Remaining Issues Concerning **ɾ*

Introduction

The preceding chapters have provided us with the framework within which various kinds of remaining evidence for **ɾ* can be discussed. The purpose of the present chapter is to tie up these loose ends.

First, I will discuss three sorts of potential counterevidence against a regular reflex *-αɾ-* in Ionic-Attic: words with *-ρᾱ-* < **ɾ* before *-σ-* (section 9.1), three problematic verbs with a root of the structure *CraC-* (section 9.2), and some possible evidence for *o*-vocalism in Ionic-Attic (section 9.3). Next, I will look at the evidence for two special environments in all dialects: **ɾ* before nasals (section 9.4) and word-final **ɾ* (section 9.5), in both cases with special attention to relative chronology. Further possible evidence for the reflex *-αɾ-* in isolated nominal formations is gathered in section 9.6, where some additional examples are presented. Finally, I will give an overview of remaining evidence that can be left aside for various reasons (section 9.7).

9.1 The Development of **ɾs-* in Ionic-Attic

Some words with etymological **ɾs-* have *-ρᾱ-* as the outcome before *-σ-*. The reason to treat these words together are the problems surrounding the adjective *θρασύς* ‘bold’ (section 4.5). There are two basic options to account for the form *θρασύς*:

- a conditioned sound change **ɾ > -ρᾱ-* | *_s* (*θρασύς* the regular Proto-Ionic form);
- an unconditioned change **ɾ > -αɾ-* (*θρασύς* an artificial epic creation).

Since *θρασύς* is attested also in Ionic-Attic prose, it seems an important piece of counterevidence against a Proto-Ionic vernacular change **ɾ > -αɾ-*. The arguments for considering *θρασύς* an artificial creation of Epic Greek are as follows (cf. section 4.5). First, the spread of *a*-vocalism through the derivational system of *θάρσος*, *θαρσέω*, *θαρσύνω* presupposes the existence of an adjectival base form with *θαρσ-*. The adjective that is derivationally related to these forms synchronically in Homer is *θαρσαλέος*, not *θρασύς*. However, *θαρσαλέος* was probably influenced in its root vocalism by *θάρσος*, because old and isolated cases of *-αλέος* have an *e*-grade root. Therefore, it would make good sense if the replacement of

the *e*-grade root took place under influence of **θαρσύς*. Secondly, in Homer the factitive verb *θαρσύνω* was probably derived from a *u*-stem adjective, but the base form was not *θρασύς*, which has a different root shape (cf. *DELG* s.v. *θρασύς*); in Attic *θρασύνω* is clearly a recent creation.

As we have seen, there are concrete indications suggestive of an epic origin of *θρασύς*. The *McL* scansion in the Homeric formula *θρασειάων ἀπὸ χειρῶν* in combination with the archaic meaning points to a pre-form **tʰɣsu-* with Epic **ɣ* (section 6.8.8). Furthermore, the same traditional form **tʰɣsu-* may have been preserved in onomastic material and in compounds because it offered a metrical alternative to *θερσι-*. Finally, in Homer *θαρσαλέος* has various meanings matching those of Attic *θρασύς*. Of course, none of this really proves that *θρασύς* did not also exist in the Attic vernacular, but the material does suggest that *θρασύς* is old in the epic tradition. Given its martial meaning ‘bold, daring, reckless’, it would not be surprising if *θρασύς* was borrowed from the epic tradition into the vernaculars.

In theory, an alternative way to account for *θρασύς* would be scenario (1), but assuming a conditioned phonological development would require further underpinning in terms of phonetics. Let us therefore first review the entire evidence for **-ɣs-*, in order to see whether *-ρασ-* is really the expected outcome of this sequence. Before this can be done, it is necessary to resolve a preliminary issue. If intervocalic **s* underwent an early lenition to **h* in Greek, why wasn’t the pre-form of *θρασύς* affected? A possible answer to this question, proposed by Forbes (1958), could be that **-ɣsV-* was (perhaps under certain conditions) exempted from the lenition. In order to judge the likelihood of such a scenario, we must first consider the lenition **s* > *h* after syllabic nasals.

9.1.1 The Development of **NsV-*

An etymological **s* is retained after a syllabic nasal in *δασύς* ‘hairy, densely grown’. This retention is odd in two ways. From a phonetic viewpoint, one would not expect a preceding nasal vowel to inhibit the lenition. Furthermore, in other zero grade reflexes of the PIE root **dens-* in Greek, the final **-s-* was in fact lenited. The verbal root is represented by the reduplicated pres. διδάσκω ‘to teach’ (whence the secondary aor. διδάξαι), by the Homeric aorists δαῖναι ‘to learn’, δέδαε ‘taught’, and in the first member of δαῖφρων ‘prudent’. The verb has clear cognate formations in Iranian.¹ In view of these forms, it cannot be

1 Old Av. 1sg. pres. mid. *dīdaijēhē* ‘I learn’, 3sg. inj. pres. act. *didqs* ‘teaches’. The Vedic causative stem *damśāya-* is probably secondary.

doubted that **-NsV-* underwent a regular lenition to **-NhV-*, probably independent of the position of the accent.²

Since *u*-stem adjectives could not be formed out of the blue in Greek, δασύς clearly continues an old and inherited formation.³ Moreover, **dṛs-u-* served as the basis for another adjective δαυλός (or δαῦλος) 'dense, hairy, shaggy' < **dṛs-u-ló-*, again with regular lenition.⁴ But how to explain the retention of -σ- in δασύς? Neither expressive gemination (Szemerényi 1954: 261) nor a "double treatment" of **-NsV-* (*DELG* s.v. δαυλός) offers a satisfactory solution.⁵ The retention of -σ- can be explained, however, if we suppose that δασύς was levelled from an ablauting paradigm **déns-u-*, **dṛs-éu-*. It may be assumed that the lenition **s > h* in intervocalic position took place before the first stages of the first compensatory lengthening started to affect intervocalic -Ns-.⁶ If so, **dṛh-eu-* could be restored as **dṛs-eu-* on the basis of the strong stem **dens-u-*. In δαυλός, the -s- was not restored because the paradigm was non-ablauting. Thus, the pair δασύς beside δαυλός is best interpreted as evidence for a retention of paradigmatic root ablaut in the *u*-stem adjectives in Proto-Greek.⁷

Interestingly, the Hittite cognate *daššu-* 'strong, powerful; heavy, well-fed; difficult, important' equally points to a pre-form **dens-u-*, with a full grade root, in view of its geminate sibilant (cf. *EDHIL* q.v.). An etymological relation between *daššu-* and δασύς is often doubted,⁸ but in reality the meanings are certainly compatible: if the basic meaning was 'thick', this could develop into 'heavy, well-fed' and then into 'important, powerful', on the one hand, and into 'dense' on the other.⁹ Indeed, one of the meanings of Lat. *dēnsus* is 'thick'. In δασύς, the meaning 'thick, dense' was apparently restricted to animal hairs and the foliage of trees.

In my view, the verbal root **dens-* 'to learn, become skilled' and the root contained in the adjective **dens-u-*, **dṛs-eu-* 'dense' are etymologically identical.

2 For a discussion of further evidence for **-NsV-*, see Manolessou and Pantelidis (2011). In my view, there are no sufficient grounds for their claim that the position of the accent influenced the development of **-NsV-*. The etymological connection between ἄσις 'mud' and Skt. *ásita-* 'dark' and/or Hitt. *hanzana-* 'black(?)' cannot be relied upon: see *EWAlia* and *EDHIL* s.vv.

3 The Latin cognate *dēnsus* 'thick, dense' may continue **dṛs-ó-* or **dens-o-*; in my view, a direct counterpart of δασύς is Hittite *daššu-* 'thick, heavy, strong, etc.'; see below in the main text.

4 On the accentuation, see Radt (1982 and 1994) and Probert (2006: 368); on the reconstruction, see Lamberterie (l.c.), Schwyzler (1939: 307), *GEW* and *DELG* (both s.v. δαυλός).

5 Szemerényi accepts Meillet's view "that -σ-, earlier -σσ-, is due to expressivity", while deriving δαυλός from **dṛsulo-*. This view is accepted by Lamberterie (1990: 702).

6 For this idea, see also Nikolaev (2010: 238–239, 241, with references to earlier literature).

7 For further evidence for reconstructing PD ablaut in *u*-stem adjectives, see section 4.1.1.

8 See e.g. *EDHIL* s.v. *daššu-*, *EDL* s.v. *dēnsus*.

9 Cf. also section 4.3.1 on the semantics of ταρφύς and τρέφω.

Although a semantic development from ‘dense’ to ‘skilled’ may seem odd at first sight, suggestive parallels are found in Greek. Beside πυκνός, πυκινός ‘close-fit, dense’ and πύκα ‘closely fit, frequently’, πυκιμήδης ‘shrewd’ literally means “with dense plans”; cf. also πυκινόφρων “with dense mind”. And whereas λάσιος normally means ‘hairy, densely grown’, the Homeric formula λάσιον κῆρ can be understood as denoting a clever mind. Nussbaum (1976: 69) already drew attention to the following verses:

δαυλοὶ γὰρ πρᾶπιδων
δάσκιοί τε τείνουσιν πόροι (...)

A. Supp. 93–94

For dense and heavily shadowed the ways of his mind stretch out

Thus, the verbal root **dens-* may have originally referred to a specific type of cognitive or rhetorical skill; it underwent a semantic development from ‘thick’ to ‘complicated’, hence ‘skilled, experienced’ (of the mind).¹⁰ Interestingly, one of the meanings of Hitt. *daššu-* is ‘difficult’, which may be an intermediate stage of the semantic development seen in the verbal root. In this way we may also explain how the first compound member **d̥ns-i-* (reflected in δαῖφρων) corresponds semantically to Ved. *dasrá-* and OAv. *dayra-* ‘wise, skilled’ < **d̥ns-ró-*. These Indo-Iranian adjectives were derived from the verbal root relatively late; δασύς and Hittite *daššu-* belong to an older stratum of derivatives.¹¹

9.1.2 Retained -σ- in Words Reflecting **-rs-*

In a number of Greek words, a surfacing intervocalic -σ- seems to derive from a pre-form containing a sequence **-rs-* (e.g. θρασύς). Manolissou & Pantelidis

10 We may also compare the use of adjectives like ποικίλον ‘complicated’ (*Od.* 8.448), παντοίην ‘manifold’ (*Od.* 6.223) to qualify an object of learning in Homer (*LfgRE* s.v. δαίηται). In my view, the motivation for this reinterpretation ‘dense’ > ‘skilled, clever’ may have been, specifically, that the verb referred to the ability of speaking and deliberating. The language of a clever speaker is literally impenetrable: a complex and intricately woven web of words and their potential references. By contrast, someone whose words can be straightforwardly unraveled (and whose plans can therefore be easily seen through) is shallow and therefore unskilled as a speaker.

11 The etymological identity of δῆνεα ‘plans, wiles’ with Ved. *dāmsas-* ‘skill’, Av. *dayhah-* cannot be doubted. Both the Greek word and the Avestan phrase *hizuuō dayhah-* ‘skill of the tongue’ confirm that speaking and deliberation are prototypical skills denoted by the PIE root **dens-*. For the debate on the exact reconstruction of δῆνεα (does it reflect PIE **dens-es-* with a dialectal reflex of the 1st CL, or the Ionic reflex of a reshaped Proto-Greek pre-form **dans-eh-*?) see Hackstein (2002: 185–186) with further literature.

