saus-*. It has become customary to write a PIE verbal root in the full grade. I believe, however, that in our case there is good reason to depart from this usage, as **H₂sus-* is not a verbal but a nominal root. Considering all derivatives of the root in the separate languages we can claim that everywhere the adjective ‘dry’ is primary, and the verb ‘to be, become dry’ is secondary.

This is evident for Greek (*αῦος* ‘dry’ and denominatives *αὐαίνω* and Hdn. *αῦω*, for which see Chantraine 1968: 141) and Germanic (OE *sēar*, MLG *sōr* ‘dry’ and denominative OHG *sōrēn*). In Indo-Iranian the situation is as follows: the adjective ‘dry’ is common to all Indo-Iranian languages (Skt. *śúṣka-*, Av. *huška-*, OP *uška-* n. ‘land’, etc. < PIr. **suš-ka-*), but the verb occurs only sporadically, has no old derivatives³⁾ and no common present. In Sanskrit we

²⁾ Prof. C.J. Ruijgh writes me that one can think of a popular etymology. If *αῦος* was felt by the Greeks as ‘waterless’ (cf. *ἄνυδρος*), it might have received the regressive accent of the compounds.

³⁾ One cannot draw conclusions from the coexistence of epic Skt. *śoṣa-* and Oss. (Ir.) *xus* because these are productive formations and may have been built at any stage of the development of the Indo-Iranian languages.

have an active *-ya*-present (in the Ṛgveda only a hapax in a late Anhangslied 7,104), in Avestan a middle thematic present (hapax Yt.13,66 *haošātaēča* 3 sg.subj. and med.part. *a-ṇhaošmna-*). There are further no finite forms of the root in Old Iranian, while in Sanskrit we find only Caus. *śoṣáyati* (AV+) 'to make dry up', which conforms to the productive pattern (Jamison 1983: 138 ff.). There is even no *-ta*-participle, and according to the grammarians (Pāṇ. 8,2,51) Sanskrit used *śúṣka-* in this function. The usual explanation that an old **śuṣta-* was ousted by *śúṣka-* (e.g., Wackernagel-Debrunner 1954: 566) is arbitrary and cannot be maintained. It is much more probable that there never was a form **śuṣta-* and that the verb *śuṣ-* was derived from the adjective and not the other way round.

This view is corroborated by the formation of IIr. **suṣka-*. Since **suṣka-* was considered a derivative of the root **suṣ-*, one had to postulate a deverbative suffix *-ka-*. As is generally known, the suffix *-ka-* is strictly denominative in Indo-Iranian with only two exceptions (Wackernagel-Debrunner 1954: 533 f.): IIr. **suṣka-* and Skt. *ślóka-* m. 'noise, song of praise'. Now if we assume that **suṣka-* is denominative too, we get rid of one of the exceptions. In my opinion, *ślóka-* may be denominative as well (alternatively, one can think of a Reimbildung to *róka-*, *śóka-*, Wackernagel-Debrunner 1954: 334). If this is correct, we arrive at a PIIr. adjective **suṣ-* 'dry', on which both **suṣka-* and the verb **suṣ-* are based.

The Balto-Slavic evidence also points to the primary character of the adjective. In Slavic, the inchoative **sъxnŋti* 'to become dry' and the factitive **suṣiti* 'to make dry up' (Russ. *sóxnut'*, *suṣít'*) relate to **suxъ* 'dry' exactly in the same way as denominative verbs do to an original noun (cf. Vaillant 1966: 241 f.). Compare: **glъxnŋti*, **gluṣiti* 'to become/make deaf': **gluxъ* 'deaf'; **xrъ(m)ŋti* 'to become lame': **xromъ* 'lame'; **slъ(p)ŋti*, **slěpiti* 'to become/make blind': **slěpъ* 'blind', etc.

This semantic and formal correlation provides a strong indication for the secondary nature of **sъxnŋti* and **suṣiti*. Also Lith. *sùsti* (with its present *sĩsta*) follows the pattern of denominative verbs (cf. Stang 1966: 341 f.), which holds true for the Latvian verb as well.