(2011) have reconsidered all the alleged cases of **-rs*-.¹² The following examples are candidates to have retained the sibilant:

- θρασύς ‘bold’ (cf. θάρσος ‘perseverance, courage’, etc.);
- τρασιά ‘hurdle for drying figs’, ταρσός ‘hurdle for drying cheese; sole of the foot’;
- πράσον ‘leek’;
- γράσος ‘smell of a goat’ (γρώ ‘to eat’);
- the dat. pl. in -ράσι of *r*-stem substantives, e.g. πατράσι, θυγατράσι, ἀνδράσι;
- ἄρσῃν ‘male’.

The idea that the sibilant developed differently, depending on whether the liquid was syllabic or consonantal, was first proposed by Forbes (1958: 249–250). In her scenario, intervocalic **-rs*- first underwent voicing, while intervocalic **-s*- (also after syllabic liquids) was at first retained (and lenited to *h* later). Thus, **d^hrsu-* was retained when **d^hers-* developed to **d^herz-*, and later on **d^hrsu-* caused a reshaping **d^herz-* >> **d^hers-*. In this way, Forbes wishes to explain why various cases of **-rs*- take part in the 1st compensatory lengthening. In order for this scenario to work, she must assume (among other things) that the lenition of **-s*- took place after the vocalization of **r*, which is chronologically highly unlikely, if not impossible. Moreover, she did not systematically examine all words with -*ρα*- < **-r*-. In my view, the explanation proposed by Wackernagel (1888) for the twofold reflex of intervocalic **-Ls-* is still the most likely one: **-Ls-* was retained only when directly preceded by a syllabic nucleus carrying the lexical accent, and otherwise developed to -*L-* with compensatory lengthening of the preceding vowel.¹³

Two other explanations are conceivable for the retention of -*σ*- in the forms just listed. First, it is possible that **-s*- regularly underwent lenition also after **r*, and that instances of retained -*σ*- were analogically restored from cognate forms with a full-grade root.¹⁴ In essence, this would be the same explanation

12 Most handbooks and historical grammars, e.g. Lejeune (1972), Rix (1992), or Sihler (1995), do not discuss the issue. The problem is only briefly mentioned in Schwyzler (1939: 307, with marginal references to older literature), who remarks that in **-rsV-* “σ wenigstens zunächst erhalten zu sein [scheint]”. What he means by “zunächst” is unclear: if -*s*- was retained in this position when the intervocalic lenition took place, there is no reason to assume that it was lenited a second time.

13 The evidence of the (pseudo-)sigmatic aorists is complicated and cannot be discussed in detail here, but at the very least it can be reconciled with Wackernagel’s idea (cf. Miller 1976). As Miller observes, the middle τέρομαι ‘to become dry’ is strong evidence against the claim by Forbes (1958) that **-Ls-* was regularly reduced to -*L-* with compensatory lengthening. See now also Batisti 2017a.

14 Lamberterie (1990: 701ff.).

proposed above for δασύς beside δαῖναι. In the pre-form of θρασύς, the -σ- may have been reintroduced from forms with a full grade **t^hers-* (where the lenition would not have taken place), whether such forms were present in the adjectival paradigm itself or introduced from cognate formations such as **θέρσος* (later >> Ion.-Att. θάρσος).¹⁵

A second possibility is that **-ʃs-* escaped the lenition of intervocalic **s*, i.e. that **ʃ* behaved differently compared to full vowels. Phonetically, it would be conceivable that **s* had a retroflex realization after **ʃ*: compare the distribution found in Avestan, where **s* was lenited to *h* in intervocalic position, whereas in **ʃsV-* its allophonic realization [ɕ] *vel sim.* (due to the *ruki*-rule) escaped the lenition.¹⁶ There is no concrete indication that such an effect was operative in an early form of Greek, but there is no principled reason to exclude this scenario on forehand.

Examining the evidence, however, there appear to be two potential pieces of evidence in favor of a lenition **-ʃsV- > *-ʃhV-*. Lamberterie (1990: 701–703), taking up a suggestion by Wackernagel, argued that τραυλός ‘lisp[ing], stammer[ing]’ continues a pre-form **tʃs-u-ló-*, an adjective in -λό- derived from the weak stem of the PIE *u*-stem adjective **tʃs-ú-* ‘dry’.¹⁷ For the semantic development, he points to ισχνόφωνος ‘stammering’, which literally means “with a dried up voice”, and which appears in conjunction with τραυλός in Hdt. 4.155. A second relevant form is γράω ‘to eat’, which could be derived from a zero grade thematic formation **grs-e/o-*, to be compared with the Vedic root *gras* ‘to devour’. As we will see below, however, this second example may reflect a different pre-form **gr̥ns-*, rather than **grs-*.

If the lenition of **s* took place early enough, it would be possible to ascribe its retention in **tʃs-ó-* (underlying τρασιά and ταρσός), in θρασύς, and in the dat. pl. in **ʃsi* (ἀνδράσι, πατράσι) to an analogical reintroduction of **s* from post-consonantal forms. The issue therefore depends on our evaluation of τραυλός as an example in favor of lenition, and of πράσον and γράσος as counterexamples.

15 Manolossou and Pantelidis 2011 posit the same rule for **-NsV-* and **-ʃsV-*: retention of -s- only when the accent follows (as in δασύς and θρασύς), lenition in other cases. In my view, the evidence does not warrant such a drastic solution. It is problematic that Wackernagel’s rule for intervocalic **-Ls-* (1888), where only a directly *preceding* accented syllable causes the -s- to be preserved, predicts exactly the opposite.

16 Cf. Hoffmann and Forssman 2004: 91 and 104.

17 For the type of formation, cf. e.g. δαυλός, λιγυρός, γλαφυρός (the latter two by liquid dissimilation); see also section 10.4.3.

9.1.3 *The dat. pl. in -Cpási*

In the dative plural of ablauting *r*-stems, we find ἀνδράσι and ἀστράσι (both Hom.+), θυγατράσι (Hes. fr. 165.7+), and the much rarer forms πατράσι, μητράσι, and γαστράσι. Instead of θυγατράσι Homer uses θυγατέρεςσι (with metrical lengthening of the first syllable), which may be an artificial creation.¹⁸ The Mycenaean form *tu-ka-tə-ši* or *tu-ka-ta-ši* (MY Oe 112.2) is badly readable. If the underlying phonological form contains an anaptyctic vowel, it arose before the liquid, but the Mycenaean evidence also allows the conclusion that /r̥/ was retained (see chapter 2).

It is possible that Hom. ἀστράσι and ἀνδράσι show the regular development of a pre-form with Epic *r̥, in view of their respective dactylic pre-forms *astr̥si and metrically lengthened *ānr̥si for tribrachic *anr̥si (see chapter 7). In the vernacular, forms like ἀνδράσι and θυγατράσι are not probative for the development of *r̥ either, because other weak case forms had a zero grade of the suffix, too (cf. dat. sg. ἀνδρί, θυγατρί). It is therefore conceivable that e.g. *andr̥si was preferred over *anars̥si so as to avoid introducing a new stem allomorph.

No firm conclusions can be based either on the dative forms of 'four'. Classical Attic has τέτταρσι, and Ionic and the Koine have τέσσερσι; both forms were analogically influenced by the nom. pl. τέτταρες or τέσσερες, respectively. A relic form τέτρασι is attested in Early Greek Epic (Hes. fr. 294.2, Aegimus fr. 5.2) and in Pindar. This form is the outcome of Proto-Greek *k^wetursi > *k^wetr̥si (see section 2.6), and in view of its exclusively poetic attestation it may show the development of Epic *r̥. The Attic dat. pl. τέτταρσι cannot be the outcome of *k^wetursi by sound change, since the vocalization to -αρ- was posterior to the loss of *-u- before *r̥. It is possible that *k^wetr̥si was vocalized as Proto-Ionic *k^wetarsi > *k^wetarsi, perhaps under influence of stem-forms with a full grade like *k^wetuer-, and that *-tu- (or its reflex) was subsequently reintroduced. Finally, the vocalism of the dat. pl. may have been generalized in Att. τέτταρες; this would explain the difference with the Ionic and Koine form τέσσερες.¹⁹

18 Note that the dat. pl. forms in -ράσι cannot be used as evidence for or against an accent-conditioned development of *r̥. At first sight, one could think that ἀνδράσι and ἀστράσι preserve an inherited accentuation, in view of Vedic *pitṛbhyas* (RV), *pitṛsu* (AV) and *nṛ̥su*. However, the accent of the Greek forms could theoretically also be due to Wheeler's Law (retraction of a final accent to the penultimate syllable in a word of dactylic structure), in which case the development would be PGr. *patr̥si (with the expected accentuation of the loc. pl. ending) > *patras̥i > πατράσι. Moreover, the accent of the Vedic forms can be due to columnarization after the other case forms, and the same can be assumed for the Greek paradigm (cf. πατέρες, πατρῶν and the discussion in Meier-Brügger 1992b: 288).

19 See Stüber (1996: 117–118). With McCone (1993: 54), she assumes that the suffix allomorph -αρ- in τέσσαρες originated in the dative, but neither of them notes that the outcome -σσ-, -ττ- < *-tu- (rather than -τ- as in τέτρασι) is unexpected.

9.1.4 γράσος and γράω

Since Solmsen 1909: 228–235, it is thought that γράσος ‘smell of a he-goat’ (Eupolis, Ar., etc.) derives from the root of γράω ‘to eat’ (cf. *DELG* s.v. γράσος). Indeed, as Solmsen notes, the closely-resembling τράγος ‘he-goat’ (*Od.*+) is also attested with the meaning ‘smell of a he-goat’, and the same is true of Lat. *hircus*. In line with the analysis of τράγος as reflecting **tr̥g-o-* from the root of τρώγω, ἔτραγον ‘to eat, gnaw, devour’, γράσος is supposed to reflect a **gr̥s-o-* ‘who grazes’, whence ‘he-goat’.

It must be stressed, however, that the precise ablaut relation between τρώγω and τράγος remains unclear (see section 8.1). The root reconstruction **tr̥h₃g-* advocated by Hackstein (1995: 180) casts doubts on the pre-form **tr̥go-* assumed for τράγος, and thence also on the presence of **r̥* in γράσος.²⁰ Another important issue is whether the thematic present γράω must be derived from **gr̥s-e/o-*. In order to answer this question, a brief discussion of its attestations is necessary.

- An impv. 2sg. γράσθι is assumed to be attested as *ka-ra-si-ti* in the Cypriot syllabary. The inscription where this form occurs (Masson, *ICS* 2 264) starts with *ka-i-re-te : ka-ra-si-ti : [wa]-na-xe : ka-po-ti*, which Masson interprets as follows: Χαίρετε. Γράσθι, [ῥά]ναξ, κα(ς) πῶθι, “Hail! Eat, Lord, and drink!”.²¹
- The gloss γρᾶ: φάγε. Κύπριοι Hsch. (and perhaps also καγρᾶ: καταφαγᾶς. Σαλαμίνιοι Hsch.) points in the direction of Cyprus.²²
- A verb form ἔγραε is attested in Callimachus: καὶ γόνος αἰζηῶν ἔγραε κηδεμόνα (*fr.* 551 Pfeiffer).²³ It is traditionally analyzed as an imperfect, but in view of the absence of further context, a thematic aorist cannot be excluded. Indeed, Cypriot γρᾶ is glossed with an aorist φάγε, and *ka-ra-si-ti* is probably an aorist imperative in view of its conjunction with the root aorist /pōthi/.
- The verbal root also underlies γαστήρ ‘belly’ (*Il.*+) . Its pre-form underwent dissimilatory *r*-loss (on which cf. Vine 2011), probably in the stem-form **γρᾶ-*

20 The reconstruction **tr̥h₃g-*, it is true, seems based only on the Greek present τρώγω. The thematic aorist τραγέιν would have to be an innovation; did it arise beside τρώγω under influence of φαγεῖν?

21 Similar zero grade imperative forms are φάθι ‘speak!’ < **b^hh₂-d^hi*, ἴσθι ‘know!’ < **uid-d^hi*, and especially ἴσθι ‘be!’ beside Av. *zdi* < PIE **h₁s-d^hi*.

22 The second gloss, however, is an emendation, cf. Solmsen 1909: 229. On the other hand, the formation and dialectal origin of γραίνειν· ἐσθίειν (Hsch.) remain unclear. A possible formal comparandum is δρᾶίνω, the Ionic form of Attic δρᾶω ‘to do, perform’, and on this basis Solmsen ascribes the gloss γραίνειν to Ionic. It is perhaps conceivable that the present γραίνω arose in Cyprian beside the contracted aorist form ἔγρᾶ, by analogy with pres. βᾶίνω : aor. ἔβᾶ.

23 However, the text of the first hemistich is an emendation: see Solmsen 1909: 229.

στρ-. The non-epic paradigm is nom. γαστήρ, acc. γαστέρα, gen. γαστρός, dat. γαστρί, i.e. it reflects a PIE hysterokinetic paradigm.²⁴ Such a preservation of PIE ablaut is rare in Greek: it was preserved only in a few relic words like πατήρ, but leveled out in the types σωτήρ, σωτήρος and ποιμήν, ποιμένος. This strongly suggests that γαστήρ is an inherited word.²⁵

- The gloss πολυγράω· πολυφάγω occurs in Galen's glossary of obsolete terms from Hippocrates, so is perhaps of Ionian origin.
- The etymological appurtenance of γράστις 'green fodder' (pap. 3rd c. BCE) to the above forms is uncertain. A by-form of this word is κράστις 'id.' (Ar.+), which has older attestations in Attic. Solmsen (1909: 234) assumes that the onset of γράστις was devoiced due to the voiceless onset of the next syllable; Frisk (*GEW* s.v. γράω) suggests that κρ- may be folk-etymological after an unknown word, but this assumption is gratuitous (see *DELG* s.v. γράω, with further discussion).

There are no clear instances of *-ra-* < *ḡ in Cyprian, but we do have a few good cases of *-ro-* or *-or-* < *ḡ (section 3.4). Considering also the noun γαστήρ, we must reconstruct a Proto-Greek verbal root **gras-* / **grah-*, rather than **grs-*. Since both Cyp. *ka-ra-si-ti* and γαστήρ preserve archaic morphology, we have to look for an IE origin of the root.

Given that the existence of a phoneme **a* in PIE is doubtful,²⁶ the most logical option is to reconstruct the pre-form as PIE **gr̥s-*.²⁷ This reconstruction is indeed confirmed by the etymological relatives of γράω. The only serious *comparandum* is the Vedic root *gras* 'to devour, digest', attested in *grāse-tām* (3du. impv. pres. mid.), *jagrasānā-* (ptc. pf. mid.), *grasitā-* (ta-ptc.), *grā-siṣṭha-* (superlative, 'devouring most').²⁸ It is remarkable that the root is non-

24 The by-forms gen. sg. γαστέρος (once in Hom.) and dat. sg. γαστέρι (only Hom., Hes., E.) were clearly created for metrical reasons, just like e.g. Hom. μητέρος, μητέρι.

25 Beekes' objection to this etymology that "a belly does not eat" (*EDG* s.v. γαστήρ) is not to the point: the Greek evidence, starting with Homer, shows that a γαστήρ is often a gluttonous or craving stomach, and typically envisaged as something on which a man may become dependent (hunger, gluttony). As an alternative to the traditional etymology, Beekes retains Szemerényi's speculation to connect the Callimachean word γέντα 'sacrificial meat, innards'. However, this does not account for the agent noun formation of γαστήρ.

26 Cf. Lubotsky 1989 and recently Pronk 2019.

27 The present argument does not change if one reconstructs the root as PIE **gras-* (as e.g. Sihler 1995: 153).

28 The material is discussed by Kümmel (2000: 166), as well as in the *LIV*² (s.v. **gres-*). The later Skt. causative *grāsaya-* (Br.+) is an innovation with productive *ā*-vocalism of the root. Chantraine (*DELG* s.v.) speaks of a "vieux mot populaire", which he reconstructs as **gras-*, including also Lat. *grāmen* 'grass'. However, the concept of "mots populaires" is questionable, and the reconstruction of PIE **a* is doubtful as well (see above). As an alternative,

ablauting; from a root **gres-*, Sanskrit would normally form a middle perfect *jāgrsāná-** and a *ta*-ptc. *gr̥ṣtá-**, with a zero grade root. Thus, the Vedic and Greek forms point in the same direction: a root **grens-* of which only the zero grade **gr̥ns-* is reflected.²⁹ Since the primary formations of this root are difficult to reconstruct, it is difficult to determine why and how this zero grade was generalized.³⁰

In conclusion, it appears impossible to explain the retention of intervocalic *-s-* in γράσος and its lenition in πολυγράω, ἔγραε and γρά· φάγε at the same time. Since the lenition certainly took place, we must leave γράσος out of further consideration here, whatever the ultimate explanation of its retained intervocalic *-σ-*. It is not excluded that the form contains a secondary suffix *-σος*, for which Solmsen (1909: 232) compared μέθυσος ‘drunkard’, κόμπασος ‘braggart’ and πολ-λαγόρασος ‘who sells much’, apparently all deverbal nouns with a derogatory meaning.

9.1.5 ταρσός and τρασιά, ταρσιή

The verb τέρσομαι ‘to become dry’ is attested only in Homer, together with an aor. inf. τερσῆναι, τερσήμεναι, in which the full-grade root was introduced.³¹ The normal verb in Classical Greek is the denominative ξηραίνω ‘to dry’, so τέρσομαι is clearly an archaism. What weight should we attach to the following forms with *-αρ-* or *-ρα-*?

Ion. ταρσός (m.), Att. ταρρός has a wide range of concrete meanings, which can be divided into two general categories: 1. ‘(plaited) rack for dehydrating and drying cheese’ (*Od.* 9.219, Theoc.), ‘plaited tube, mat of rushes, kind of flat basket’ (Hdt., Th., Ar.), ‘entangled roots forming a network’ (Thphr.). 2. ‘sole of the

Lat. *grāmen* could also be compared with the Germanic verb PGmc. **grōan-* ‘to grow’ (*EDL* s.v. *grāmen*). The reconstruction **γράφω* assumed by Manolessou and Pantelidis (2011: 369) is unmotivated.

29 Kümmel (*LIV*² s.v. **gres-*) remarks that “Gegen Nasal spricht jedoch *gr̥ásiṣṭha-*”, but one wonders how old this superlative really is.

30 The coexistence of middle present and middle perfect forms in Vedic could point to an older activity verb meaning ‘to devour, digest grass’. Gr. γαστήρ would be the organ that (habitually, continuously) digests. On the other hand, Cypr. γράσθι seems to be the 2sg. impv. **gr̥ns-dʰi* of a root aorist, with the zero grade of the root expected in such a formation. However, if one wishes to assume that **gr̥ns-* formed a primary aorist in the meaning ‘to eat up, consume, devour’, it must be taken into account that there are other root aorists with this meaning: Ved. *ághas*, 3pl. *ákṣan* (< **g^whes-*, but only attested in Indo-Iranian) and PIE **g^werh₃-* ‘devour’. There may well have been semantic nuances between these roots that are now beyond recovery.

31 Cf. the *u*-stem adjective attested in other IE languages: Ved. *tṛṣú-* ‘greedy’, Av. *taršu-* ‘dry’, Goth. *þaurus* ‘dry’.

foot' (*Il.* 11.377 and 388, Hdt., Hp.), thence a designation of various flat objects, e.g. 'blade, rudder', whence 'row of oars' (Hdt., Th., E.+). The appurtenance of this word to the root **t̥s*- is clear: in meaning 1., *ταρσός* could refer to any kind of object made of dried materials, especially to plaited wickerwork, and meaning 2. 'sole of the foot' is in my view best derived from 'callous skin', rather than from 'flat object' (as assumed in *GEW* and *DELG*, q.v.).³² The archaic appearance of the zero grade formation **t̥s*-ó- is matched by the wide semantic range of *ταρσός* in Greek.³³ The same IE verbal root served as a basis for Arm. *t'ar* 'stick for drying grapes etc.' (reflecting zero grade **t̥s*-) and OHG *darra* 'rack for drying fruit or grains' (*quasi* PIE **tors*-*eh*₂-).

A second etymon containing the zero grade root is the rare word *τρασιά* (Eup., Ar., S.), *ταρσή* (Semon. fr. 39 W) 'hurdle for drying figs; dried figs; place for drying cereals'.³⁴ The oxytone suffix -ιά (see Chantraine 1933: 82, Risch 1974: 116–117) creates nouns referring to a collection of objects, or to a place where such objects are collected.³⁵ As for *τρασιά*, its base form **t̥s*-ó- may have referred either to the dried aliments themselves (figs, grains, etc.), or to the baskets or items of wickerwork that were made of dry materials (cf. *ταρσός*, meaning 1.).

Now, since *τρασιά* is attested in the Classical period only in Aristophanes and in fragments of Sophocles and Eupolis, it looks like an Attic vernacular word. In this case it would be attractive to view *τρασιά* as the regular outcome of **t̥s*-iā-, and assume that *ταρσή* had its vowel slot restored after the verbal root. The same analogical restoration would then have taken place in *ταρσός*. It must be objected to this analysis, however, that *τέρσσομαι* is not a productive verb anymore in Ionic-Attic (it had been replaced by e.g. *ξηραίνω*). Moreover, the meaning of *ταρσός* 'sole of the foot; blade, rudder' was without a doubt hard to connect with that of *τέρσσομαι* 'to dry up' already for speakers of Proto-Ionic,

32 "Die auffallende Bedeutungsverschiebung zu 'Fussblatt usw.' ist von der flachen Gestalt der betreffenden Gegenstände ausgegangen. Sie wurde dadurch erleichtert, dass das primäre Verb der poetischen Sprache vorbehalten blieb und in der Prosa von anderen Ausdrücken für 'trocknen', z.B. *ξηραίνω*, ersetzt wurde" (Frisk, *GEW* s.v. *ταρσός*).

33 For the zero grade root of **t̥s*-ó-, cf. other inherited formations like *ζυγόν* 'yoke', *καρπός* 'harvest'. Note that the verb *τέρσσομαι* has lost all traces of ablaut (*τερσῆναι*, fact. aor. *τέρσηγε*).

34 Aelius Herodianus also mentions the form *θαπριά*: *τρασιά*, which may show a transfer of aspiration. The gloss *ταρσῆται: ἀγγεῖα, ἐν οἷς οἱ τυροὶ ψύχονται* 'vessels in which cheeses are dried' (Hsch.) presupposes an agent noun *ταρσήτης* 'dryer'.

35 In Homer, a collective meaning is found in e.g. *πρασή* 'garden bed with leeks', *λοφίη* 'back bristles of a boar', *σποδίη* 'heap of ashes', *ἀνθρακίη* 'heap of glowing coals'. Other forms refer to a location, e.g. *σκοπή* 'lookout place', *ἐσχατή* 'boundary, extremity'.

while *τρασιά* is still semantically and morphologically perspicuous as a “place for drying”.³⁶ In other words, given the semantic isolation of *ταρσός* ‘sole of the foot’, it is problematic to assume that a pre-form **τρασός* was influenced by *τέρσομαι* if *τρασιά* escaped this influence.³⁷

The possibility may therefore be envisaged that *τρασιά*, which in the Classical period is attested in poetic authors only, is originally an epic word which was superficially Atticized only in its suffix *-ιά*. Not only does Homer have a large number of such derived nouns in *-ή*, but in addition this formation yielded convenient dactylic forms in cases where the root ended in a short vowel plus a single consonant. There would be a clear motivation for retaining **tṛsiǎ-*: just like *καρδίη*, the form *ταρσή* (attested for Semonides) would have been ill-suited to the metrical demands of dactylic poetry. Drying hurdles are mentioned in the epics, as becomes clear from the appearance of *ταρσός* in the Cyclops-episode of the *Odyssey*.