6. The considerations presented in the previous section show that there has been no common PIE verbal root **H₂seus-* and that the verb 'to dry' is derived from the adjective in the separate languages. This adjective I tentatively denote **H₂sus-*, deferring the discussion of its ablaut and inflection to § 8. Let us now turn to the derivation of this word.

It seems hardly open to doubt that **H₂sus-* must be connected with the root **H₂es-*, appearing in Pokorny 68 f. as **āś-*. Although this root is mostly glossed 'to burn, glow', its original meaning should rather be 'to be dry'. Such is the meaning of the verb **āś* in Latin (*āreō*) and Tocharian (AB *ās-*), the only two languages which preserved the verb. Furthermore, the enlarged root **az-d-* (Gr. *ἄζω* < **azd-(i)ō* 'to dry', *ἄζαλέος* 'dry'; Czech *ozditi* 'to dry malt', Lat. *assus* 'dried up, stewed' if from **azd-tos*) has this meaning too. Lat. *āridus* 'dry' also points in this direction.

The root **āś-* is glossed 'to glow, burn' in the etymological dictionaries because of its derivatives with the meanings 'ashes' (Skt. *āśa-*, Goth. *azgo*, OIc. *aska*, OHG *asca*, etc., Arm. *ačün*), 'fire-place, altar' (Lat. *āra-*, Hitt. *haššā* 'hearth, fire-place', ON *aRina*, OHG *essa*), and 'free place' (Lat. *ārea*). However, all these meanings can easily be derived from the basic meaning 'to dry', as drying implies either drying in the sun or on fire. Accordingly, both ways of drying are often combined in one verb, cf. English, *parch*, *scorch*, German *sengen*, etc. Also Lat. *ardēre* 'to burn' which is derived from *āridus* 'dry' points to the close relationship between the notions 'to dry' and 'to burn'.

The vowel quantity of the root **āś-* has not been elucidated. Today we are no longer satisfied with the laconic notation **āś-* of the etymological dictionaries. Reconsidering the evidence, we see that the long *ā* is limited to Skt. *āśa-* and Lat. *āreō*, *āra*, *āridus*, *ārea* (for Tocharian see the next section). As Skt. *āśa-* is ambiguous (it can also go back to **H₂oso-*), only Italic *ās-* (cf. Osc. *aasaī* 'in ara', Umbr. *ase* 'arae') unambiguously points to a long *ā*. I think the most probable explanation is that Italic has generalized the long vowel of the reduplicated perfect. 'To be dry, dried up' denotes an achieved state, which is the meaning expressed by the PIE perfect, so that it seems probable that Ital. **ās* is derived from the perfect (tantum?) of the root **H₂es-*.

7. The assumption of an original perfect from the root **H₂es-* is indirectly corroborated by the Tocharian evidence. This matter, however, goes beyond the scope of the present paper, so that I shall only discuss the main points.

Both Tocharian A and B have a class IV present of the root *ās-*: A *asatār*, B *osotār*. The root vocalism and the timbre of the thematic vowel in this present class have not yet received a satisfactory explanation. The extant theories mostly postulate an ad hoc vowel harmony, which is not convincing.

In my opinion, the right solution to this problem was indicated by Prof. Kortlandt in his course on Tocharian in 1981–82. As he is not going to publish it in the near future, he authorized me to present his views to the scholarly community.

According to Kortlandt, A *a* B *o* point to Proto-Tocharian (PT) **o* which either goes back to PIE **ā* in open syllables/PIE **ō* in closed syllables (Kortlandt apud Beekes 1985: 208), or represents a PT **e* (< PIE **o*), labialized by **w* in the same or in the following syllable. It is clear that in our case only the labialized PT **e* is relevant. This means, that we must reconstruct PT **eswetr* > **oswotr* > A *asatār*, B *osotār*. An additional argument in favour of the PT verbal suffix **-we-* in class IV presents is provided by the verb A *sparc-watār* B *sporttotār* (class IV) 'to turn', where the present formant **-we-* in combination with the root-final *-t* yielded the cluster PT **t'w'e* > A *-cwa-*, B *-tto-* (for the palatalization see below).