Thus, there are two possible ways out of the dilemma sketched above. If one accepts that *-ρα-* was the conditioned outcome of **ṛ* before **s*, on account of *τρασιά*, then it must be accepted that *ταρσός* contains the restored outcome of **ṛ*. This is not unproblematic in view of the various lexicalized meanings of *ταρσός*. On the other hand, if one accepts that the poetic word *τρασιά* could be of epic origin, then *ταρσός* may simply contain the regular outcome *-αρ-* < **ṛ*, also before **s*. In my view the second option is preferable.

9.1.6 *τρήρων and τραυλός*

The form *τρήρων* means ‘timorous, shy, easily frightened’ in Ar. *Pax* 1067, where it is used in apposition to *κέπφοι* ‘a species of waterbird’. In Homer, it only occurs in combination with *πέλεια* or *πελειάς* ‘pigeon’ (*τρήρωνα πέλειαν Il.* 22.140, 23.853, 855 and 874, *Od.* 20.243, *πέλειαι τρήρωνες Od.* 12.62–63, *τρήρωνσι πελειάσιν Il.* 5.778). At first sight, then, it looks as if *τρήρων* is an adjective, but the compound *πολυτρήρων (Il.)* ‘rich in pigeons’ implies the existence of a noun *τρήρων* ‘pigeon’. Moreover, barytone nouns in *-ων-* usually refer to individuals that have the base form as a characteristic property (cf. the overview in Risch 1974: 56). It is therefore possible that *τρήρων* still was a word for ‘dove, pigeon’ in Homer, and that *πέλεια* may function as a feminine form of the adjective for ‘grey’ (cf. *GEW* s.v. *πέλεια*).

36 “Die auffallende Bedeutungsverschiebung (...) wurde dadurch erleichtert, dass das primäre Verb der poetischen Sprache vorbehalten blieb und in der Prosa von anderen Ausdrücken für ‘trock[n]en’, z.B. *ξηραίνω*, ersetzt wurde” (*GEW* s.v. *ταρσός*).

37 It is futile to discard the reconstruction **tṛsó-* in favor of a different pre-form like **tṛsu-ó-*, as *per* Forbes (1958).

At first sight, the most likely derivation of τρήρων starts from the root of τρέω 'to flee from; be afraid of, shirk' (cf. Ved. *trāsanti* 'they tremble, quiver') as **tṛs-ró-* 'easily frightened, timorous' > **trasró-* > **trāró-*.³⁸ From **trāró-*, a derivative **trārōn* 'shy guy' could be productively derived (cf. e.g. στραβός 'squinting' → στράβων 'squinter'). Indeed, the reconstruction **trāró-* is confirmed by the glosses τρήρόν· ἑλαφρόν, δειλόν, ταχύ, πλοῖον μικρόν 'nimble, cowardly, quick; a small vessel', τραρόν· τ(ρ)αχύ, and ταρόν· ταχύ (all Hsch.). The latter two prove etymological *-ā-.³⁹

If -αρ- was the regular outcome of *ḡ in Ionic-Attic, the reflex *-ra- in **trahró-* must be accounted for. To assume a conditioned change to *-ra- before *h would be phonetically conceivable (avoidance of the sequence */rh.r/), and at first sight it seems that such a development is paralleled by τραυλός 'stammering', which appears to reflect PGr. **tṛs-u-ló-* (see below). For purposes of relative chronology, it is interesting that τρήρων took part in the first compensatory lengthening, implying that the vocalization of *ḡ (and its phonologization as *ar* or *ra*) took place before the loss of -h- in sonorant clusters: **tṛsro-* > **tṛhro-* > **trahró-* > **trāró-*.

However, we must be careful not to draw rash conclusions. First of all, the pre-form **tṛhro-* would contain a highly specific phonetic environment: the expected vocalization -ar- would have yielded a consonant cluster /rhr/ that may have been avoided for phonotactic reasons. More importantly, the present **trehe/o-* > Hom. τρέω may have influenced the place of the anaptyctic vowel, also taking into account that **tarh-* would have looked like an allomorph of **ters-* 'to dry up'.⁴⁰ Another case of *ḡs followed by a sonorant is Hom. ἀρνεῖός 'ram' (Att. ἀρνεώς), which probably derives from **ḡrsn-ēu-ó-*, a thematicized form corresponding to Myc. *wo-ne-we* qualifying male sheep (Peters 1993b). Unfortunately, again there is no guarantee that **ḡrhnēu-ó-* regularly developed into **ḡar(h)nēu-ó-*, as ἀρήν, ἀρνός 'lamb' and/or ἄρσῃν 'male animal' may have influenced the vocalization.⁴¹ Returning to **τρήρός*, it is not even excluded that

38 Cf. LSJ (s.v. τρήρων), Beekes (EDG s.v. τρήρων).

39 In τραρόν· τ(ρ)αχύ, the form τραχύ found in the ms. may be due to contamination with the *definiendum* τραρόν. On the other hand, ταρόν· ταχύ (Hsch. τ 198) may reflect a linguistically real dissimilation, but other scenarios cannot be excluded. In Aristophanes, τρήρων must be an epicism because ā would be retained after ρ in Attic (cf. τρήρωνι πελείη Av. 575).

40 In fact, all traces of ablaut were eliminated from τρέω and its productive derivatives, cf. ἄτρεστος 'fearless'.

41 The problem of the lacking reflex (pace Peters 1993b) of initial digamma in Homeric ἀρνεῖός may be solved either by assuming that the word was a relatively late introduction from the Ionic vernacular into the epic tradition (see GEW s.v.), or by positing influence of ἄρσῃν 'male' and/or ἀρήν 'lamb'.

the pre-form was **trh-aro-* (> **trah-aro-*), given the limited productivity of this suffix variant in Greek (cf. ἰθαρός ‘cheerful’; West Greek ἰαρός for **His-ró-* > Hom. ἰρός ‘holy’; cf. García Ramón 1992). If this **traharo-* underwent an early loss of *h* between like vowels, the contraction product may have joined the Ionic shift **ā > η*.

Turning to τραυλός, Batisti (2017b) has recently provided an extensive discussion of the meaning and etymology of this word. He criticizes the idea that ἰσχνόφωνος serves as a semantic parallel for ‘dryness’ of voice, and instead proposes (with due caution) that its root was also **tres-* ‘tremble’, as verbs with this meaning are often used to denote speech defects. At the very least, we have to admit the possibility that a vocalized zero grade **trah-* of the root **tres-* / **treh-* exerted an influence on τραυλός. If τραυλός does not necessarily derive from **ters-* ‘to dry up’, it ceases to be a compelling example for a regular change **r > -ρα-*.

In sum, τρήρων reflects an adjective **trāró-* deriving from **tres-* ‘tremble’, but it is uncertain whether the pre-form was **trahró-* < **trhró-* or **trah-aró-*. Moreover, τραυλός may also derive from this root rather than from **ters-* ‘to dry up’; it furnishes strong evidence for a regular lenition of **s* in the environment **rsV*. In both τρήρων and τραυλός, the vowel slot of **trah-* may be analogical.

9.1.7 ἄρσην and ἀρνειός

The form ἄρσην is found in Homer, literary and epigraphic Attic, the Koine, and in Arcadian and Ionic inscriptions (Miletus, Thasus). A variant ἔρσην / ἐρσήν ‘id.’ is attested epigraphically in Lesbian, Coan, Gortynian Cretan, Messenian, and in the dialects of Epidaurus, Cyrene and Elis.⁴² It could therefore seem likely that South Greek had ἄρσην, while North Greek had ἔρσην, but it is problematic that Herodotus also has ἔρσην, contrary to the epigraphic evidence from Eastern Ionic. Moreover, the form ὀρσεν occurs in an unpublished Thessalian inscription quoted by García Ramón (2007c, cf. 2018: 40–43). Hence, it is not impossible that both root allomorphs were present in Proto-Aeolic and perhaps in Proto-Ionic. Arcadian now also attests ὀρεν (with single spelling of geminate ρρ) in a recently published festival calendar (Carbon-Clackson 2016).⁴³ Finally, as we have seen in the previous section, the noun ἀρνειός ‘ram’ (Att. ἀρνεώς) is probably related to ἄρσην, reflecting **ḡrsn-ēu-ó-*, while Myc. *wo-ne-we*, also qualifying male sheep, may reflect **ḡrsn-ēu-*.

42 Minon (2007: 200–201) doubts the dialectal authenticity of the form in Elis.

43 This form confirms that κατορρεντερον γενος ‘in the male line’ (IG V,2 262.21 and 27, Mantinea, 5th c. BCE; Dubois 1986, II: 94 ff.), on which cf. García Ramón 2018: 43 and Peters 1993b: 380, is the sandhi outcome of κατ=το=ορρεντερον.

The reconstruction of all these words is beset with difficulties. A pre-form with **u̯s-* is traditionally reconstructed for ἄρσῃν ‘male animal’ in view of the cognate Ved. *vṛṣan-* m. ‘id.; bull’, but there is no secure evidence for digamma in any of the Greek words just listed.⁴⁴ The lacking digamma reflex in ἀρνείος ‘ram’ can be ascribed to influence of the generic term ἄρσῃν, and such influence may even have taken place at a relatively recent time. In order to explain the consistent lack of evidence for digamma in Homeric ἄρσῃν, it has been assumed that its onset was influenced by that of ἔρσῃν / ἐρσήν, for instance by Peters (1993b: 378, following other scholars).⁴⁵ This presupposes, however, that the two coexisted as different words.

Peters (1993b) gives an ample discussion of previous treatments of this word and argues that ἔρσῃν / ἐρσήν is etymologically different from ἄρσῃν. Only ἄρσῃν would be related to Ved. *vṛṣan-* < **u̯s-en-*, while the homonym ἐρσήν < PIE **h₁rs-én-* is comparable to YAv. *aršan-* ‘id.’. The main problem with this reconstruction is the fact that both forms have exactly the same meaning in Greek, and also highly similar meanings in Indo-Iranian. One would have to assume that two unrelated words referring to different types of male animals were conflated. Another point is that Peters did not yet have access to the Thessalian form ορσεν. García Ramón (2018: 40–43) thinks that it can be reconciled with the scenario proposed by Peters and that it is etymologically identical to ἄρσῃν (rather than ἔρσῃν), directly reflecting **u̯s-en-* with **ḡ* > ορ and subsequent loss of initial digamma.

An alternative scenario has been proposed by Pronk (2009): in the pre-form **u̯s-en-*, **u-* would have been lost already in late PIE due to the frequent occurrence of this word in a compound **g^wh₃eu-u̯s-en-* ‘male cow’ = ‘bull’. This would have resulted in **g^wh₃euṛsen-* by simplification of the two subsequent labial glides, and could then be reinterpreted as **g^wh₃eu-ṛsen-*, after which the simplex would have lost its initial glide. The occurrence of this compound in the proto-language is made probable by the fact that reflexes occur in North Germanic as well as Tocharian. This scenario is ingenious, but it also has problematic aspects. The assumed re-segmentation and the reshaping of the simplex presuppose that the compound **g^wh₃euṛsen-* was much more frequent than the simplex, while in reality the compound has left not a single trace in Greek or

44 A possible exception to this is Myc. *wo-ne-we*, on which see section 2.3.1.

45 Peters tries to show that the Homeric evidence does not exclude a digamma, but this presupposes particular views about position length in Homer that I cannot subscribe to. In my view, the absence of positive evidence for digamma (in the form of hiatus or position length before forms of ἄρσῃν) strongly speaks against the erstwhile presence of digamma in this word, as far as the epic tradition is concerned.

Indo-Iranian. On the other hand, the coexistence of forms with and without **μ-* in Vedic Sanskrit suggests a recent loss of **μ-*, and is at odds with the absence of traces of this compound.⁴⁶

No matter which scenario accounting for the loss of **μ-* is correct, we must reconstruct a pre-form **ɣs-en-* for an early stage of Greek, perhaps for Proto-Greek. As Ion.-Att. ἄρσῃν, Arc. ὀρεν / κατορρεντερον and Thess. ὀρσεν show, word-initial **ɣ-* would develop according to the same coloring rules as word-internal **-ɣ-*. However, the vowel slot of Thess. ὀρσεν is at odds with the word-internal development **-ɣ- > Aeolic -ρο-*; it could be ascribed to the influence of **érs-ēn*,⁴⁷ or else a different vocalization in word-initial position could be assumed. If the presence of ἔρσῃν in Herodotus tells us anything about the Proto-Ionic situation, the vowel slot of Ion.-Att. ἄρσῃν may also have been influenced by that full grade form. Finally, in ἄρσῃν, ἔρσῃν the retention of *-σ-* after a liquid may have been caused by the accent on the preceding syllabic nucleus.⁴⁸ In sum, then, these words teach us nothing about the development of **-ɣs-*.

9.1.8 *Uncertain and Irrelevant Evidence for -αρσ- and -ρασ-*

The adjective ἐπικάρσιος ‘transverse, crosswise’ was derived from the Homeric adverb ἐπικάρ ‘cross-hill’, containing the zero grade of the root **kers-* ‘cut off’ (see section 9.6.4). Both forms are irrelevant for the treatment of word-internal **-ɣs-*: ἐπικάρσιος may have been derived at a relatively late date, from the pre-form **epikars-*.

Although πράσον ‘leek’ does not occur in Homer, its existence at an early date is presupposed by the derivative πρασὴ ‘garden bed’ (i.e. “place where leeks or similar vegetables are grown”), attested in the *Odyssey*.⁴⁹ Itself, πράσον first occurs in Attic Old Comedy and then in medical and scientific authors (Hp., Thphr.+). The plant is often mentioned together with γήθυσον, γήτειον ‘onion’, which is a clear substrate word in view of the variation in the dental stop and

46 Pronk's scenario requires a highly archaic type of paradigm (the hysterodynamic type posited by Beekes 1985) with a root-accented nom. sg. **μérs-én* beside acc. **μrs-én-m*, gen. **μrs-n-és*. This is not impossible, but it should make us somewhat cautious about the reconstruction.

47 Cf. Lesbian ἔρσῃν, which suggests that both stem forms were current in Proto-Aeolic, whether as part of a single paradigm with root ablaut (as *per* Pronk) or as distinct lexemes (as *per* Peters).

48 Laconian εἰρήν ‘young adult, ephebe’ could show that **-rs-* underwent the 1st CL, provided that this form is related and reflects an oxytone stem-variant **ersén-* ‘virile; young male’. For further discussion of this form, see Peters (1993b).

49 Πρασῑά also occurs as a toponym in Laconia and is the name of an Attic deme. Oxytone nouns in *-ή* are frequent in Homer; for other examples see Risch (1974: 116–117).

the suffix, suggesting that it was borrowed in different shapes at different times (Beekes, *EDG* s.v.).⁵⁰ On the basis of Greek *πράσον* and Lat. *porrum* 'leek', a pre-form **prso-* could be reconstructed,⁵¹ but the etymological dictionaries (*GEW*, *DELG*, *EDG* s.v.) rightly doubt the value of this etymology, in view of the possibility that the word was borrowed in the Mediterranean together with the plant. Indeed, Guus Kroonen has recently argued in unpublished work (pers. comm.) that *πράσον* and *porrum* could be borrowings from a Near Eastern language; he compares Sum. *garaš*, Akk. *karašu-*, *kurissu-*, Hebr. *karēša-*, Arab. *kar(r)āt*, *kur(r)āt*, and Hitt. *ki-ru-ú-ša-*, which indicate that *πράσον* was borrowed with an initial labiovelar. Whatever the precise explanation of Lat. *porrum*, this idea forbids us to use *πράσον* as compelling evidence in the present discussion, for it would be impossible to determine whether the word was borrowed with **ṛ* or **ra*, or what exactly the intervocalic -σ- reflects.⁵² We may compare *κέρα-σος* 'cherry', another culture word ending in -ασο- that cannot be traced back to PIE.

The neuter *φάρσος* 'quarter, part of a city' (Hdt. 1.180 f. and 186, said of Babylon, which is divided in two parts by the Euphrates) is found in various other meanings in later authors ("any piece cut off or severed", *LSJ*). The comparison with Hitt. *parši-a(ri)*, *parš-a(ri)* 'to break', *parša-* 'morsel, fragment' is cited with some hesitation by Kloekhorst (*EDHIL*, q.v.) and accepted by Beekes (*EDG*, q.v.).⁵³ In my view, it is preferable to view *φάρσος* as a loanword in view of its marginal attestation.

9.1.9 Conclusions on *ṛs-

There is no reliable evidence for a conditioned development **ṛ* > -*ra*- before a sibilant. No conclusion can be based on dat. pl. forms in -*Cpaσι*, where we may

50 It is not certain that 'leek' was the original referent of *πράσον*. Note that E. *leek* is related to G. *Lauch*, Du. *look*, which originally denote any kind of plant that can be peeled (cf. *Knoblauch*, *knoflook*).

51 Wachter (2006) mentions a suggestion by Weiss to compare the alleged **prso-* 'leek' with PIE **persó-* as reflected in the Indo-Iranian word for 'sheaf, ear of grain', Ved. *paršá-* and YAv. *parša-*. In view of the possibility that *πράσον* is a borrowing (see below), this speculation may have to be abandoned. However, the etymology of the mythological name Persephone proposed by Wachter (Att. inscr. *Περροφᾶττα* < PGr. **perso-k^{wh}yt-ja* 'she who threshes ears of grain', directly comparable with Indo-Iranian phraseology) is not affected by this objection, and in my view remains plausible.

52 Ringe (1989: 142–143) suggests that *πράσον* was borrowed into Greek in the form **prso-* after the lenition of intervocalic **s*, but this remains speculation.

53 "The most promising etymology (...) is a connection with Hitt. *parši-a(ri)*, *parš-a(ri)* 'to break', *parša-* 'morsel, fragment', if we assume that in a zero grade **b^hrs-o-*, the -s- was

either assume analogical influence of other weak stem forms in -Cρ- or even (in the case of τέτρασι) a pre-form with Epic **ʔ*. It is uncertain whether πράσον, γράσος or φάρσος ever contained **ʔ*, and ἄρσην may have been influenced by the by-form ἔρσην, whatever the ultimate explanation for the coexistence of both forms.

The remaining suggestive cases for **ʔ* > -ρα- before -σ- are θρασύς and τρασιά 'drying hurdle'. From a lexical point of view, however, the word ταρσός 'sole of the foot' is a much better candidate than τρασιή to contain the unrestored outcome of **ʔ*. One would have to assume that the lexically isolated form ταρσός underwent an analogy with τέρσομαι 'to dry', and that the perspicuous derivative τρασιά 'place used for drying' did not undergo this analogy, but this stretches the imagination. It is more likely that ταρσός contains the regular outcome of **ʔ*s- and that the rare poetic word τρασιά was adopted from an epic source.

Concerning the development of **ʔ*sV-, if the derivation of τραυλός 'stammering' from **ʔ*rs-u-ló- (whether with **ters*- 'dry up' or **tres*- 'tremble') is correct, it is a compelling piece of evidence for **ʔ*sV- participating in the early pan-Greek lenition of intervocalic *-s-. The evidence for retained -σ- in this environment can be explained either by analogy (e.g. PGr. **thysu*- restored after **thers*- in related forms) or as borrowings.

9.2 Verbs with a Non-ablauting Root CraC-

A number of Greek verbs have a non-ablauting root of the structure CLaC-. A simple thematic present is attested in βλάβομαι 'to falter', γλάφω 'to dig a hole', γράφω 'to scratch, write', and γράω 'to devour'.⁵⁴ A *yod*-present is found in βλέπτω, δράσσομαι, πλάσσω, and φράσσω.⁵⁵ The forms with -λα- (βλάβομαι, γλάφω, πλάσσω) will be discussed in chapter 10, and γράω derives from **gr̥s-e/o-* (see section 9.1.4). It remains to account for the reflex -ρα- in γράφω, δράσσομαι, and φράσσω.

preserved between vocalic resonant and vowel. The Hitt. word is compared with the Gmc. group of ON *bresta*, OHG *brestan*, OE *berstan* 'to burst'. Within Greek, we find a verbal form φάρσαι = σχίσαι (EM)" (Beekes, *EDG* s.v. φάρσος).

54 On the so-called Doric presents στράφω, τράφω, τράχω, τράπω (corresponding to Class. στρέφω, τρέφω, τρέχω, τρέπω), see section 3.1.

55 And also ράπτω 'to sew, stitch together', which has no etymology and did not contain **ʔ* (witness Myc. *e-ra-pe-me-na* and *ra-pte-re*).

9.2.1 δράσσομαι and δραχμή

The verb δράσσομαι ‘to grasp with the hand; clutch at’ (+ gen.) is not frequent in Classical Greek and mainly occurs in poetry. Forms with preverb are unattested before the end of the Classical period. Homer only has the formulaic verse βεβρυχῶς κόνιος δεδραγμένος αἵματοέσσης ‘moaning, clutching at the bloody dust’ (*Il.* 13.393, 16.486). Further derivatives like δράγμα ‘sheaf, bundle’ and δραγμός ‘action of grasping’ were productively formed from the verbal root.

Etymologically, a connection with the Avestan root *dranj* ‘to hold; fix’, YAv. pres. *drazaite* ‘holds’, makes good sense. Just like δράσσομαι, the Avestan verb is a deponent and can be derived from PIE **dr̥gh-je/o-*.⁵⁶ Thus, as already noted by Haug (2002: 61), the root vowel of δράσσομαι may reflect a syllabic nasal rather than *ṛ. The same nasal present may be continued in OIr. *dringid* ‘climbs, clambers; advances’ and MW *dringo*, but this is less certain because the meaning is different. Finally, if the Slavic verb OCS *drъžati*, Ru. *deržát* ‘to hold’ is also cognate, it points to a nasal-less root **dregʰ-*, suggesting that the nasal is originally an infix.⁵⁷

A nasal-less root is also found in δάρκες· δέσμαι ‘bundles; handfuls’ (Hsch.). As a root noun, this form must be compared primarily with δράξ, -κός ‘handful’ (*LXX*, Hsch.).⁵⁸ However, the root-final -κ- of these forms is at variance with the probable cognates and with the noun δραχμή, which point to **-gʰ-*.⁵⁹ In view of this, and since the dialectal origin of these late forms (including the glosses in Hsch.) is unclear, they can play no role in the debate about the Ionic-Attic reflex. If they do indeed reflect an old root noun, we may assume that the gloss δάρκες is of Cretan origin: the Cretan alphabet did not have a separate sign for the aspirate /kʰ/, and the dialect has -αρ- < *ṛ (see chapter 3 for further details). Alternatively, the voiceless velar in δάρκες and δράξ may have been generalized from the position before voiceless consonants.