As there were no *-uo-*presents in PIE, the origin of the PT suffix **-we-* must be sought in an inner-Tocharian development. The endings of class IV are identical with class III, which goes back to the thematic middle (the difference in the timbre of the thematic vowel is now explained by the preceding **w*). Class IV can therefore be considered as a subgroup of class III. This indicates a possible solution, viz. that the endings of class III may have been added to a form in **-w* (**-u*). Kortlandt suggested that it was the nom.sg. of the preterite participle (PIE perfect participle), where PIE **-wōs* yielded PT **-u* > AB *u*. This explanation accounts for both the root vocalism of class IV presents (Tocharian preterite participles have often generalized the root vocalism of the perfect) and the occasional palatalization of a root-final consonant (A *sparcwatār* B *sporttotār* 'to turn', A *klawantār* B *kloyontār* 'to fall') which is not unusual for the preterite participles. Also semantically the 'perfect' origin of class IV is in agreement with the Tocharian facts: the roots with class IV presents in both A and B often have meanings which are suitable for an old perfect, cf: 'to stop, fall, become dry, stumble, be pleased, be capable, turn' and three verbs of 'speaking': 'to praise, proclaim, flatter' (Jasanoff 1978: 27).

Accordingly, the Tocharian evidence also points to an old perfect of the root **H₂es-*, which in combination with the Latin evidence makes it probable that this root was originally a perfect tantum.

8. The old perfect of the root **H₂es-* provides the key to the derivation of the adjective **H₂sus-*. I believe that originally **H₂sus-* was the perfect participle of the root **H₂es-*. Semantically, this fits very

well, as the perfect participle of **H₂es-* should mean 'dried up'. A comparable development of an original perfect participle to an adjective is found in Lat. *vetus* 'old', Lith. *vėtušas*, OCS *vetъxъ* 'id.' (cf. Beekes 1985: 59 f.)⁴).

The inflection of the perfect participle has recently been discussed by Beekes (1985: 57 ff.), who reconstructs the following paradigm:

Nom. <i>CéC-us</i>	or, in our case, <i>H₂es-us</i>
Acc. <i>CC-ués-m</i>	<i>H₂s-ués-m</i>
Gen. <i>CC-us-ós</i>	<i>H₂s-us-ós</i>

This paradigm directly explains Gr. *αῖος* < **H₂susos* from the genitive. Indo-Iranian introduced the zero grade of the root into the nominative (as it did, for instance, in Skt. nom.sg. *vidúṣ* 'knowing' = Av. *viduš*, cf. Beekes 1985: 14 and 209 f., later rebuilt to *vidvān*). The new nominative **H₂sus* yielded IIr. **suš-* from which **suška-* was formed. Lat. *sūdus*, if from **suz-dos*, is probably based on the same nominative.

The pre-form of the Balto-Slavic and Germanic words, **H₂sousós*, is difficult, since it cannot directly be derived from the above paradigm. However, the final accent of Balto-Slavic and Germanic (see § 4) betrays the recent character of the full grade in the root. I therefore assume that the *o*-grade was introduced into **H₂susós* in order to conform to the usual pattern of the *o*-stem adjectives. This must have happened at the stage when the connection between this word and the root **H₂es-* was no longer felt. An important factor in this process was the absence of the verb **H₂es-* in both Balto-Slavic and Germanic (with the exception of several derivatives in Germanic which could hardly play a role).

9. The theory presented here has the additional advantage of accounting for the impossible root structure of **H₂sus-*. Two equal consonants (probably, with the exception of laryngeals) do not occur within a root (Benveniste 1935: 170). Although this rule is formulated for *C₁eC₂*-roots, it also holds true for larger roots. Strangely

⁴) Yet another example may be Skt. *Pṛṣāṇ-*, Vedic god, protector of cattle and roads, which is probably connected with the Greek god *Πᾶν*, Arc. *Παονι* (IV BC). Beekes (1972: 36 f.) has suggested a derivation from the root **peH₂-* 'to pasture cattle, protect'. He reconstructs a paradigm Nom. **peH₂-us-ōn* (*Παονι*, Ill. *Pauso*), Gen. **pH₂-us-n-os* (Skt. *Pṛṣāṇ-*), but he does not account for the two enlargements *-u-* and *-s-*. I believe that we can assume a perfect participle Nom. **peH₂-us*, Gen. **pH₂-us-os*, later rebuilt into an *-n*-stem, following the pattern of **poH₂i-mōn* (Gr. *ποιμήν*, Lith. *piemiū*).

enough, this drawback of the reconstruction **saus-* has never, as far as I know, been stressed.