56 This connection is accepted in the *LIV*² (s.v. **dregʰ-*). Although it cannot be entirely excluded that the Avestan present reflects a thematic root middle PIE **dr̥gh-e/o-* extended with -ya- (cf. *LIV*², l.c.), it is attractive to directly equate the Greek and Avestan formations. The older comparison between δράσσομαι and Arm. *trc’ak* ‘Reisigbündel’ (see *GEW*, *DELG* s.v. δράσσομαι) leads nowhere: Arm. -c’ may derive from *-Ḳs-, but the formation is not matched in Greek.

57 If I correctly hypothesized that accented syllabic nasals caused voicing of a following occlusive (Van Beek 2017b on βλάβομαι < **ml̥ghw-e/o-*), one would expect **dr̥gh-je/o-* to develop into *δράζομαι. However, such a form would have been reshaped to δράσσομαι because roots ending in a velar productively have a *yod*-present in -σσω / -ττω.

58 It is uncertain whether δρακτόν ‘a small vase’ (inscr.) belongs here.

59 There is no reason to assume that the cluster χμ in δραχμή reflects *-ksm-.

The etymology of δραχμή (the weight and monetary unit) is not quite clear, and the word need not have an inner-Greek etymology.⁶⁰ Since a δραχμή originally had the weight of six obols or *obeliskoi* (metal spit-shaped bars), the meaning of the potential cognate δράγμα 'sheaf, bundle' suggests that a δραχμή originally denoted a bundle of six obols. Let us suppose, for the sake of the argument, that this etymology is correct. If the Proto-Greek root was indeed **dr̥kʰ-*, there is a natural explanation for the difference between -γμ- and -χμ-: assimilation took place only in productive formations like δράγμα, δεδραγμένος where a synchronic morpheme boundary was present.⁶¹

In this case, how can we explain the difference between δραχμή and the dialectal forms δαρχμα (attested in Elis, Arcadian, Boeotian, and Knossian Cretan) and δαρχνα (Elis, Gortynian Cretan)?⁶² Cretan δαρχνα has been explained as showing an assimilation -χμ- > -χν- (spelled -κν-) specific for this dialect (Schwyzer 1939: 215), but this is not supported by further evidence, and it does not explain why the same form occurs in Elis. Is it possible that a pre-form **dr̥kʰmnā-* was preserved as such until Proto-West Greek, and that the dialects treated the word-internal cluster in different ways? It is difficult to cite clear parallels for the phonetic environment: most other examples of **-mnā-* were preceded by a vowel or diphthong, and one expects an early reduction to **-mā-* or **-nā-*, except when the group was directly preceded by a short vowel (as in βέλεμνα, ἀπάλαμνος, ἀτέραμνος).

If a pre-form **dr̥kʰmnā-* was indeed retained until Proto-West Greek, -αρ- in δαρχμα and δαρχνα may represent the regular vocalization in Cretan and parts of the Peloponnese and/or Central Greece.⁶³ We cannot avoid the conclusion that the form with -αρ- was borrowed into various dialects: in Arcadian and Boeotian the form δαρχμα would have to be ascribed to West-Greek Koine influence. Therefore, this scenario remains tentative, but in any case it shows that -ρα- in Ionic-Attic δραχμή is not necessarily the regular outcome of **r̥* in this particular dialect. Its vocalism may have been influenced by the verb, or the word may be an interdialectal borrowing.

60 Beekes (*EDG* q.v.) considers δραχμή to be Pre-Greek in view of the dialectal forms with δαρχ-. In my view, this is hard to substantiate, because the dialectal forms may also contain the regular outcome of **r̥*.

61 It has been suggested (cf. *DELG* s.v. δράσσομαι) that the suffix of δραχμή started with -s-, as e.g. in πλοχμός 'braid' < **plok-smo-*, but there is no further motivation for this assumption.

62 The Cretan form δαρχνα is now also attested in Olympia (see *DELG*, Supp. p. 1289), and δαρχμα is also found in Thespieae (Roesch, *IThesp.* 38 and 39 [both ca. 386 BCE]) cf. Haug (2002: 61). The appurtenance of Myc. *do-ka-ma* is uncertain, see section 2.3.2.

63 However, note that there is no unambiguous further evidence for **r̥* > -αρ- in Elis, and some

9.2.2 γράφω and Dialectal (Epigraphic) Forms in γροφ-

The present γράφω ‘to scratch; write’ is the primary stem of this verb; the aorist γράψαι carries the productive suffix -s- (cf. *LIV*² s.v. **gerb*^h-). The present is, however, barely attested in pre-Classical Greek.⁶⁴ This pattern can be understood from semantic developments: the present stem was frequent as long as the verb meant ‘to scratch’ (denoting an activity), but the aorist became more frequent when the meaning changed into ‘to write, inscribe’, which caused the lexeme to become telic and resultative.

Etymologically, γράφω is thought to derive from a PIE root **gerb*^h-, continued in the Germanic group of OE *ceorfan* ‘to carve, engrave’ and perhaps also in Baltic: OPr. *gērbt* ‘to speak’, *gīrbīn* ‘number’, Lith. *gerbiù* ‘I honor’, inf. *gerbti*.⁶⁵ It is normally assumed that γράφω derives from a zero-grade thematic present **grb*^h-e/o- or even from an ablauting athematic root present PIE **gerb*^h- / **grb*^h-.⁶⁶ However, the Greek verb is attested as γράφω in all dialects, including those where **ḡ* normally develops an *o*-colored reflex. For instance, on Lesbos we only find epigraphic evidence for γράφω, and no forms with γροφ- are attested until the late (2nd c. CE) poetess Balbilla, in whose text the form γρόππατα must be a hyper-Aeolism.⁶⁷ The same is true of Arcadian (cf. the discussion in Haug 2002: 61). In Cretan, γραφω is also the normal form, notwithstanding the fact that the expected reflex of **ḡ* would be -αϕ- in this dialect (see section 3.1).⁶⁸ Although γροφ- might theoretically be due to Koine influence in some of these dialects, the uniform attestation of γράφω throughout Greek,

evidence for a development to -αϕ- (chapter 3). According to Thumb-Kieckers (1932: 244), *δαρχμα* has a “zentralgriechische Lautform”.

64 Only A. *Choe*. 450, Xenophanes fr. 15 DK. In Homer, only the aorist (ἐπι-)γράφαι is found (7×), normally meaning ‘to graze, scratch the surface’ (of the skin or a helmet). This earlier meaning is also found in the derivatives γραπτύς ‘scratching’ (*Od.* 24.229) and ἐπιγράφην ‘scratching the surface’ (*Il.* 21.166) (cf. *DELG* s.v. γράφω). Only in one instance does Homer refer to writing: σήματα λυγρὰ γράψας / ἐν πίνακι πτυκτῷ ‘inscribing / scratching baneful signs on a folded tablet’ (*Il.* 6.168–169). It is not entirely clear to what kind of writing this passage refers, and on what kind of material it was done (cf. Kirk 1990 ad loc.).

65 The semantic developments underlying the Baltic forms may have been ‘number’ < ‘carved number’, ‘honor’ < ‘honor by engraving’. Although written sources in Northern Europe are comparatively recent, the use of carvings for counting may well be much older.

67 Cf. the discussion in Slings 1979: 251–252 n. 37.

68 The oldest attested Cretan forms have γραφ-, e.g. γεγραπτ[αι] (Eleutherna, *IC* II, 13.7, 6th c.) and εγραμενα (*Lex Gortyn* 1.55). Later on, forms with γροφ- are found beside forms with γραφ-, sometimes in one and the same inscription (e.g. in Knossos). Bile (1988: 124) thinks that the original Cretan form is γροφ-, and that this form is found only in later texts due to the lacunary documentation of the dialect, but it seems more likely to me that γραφ- was, at an early date, the only root allomorph in the verbal paradigm, as in many other dialects. The origin of εγίπτται (*IC* IV 41, 1.11, Gortyn) is entirely unclear.

also in *o*-coloring dialects, casts doubts on the reconstruction of a Proto-Greek present **grr^h-e/o-*.

Another complicating factor is the existence of nominal forms with *γροφ-*, which are found scattered across inscriptions from various dialects; in some dialects these forms are highly frequent. Chantraine ascribes these forms to different dialectal vocalizations of **ǵ*.⁶⁹ However, the forms with *o*-vocalism occur mainly in West Greek dialects which do not normally develop an *o*-colored reflex of **ǵ*. Let us consider them in more detail.⁷⁰

- *γροφεις* ‘secretary, registrar’ is widespread on the Peloponnese (Argolic, Mycenae, Epidaurus, Sicyon, Arcadia, Elis) and its colonies (Cyrene).⁷¹ The same official is called *γραμματεὺς* at Athens.
- The following forms are found only in Argolic: *γροφα* ‘painting, scratching’, *γροφίς* ‘stylus for writing on wax tablets’, *γροφειω* ‘to be *γροφεις*’, *αγγροφα* ‘register, inscription’, *εγγροφα* ‘registration, act of inscription’.
- *συγγροφος* f. ‘engraved list’ (Argolic, Delphi).
- *ανεπιγροφος* ‘on which there is no inscription’ (one attestation on the Heraclan Tables, against many instances of *γραφ-*).
- *αντιγροφον* ‘copy’, *εγγροφος* ‘register, registration list’ (Crete, post-classical; but all earlier forms on Crete have *γραφ-*).
- The only instance⁷² of a verb *γράφω* is *απογροφονσι* (*IC* IV, 174 [Gortyn] A.52), but the attestation is relatively late (2nd c. BCE) and stands against many older attestations of *γράφω* in the same dialect.

Clearly, the forms with *γροφ-* are concentrated on the Peloponnese. The only form found in more than two different dialects is *γροφεις*, and most other cases concern deverbal nouns and adjectives in *-γροφος* (of the type class. ἄγραφος ‘not written’, with recessive accent and passive interpretation of the second member). The only dialect where *γροφ-* is found beyond these two categories is Argolic.⁷³

69 “Plutôt que d’un vocalisme *o* alternant, il s’agit d’un flottement dans le timbre en grec même, cf. *στρότος*” (*DELG* s.v. *γράφω*).

70 I gathered the material from Bechtel (1921–1924, II: 114), and checked it against the searchable database of Greek inscriptions at the Packard Humanities Institute.

71 Perhaps also in Delphi (*FD* III, 1:578, l. 27: *γροφει*).

72 A *PN* *Γρόφων* appears on a stone found in Olympia and signed by a Melian (*Γροφον εποιε Μαλιος*, *IoO* 272 = *Del.*³ 209). For this reason, *γροπθον* (Melos, *IG* XI.3 1075) is probably a proper name, rather than the ptc. of a verb *γράφω* (as per Bechtel).

73 See Nieto Izquierdo (2008: 147–148) for the Argolic forms and their attestations. The forms *καταλοβει* and *καταλοβεισι* (*IG* IV².1 1485), from the root *λαβ-* ‘to take, seize’, are found in the dialect of Epidaurus. Here, too, a secondary *o*-grade appears in an agent noun in *-εύς* in a variety of Argolic, and nowhere else in Greece.

In Elis, *γροφeus* is attested at an early date (6th c.), but it stands on its own against numerous attestations of *γραφ-* in other derivations. Minon suggests that the stem *γροφ-* originated in this agent noun, which is of the same type as *φονεύς*.⁷⁴ This is an attractive solution, but it is unlikely that this innovation would occur several times independently. Since agent nouns in *-εύς* were productive in Mycenaean, and since *γροφeus* is attested mainly on the Peloponnese and on Crete, I think the form could well be a relic from the Mycenaean period. The Mycenaean word for ‘writing’ is unknown, but professional scribes certainly existed. The compounds in *-γροφος*, which are also widespread, may also be relics of technical vocabulary dating from this time. Note that Argolic, the dialect where *γροφ-* is most widespread, also attests the form *γραθματα* (from **grap^hmata*, with a special dissimilatory development of colliding labials at a morpheme boundary, Lejeune 1972: 76). This may be explained in the same way: *a*-vocalism in productive deverbal derivations, *o*-vocalism in fossilized technical vocabulary.

Whether this scenario is correct or not, the root allomorph *γροφ-* still has to be accounted for. It has been assumed that the original form of the verb was **γρέφω*.⁷⁵ Indeed, this would yield by far the most straightforward explanation of the Greek data: in this case, *γροφεύς* and the deverbal nouns in *-γροφος* are simply formed according to expectation, and the productive root shape *γραφ-* in Ionic-Attic and Cretan (and possibly in other West Greek dialects) could have an analogical vowel slot. However, reconstructing a pre-form **γρέφω* would contradict the Baltic and Germanic *comparanda*, which require a full grade **gerb^h-*. Perhaps, then, we must assume that these branches created a secondary full grade root after the emergence of the vocalized zero grade (PGmc. **kurb-*, Baltic *girb-*).⁷⁶

A second possibility, which I cautiously suggested in Van Beek 2013, would be that the pre-form of *γράφω* was PGr. **gr-ŋ-p^h-e/o-*, a thematic (or thematicized) nasal infix present. In Greek, there are hardly any old nasal infix presents to roots ending in an occlusive (type athematic Ved. *yunákti*, thematic Lat. *iungō*), but there is at least one certain instance: *λάμπω* ‘to glow, shine’ to the root PIE

74 “... on peut supposer que, pour le nom d’agent, le choix de la résonance vocalique de **r* a été influencé par le vocalisme *o* radical, soit des plus anciens substantifs en *-εύς*, soit des noms d’agents thématiques, dont certains forment couple avec un nom d’agent en *-εύς* avec le même vocalisme radical, ainsi *φονός* ‘tueur’, avec *φονεύς*.” (Minon 2007: 301).

75 See e.g. Bechtel (1921–1924, II: 114), Bile (1988: 124).

76 Frisk (*GEW* s.v. *γράφω*) assumed that the forms with *γροφ-* continue an *o*-grade PGr. **gorp^h-* which was remodeled as *γροφ-* only after the vocalized zero grade *γραφ-* had come into being. In this case, however, I would instead expect a generalization of either *γραφ-* or **gorp^h-*, or even the development of an analogical zero grade **γαρφ-*.

**leh₂p-*.⁷⁷ Further possible parallels for a thematic nasal infix present are βλάβομαι ‘to falter; be distracted’ < **ml̥k^w-e/o-* (beside athematic Av. 3pl. *mārəṇcaite*), δράσσομαι (see the previous section), and the Indo-Iranian present Ved. *kṛntāti*, Av. *kərəntaiti* ‘to cut’.⁷⁸ As for γράφω, it is true that no cognate nasal present formations are attested, but reconstructing PGr. **gr̥p^h-e/o-* would directly explain why almost every Greek dialect has γράφ-. It could perhaps even allow us to explain the forms with γροφ- as reflecting a syllabic nasal in a labial environment (as perhaps in Mycenaean, cf. section 1.3.3). However, the reconstruction **gr̥p^h-e/o-* > γράφω is contradicted by the idea that accented syllabic nasals caused voicing of a following occlusive (cf. Van Beek 2017b), in which case one would expect **gr̥p^h-e/o-* > *γράφω.⁷⁹

Thus, the prehistory of γράφω remains somewhat enigmatic. Perhaps, the idea of an original root shape *γρεφ- should be reconsidered, as it would allow us to view the root shape γροφ- as an *o*-grade allomorph, and to explain the vowel slot of Ionic-Attic γράφ- as secondary. In this case, the occurrence of γράφ- in dialects like Lesbian and Arcadian must be due to borrowing.

9.2.3 φράσσω

According to the etymological dictionaries, φράσσω ‘to fence off, block; defend’ has no ascertained etymology. Frisk (*GEW* s.v. φράσσω) only mentions the comparison with Latin *farcio* ‘to cram, fill’ and *frequēns* ‘crowded; frequent’, but this connection is semantically far from evident (cf. Chantraine, *DELG* q.v.), because the action referred to by φράσσω always has the aim of preventing the (undesired) penetration through a passage or into a protected area.⁸⁰ In Homer,

77 A nasal-less root **leh₂p-* is attested in Hitt. *lāpta* ‘flashed’ < **leh₂p-t*, Lith. *lópė* ‘light’, OPr. *lopis* ‘flame’, and perhaps in OIr. *lassar* ‘flame’, W. *llachar* ‘shining, brilliant’ < PCellt. **lap-saro-*. Greek may have preserved the outcome λαμπ- of the nasal infix formation **lh₂np-* because the root had been reanalyzed as atelic: cf. the presence of the nasal in the deverbal adjective λαμπρός ‘brilliant’.

78 For -ρα- reflecting a sequence of liquid plus syllabic nasal, cf. also γράω ‘to eat’ < **gr̥s-e/o-* (section 9.1.4).

79 A root of this shape is actually attested in the middle perfect form γεγράφαται (*SEG* 4.30, Camarina, 5th c. BCE), but the value of this isolated form in the present discussion is questionable.

80 Chantraine draws attention to the glosses φρύκες· χάρακες ‘pointed stakes, palissaded camp’ and φύρκος· τεῖχος (Hsch.), and concludes that the root underlying φράσσω was **b^hrk-*. However, the aberrant *υ*-vocalism of φρύκες and φύρκος beside φράσσω cannot be explained in an inherited Greek word, and rather calls to mind cases like τύμβος ‘mound, tomb’ and πύργος ‘bulwark, defensive wall’. These words are often thought to be borrowings from an Indo-European substrate language, in view of the semantically attractive

φράσσω clearly has military connotations and means 'to fence off, fortify'.⁸¹ While this meaning remains in use after Homer, the most frequent meaning in Classical Greek is 'to bar, obstruct, block', especially of roads and passages.⁸² As Taillardat (1965) has shown, the middle has a special meaning in nautical vocabulary, 'to raise the deckboards'.⁸³

Beekes (*EDG* s.v. φράσσω) has proposed that the verb is of Pre-Greek origin, taking into consideration not only the interchange between φράξ- and φαρξ-, but also πύργος 'fortification' and the gloss φύρκος· τεῖχος (Hsch.). This suggestion is hard to test: although πύργος and φύρκος may be borrowings from another Indo-European language, this does in no way guarantee that the interchange between φράξ- and φαρξ- is a substrate phenomenon. In any case, Beekes's view loses much of its viability in view of the possibility that φράσσω contains the PIE root **b^herǵh-* 'to rise'. This etymology was suggested by Puhvel (1999), who proposed to translate Hitt. *parkiie/a-^{zi}* on the Neo-Hittite Bronze Tablet as 'to fence off, put beyond reach'. From this semantic and formal match, he concludes that φράσσω and Hitt. *parkiie/a-^{zi}* both continue an inherited present formation **b^hṛǵh-*ie/o-**. The Greek *s*-aorist φράξαί would have been formed secondarily on the basis of φράσσω.⁸⁴

Although the root etymology is attractive, I disagree with Puhvel about the derivation of the Greek verb. Let us first discuss the likelihood of an inherited PIE present **b^hṛǵh-*ie/o-**. The primary root meaning of PIE **b^herǵh-* seems to have been telic and intransitive, as reflected in Hitt. *parktaru* (impv. mid.) 'may it rise up!' and Toch. B *pärk-ä* 'to rise' (of celestial bodies).⁸⁵ Hitt. *parkiia-^{zi}* 'to raise' can be analyzed as a factitive beside the primary formation *parktaru*,

comparison with derivatives from PIE **b^herǵh-* 'to rise', e.g. Goth. *baurgs* 'fortress', Av. *bərəz-* 'elevation'. Therefore, these glosses are better left aside from the present discussion of φράσσω.

81 Cf. φράξαντο δὲ νῆας ἔρκει· χαλκείῳ "they fortified the ships with a wall of bronze" (*Il.* 15.566–567).

82 See *LSJ* (s.v. φράσσω).

83 This nautical meaning is found already in Homer: φράξε δὲ μιν ῥίπεσσι διαμπερές οἰσύνῃσι, κύματος ἔλλαρ ἔμην (*Od.* 5.256–257), and also in Alc. fr. 6.7 (on which see below) and A. *Sept.* 62–64 and 795–798.

84 This account is followed, with some hesitation, in *LIV*². The absence of traces of Grassmann's Law in Greek is not surprising, because the root-final consonant was deaspirated before a following consonant in all attested formations (ἄφρακτος, πεφραγμένος, etc.). Cf. θράσσω 'to stir up' from **d^hreh₂g^h-* beside the Homeric perfect τέτρηχα.

85 The creation of adjectives like Hitt. *parku-*, Arm. *barjr* 'high' < **b^hṛǵh-*ú-**, Toch. B *pärkare* 'long' < **b^hṛǵh-*ró-** can be understood if the verbal root was originally intransitive. Ved. *brhánt-* 'elevated, lofty; strong' < PIE **b^hṛǵh-*ént-** represents an archaic formation, too (cf. the names OIr. *Brigit*, OHG *Purgunt* reflecting the old feminine).

which only occurs in the middle in the oldest Hittite sources.⁸⁶ As we will see below, φράσσω is also a factitive verb, and the origin of its formation (and that of the *s*-aorist φράξαι) can be explained accordingly. Thus, neither φράσσω nor Hitt. *parkija-* is likely to be an old formation.

Further suspicion arises when we consider the attestations of φράσσω. The present stem is unattested in Homer, and remains rare afterwards. This general rareness may well be connected with the verb's factitive semantics. In fact, the Ionic present φράσσω is attested only once in Herodotus (2.99); Attic φράττω first appears in Xenophon and Plato. On the other hand, as a present stem Thucydides, Sophocles and Aristophanes use not φράσσω / φράττω, but φράγνυμι.⁸⁷ Thus, nothing suggests that the *formation* of φράσσω is inherited, as Puhvel assumed.⁸⁸

It is now necessary to consider the Greek attestations more closely. The forms in Homer and Herodotus seem to belong to a regular denominative paradigm based on a non-ablauting root φραK-, apparently reflecting **bʰr̥ǵʰ-*. However, this root shape cannot be utilized as evidence for a regular development **r̥* > -ρα- without further ado: Attic and other dialects have a considerable number of forms with -αρ-. The evidence from (primary and secondary) literary sources is as follows:

- φαρξώμεθ' (Alc. fr. 6.7 = POxy. 1789), where the long-vowel subjunctive is a strong indicator of Ionic or epic origin (Bowie 1981: 126–127), suggesting that the entire form (with its reflex -αρ- < **r̥*) is of Ionic origin;
- πεφαργμένος ἀντὶ τοῦ πεφραγμένου καὶ ἐφάρξαντο ἀντὶ τοῦ ἐφράξαντο καὶ φαρκτὸν φρακτὸν (*Etym. Magn.* 667.22, referring to the treatise περὶ παθῶν ascribed to Herodian);
- ἄφαρκτος· ἀφύλακτος 'unguarded, undefended' (Hsch. α 8564);
- ἐφάργυσσαν· ἔφραξαν (Hsch. ε 7342);
- φάργμα· φραγμός 'fence' (Hsch. φ 164);
- φάρκτου· φυλακὴν σκεύαζε 'prepare the guard' (Hsch. φ 176), i.e. from a verb φάρκτομαι attested in other lexicographical sources.

Forms with -αρ- are also well-attested epigraphically, in various dialects, in temple building records from the late fifth century onwards:

86 Cf. EDHIL s.v. *parkije/a-zi*.

87 S. *Ant.* 241, Ar. fr. 367 (Edmonds), Th. 7.74.2. It is possible that φράγνυμι was formed analogically after πῆγνυμι (aor. πῆξαι) 'to fix, attach' or especially the opposite ῥήγνυμι 'to break through' (in Hdt. also of a dam); cf. also εἴργνυμι 'to fence in'.