10. Conclusions:

1. Gr. *αῦος* 'dry', which is the only ground for reconstructing an *-a-* in the root **saus-* 'to be dry', does not go back to **hauhos* < **sausos*, but to **ahuhos* < **H₂susos*. This is indicated by the reflexes of this adjective in the Greek dialects and by the hiatus in *ἀὐσ-ταλέος* 'dry', which contains the same root.

2. Consequently, the PIE root for '(to be) dry' must be reconstructed as **H₂sus-*, not **saus-*, which eliminates one of the most 'certain' examples of the phoneme **a* in Proto-Indo-European.

3. **H₂sus-* is not a verbal root, but an adjective 'dry'. The verbs 'to be, become dry' were derived from it in the separate languages. The adjective **H₂sus-* should be considered an original perfect participle of the root **H₂es-*, which probably was a *perfectum tantum*.

University of Leiden
Faculteit der Letteren
Leiden/Niederlande

Alexander Lubotsky

References

- Bechtel, Fr 1914 *Lexilogus zu Homer* Halle, Max Niemeyer
 Beekes, R S P 1969 *The Development of the Proto-Indo-European Laryngeals in Greek* The Hague, Mouton
 – 1972 'The Nominative of the Hysterodynamic Noun-Inflection', *KZ* 86 30–63
 – 1985 *The Origins of the Indo-European Nominal Inflection* Innsbruck, IBS
 Benveniste, E 1935 *Origines de la formation des noms en indo-européen*, I Paris, Adrien Maisonneuve
 Brugmann, K/Thumb, A 1913 *Griechische Grammatik* Munchen, Beck
 Illich-Svitych, V M 1979 *Nominal accentuation in Baltic and Slavic* Cambridge, Mass., The MIT Press
 Jamison, St W 1983 *Function and Form in the -áya-Formations of the Ríg Veda and Atharva Veda* Gottingen, Vandenhoeck & Ruprecht
 Jasanoff, J 1978 *Stative and middle in Indo-European* Innsbruck, IBS
 Kiparsky, P 1967 'Sonorant clusters in Greek', *Language* 43,3 619–635
 Kortlandt, F H H 1975 *Slavic accentuation A study in relative chronology* Lisse, Peter de Ridder
 Peters, M 1980 *Untersuchungen zur Vertretung der indogermanischen Laryngale im Griechischen* Wien, Verlag der Österreichischen Akademie der Wissenschaften
 Mayrhofer, M 1981 *Nach hundert Jahren Ferdinand de Saussures Fruhwerk und seine Rezeption durch die heutige Indogermanistik* Heidelberg, Carl Winter

- Rix, H 1976 *Historische Grammatik des Griechischen* Darmstadt, Wissenschaftliche Buchgesellschaft
- Ruijgh, C J 1967 *Études sur la grammaire et le vocabulaire du grec mycénien* Amsterdam, Adolf M Hakkert
- Sommer, F 1905 *Griechische Lautstudien* Straßburg, Karl J Trubner
- Stang, Chr S 1966 *Vergleichende Grammatik der baltischen Sprachen* Oslo, Universitetsforlaget
- Turner, E G 1976 'A Fragment of Epicharmus' (or 'Pseudoepicharmea?'), *Wiener Studien* 89 (N F 10) 48–60
- Vaillant, A 1966 *Grammaire comparée des langues slaves III Le verbe* Paris, Klincksieck
- Wackernagel, J/Debrunner, A 1954 *Altindische Grammatik Band II, 2 Die Nominalsuffixe* Göttingen, Vandenhoeck & Ruprecht