88 According to Kölligan (2007a: 128–129), in Homer the aor. φράξαι stands in suppletion with the pres. ἐέργω, εἴργω, though only in the meaning 'to fortify, shut in' (the meaning 'to shut out, keep away' is attested only for ἐέργω, not for φράξαι). He speaks of "überlappende Suppletion, die nur für die homerische Sprache anzunehmen ist".

- φαρχσαι το βαθρον τοιν αγαλματοιν και τας θυρας “to provide with a fence the steps of the statues, and the doors” (Attic, *IG* I² 371.20, 421/0–416/5 BCE);
- διαφαρχσαντι τα μετακιονια τετταρα οντα τα προς το πανδροσειο κομονι (Attic, *IG* I² 373.251, 409/8–407/6 BCE);
- φαρξιν ναου (*IG* IV², 1 102.75, building records from Epidaurus, 4th c. BCE) glossed as “Vergitterung (des Tempels)” by the editor;
- φαρχματα (same inscription, line 253);
- φαργμα (*Del.*³ 89.8, Argos, 3rd c. BCE).

Thus, there is independent evidence for -αρ- in this word from three dialects: Attic, Argolic, and the variety of Ionic from which Alcaeus borrowed the form φαρξώμεθα. This evidence must be taken seriously, but it is less clear how the forms with -ρα- are to be accounted for: starting with Homer, the entire manuscript tradition of both prose and poetic texts exclusively has forms with -ρα-. Most editors of the tragedians and of Thucydides print forms with -αρ-, based on the observation that Attic inscriptions start to use forms with -ρα- only in the fourth century.⁸⁹ While emendating the unanimous evidence of manuscripts is usually a questionable editorial practice, something may be said for it in this case, as the two oldest epigraphic attestations of the verb in Attic (contemporaneous with the tragedians and Thucydides) have the aorist φαρχσαι.

One approach to this problem has been to regard -αρ- as old in the aorist, as against -ρα- in the present φράσσω. There is no instance of the present stem among the epigraphic forms with -αρ-, and it is remarkable that Herodian (as quoted in *Etym. Magn.*, see above) mentions the middle perfect ptc. πεφαργμέ-νος, the aorist ἐφάρξαντο, and the participle φαρχτόν, but no present form with -αρ-. For these reasons, Meisterhans & Schwyzler (1900: 181) set up the following distribution: “φράττω bildet im Altattischen den Aorist ἔφαρξα; später in Übereinstimmung mit dem Präsensstamme: ἔφραξα”.⁹⁰ However, is it likely that -ρα- was introduced from the present stem into the other stems? Such influence of the present stem is not very common in Greek generally, and highly unlikely in this particular verb: as we have seen, the aorist and middle perfect stems are the most widely used, in agreement with the verb’s factitive semantics.

A second, chronological problem is that the spread of -ρα- in the variety of Ionic underlying the Homeric epics, where all instances of φράσσω already

89 Cf. the comment in *LSJ* (s.v. ἄφρακτος): “ἄφρακτος, Old Attic ἄφαρχτος (although this form has generally been altered by the copyists)”.

90 This explanation was retained in Threatte (1980: 477). However, as noted above, the oldest Attic present was not φράττω, but φράγνυμι.

have -ρα-, would have to be dated much earlier. On the other hand, φαρξώ-μεθα occurs already in Alcaeus was a borrowing from pre-classical Ionic (or from Epic Greek). In this connection, it is important to note that -αρ- may be substituted for -ρα- without metrical consequences in any of the five Homeric attestations of φράσσω. The same holds for the only attestation in Pindar,⁹¹ and (as far as I have seen) for all instances in the tragedians. Thus, the situation is at least consistent with the view that Koine forms with -ρα- (whatever their origin)⁹² were at some point introduced into the manuscript tradition of most classical texts.

If one still wishes, in spite of these problems, to retain the doctrine that the allomorph with -ρα- was generalized from the present stem, it must be asked how the difference between φράττω / φράγνυμι and the oldest aorist form φάρξαι came into being. This distribution would be left unexplained if we followed Puhvel's view that Proto-Greek had a present **bʰrǵʰ-je/o-* beside an aorist **bʰrǵʰ-s-*.⁹³ Phonologically, a conceivable solution would be that the present stem contained a vocalized nasal, i.e. that the formation underlying both φράττω and φράγνυμι was **bʰrǵʰ-e/o-*. Interestingly, such a form indeed seems to underlie Ved. *bṛṇhati* 'fortifies', but for Greek the reconstruction **bʰrǵʰ-e/o-* is not without problems: why wasn't the reshaped present stem formation based on the frequent aorist stem **pʰarks-*? The comparative support is not strong either: Ved. *pári bṛṇhati* 'fortifies' (ŚB+) may have replaced the older causative present *barháyati* 'strengthens' (RV+) under the influence of *dṛṇhati* 'fixes' (RV+).⁹⁴

It seems better to analyze both φράγνυμι and φράσσω as formations of inner-Greek origin. This may be confirmed by the derivational prehistory of the entire verbal paradigm, which in my view was based on nominal forms like PIE **bʰrǵʰ-*

91 ἔρνεσι φράξαι (Pi. *Isthm.* 1.66), where φρ- is tautosyllabic.

92 One could envisage whether the Homeric forms with -ρα- may contain the reflex of Epic **ǵ*. If the Ionic and Attic vernaculars had -αρ- throughout the verbal paradigm early on, the introduction of -ρα- in the Koine could then be ascribed to Homeric or poetic influence. Problematic for such an assumption, however, is the absence of the alleged vernacular forms with -αρ- from Epic Greek (the Homeric forms do not have a special meaning: both φαρξώμεθα in Alcaeus and φράξε at *Od.* 5.256 have the technical meaning 'to provide with deckboards'). Another problem is that the expected outcome of Epic **ǵ* after a labial consonant is -ρο-, according to the scenario developed in chapter 7.

93 The assumption that -αρ- was regular only before stop plus -s- (O'Neil 1971) is phonetically unmotivated and completely *ad hoc*.

94 See Gotō (1987: 215). The Armenian nasal present *barnam* 'raises' was probably secondarily formed beside the aorists *ebarj* 'raised', *barjaw* 'rose'. See further the discussion in *LIV*² (s.v. **bʰerǵʰ-*).

'stronghold, elevation' and PGr. **h₂-p^hrk^h-to-*.⁹⁵ Such a scenario is paralleled in other factitive verbs. As Tucker (1990: 297–306, esp. 305) has shown, denominative verbs in -όω that were derived from nouns are instrumentatives: type πυργόω = 'to provide with a πύργος'.⁹⁶ Like φράσσω, such verbs are rare in the present stem: they often occur as an aorist (with factitive meaning) or a middle perfect indicative or participle ('provided with ramparts'), and they often pair with negated adjectives (Hom. ἀπύργωτος 'without fortifications'). Tucker concludes that the factitive type πυργόω was based on pairs like πεπυργωμένος beside ἀπύργωτος.

This type of pairing is widespread within Greek (see Meillet 1929) and already attested in Mycenaean.⁹⁷ From Homer onwards, we find pairs like τετελεσμένος: ἀτέλεστος and κεχαρισμένος: ἀχάριστος which have an archaic appearance. An instructive example is τὸ μὲν ἐστίχθαι εὐγενὲς κέκριται, τὸ δὲ ἄστικτον ἀγεννές, "to be tattooed is considered a sign of nobility, to be without a tattoo of baseness" (Hdt. 5.6, about the Thracians). Many such pairs may have served as a basis for the creation of a denominative factitive (cf. χαρίζομαι 'to do someone a favor' = "to provide with χάρις", στίζω 'to tattoo' = "provide with a brandmark"). In a similar way, φράσσω 'to fortify' may have been based on the pair πεφραγμένος 'fortified, with raised defenses' beside ἄφρακτος 'without fortifications, unarmed'.

Since the instrumentative factitives in -όω were derived from nouns, it is attractive to assume that φράσσω was ultimately based on the PIE root noun **b^herǵ^h*, **b^hǵ^h* 'elevation, stronghold' (Av. *barš* 'mountain', Ml. *brí* 'hill', Goth. *baurgs* 'town', OHG *burg* 'stronghold' < **b^hǵ^h*, also ON *bjarg*, OHG *berg* 'hill, mountain' < **b^herǵ^h*). The antiquity of the form **b^hǵ^h-to-* is perhaps corroborated by Lat. *fortis* 'strong', which can be derived from the same pre-form in view of OLat. *forctus* (attested in Festus).⁹⁸ Moreover, the same forma-

95 Other comparable compounds in Classical Greek are ναύφρακτος 'ship-fenced' (on which see Taillardat 1965), κατάφρακτος 'with raised deckboards' and, with *r*-dissimilation, δρύφακτος 'lattice wooden fence in a lawcourt'.

96 The meaning of πυργόω 'to provide with fortifications' is close to that of φράσσω in Homer.

97 Cf. *ka-ko*, *de-de-me-no* /k^halkōi dedemeno-/ 'fixed with copper': *ka-ko-de-to* /k^halko-deto-/ 'id.', *a-ra-ro-mo-te-me-na* /ararmotmena/ 'fit together': *a-na-mo-to* /anarmosto-/ 'unassembled'. The opposition with negated *to*-adjectives is found not only for middle perfects, but also with middle aorist participles in examples of archaic appearance, e.g. περίκλυτος 'known all around': κλύμενος 'famous', ἄφθιτος 'unwaning': φθίμενος 'dead'.

98 The comparison between Lat. *fortis* and Ved. *-br̥dhá-* was already suggested by Brugmann on several occasions. I do not subscribe to de Vaan's objection (EDL s.v.) that this etymology "does not explain the meaning of *fortis*". Although the meaning of *fortis* in Classical Latin is generally 'strong, brave', especially of men, it is conceivable that the older meaning was 'strong, well-defended'.

tion is attested in Vedic. The only Vedic verbal forms with the meaning ‘to strengthen’ are *pári ... babṛhānā-* ‘strengthened on all sides, fortified’ (*hapax*, RV 5.41.12), said of a rock (*ádri-*) that functions as a stronghold, and *pári bṛmhati* ‘fortifies’, *pari-bṛdhá-* ‘fortified’ (both ŚB).⁹⁹ Like *πεφραγμένος* and *ἄφρακτος* in Greek, these reflect pre-forms **b^{he}-b^hṛǵh-mh₁no-* and **b^hṛǵh-to-*. The formal and semantic match is perfect.

Thus, the reflexes of the root noun **b^hṛǵh-* and its derivative **b^hṛǵh-to-* formed the basis of a factitive verb meaning ‘to fortify’. This derivational scenario not only elucidates why *φράσσω* has factitive semantics, but it also explains why all stems contain a zero grade root allomorph, and why no primary verbal formations are attested.¹⁰⁰ The uncommon presents *φράγνυμι* and *φράσσω* follow productive patterns and are unlikely to have caused the introduction of *-ρα-* in the rest of the paradigm. In later Attic and the Koine, the root shape with *φρα-* gained ground. Although the precise origin of this *φρα-* remains unclear, it is not evident that it represents something old.

9.2.4 Conclusion

The three verbs with a non-ablauting root *CraC-* treated in this section cannot be used as evidence in favor of **r > -ρα-*.

- It is possible to analyze the root of *δράσσομαι* ‘to grasp with the hand’ as containing a nasal; morphologically it would be a nasal infix present. A reconstruction **dr̥ǵh-je/o-* for *δράσσομαι* would be matched by the cognate YAv. *dražaite* ‘holds’. In this connection, note that *βλάβομαι* (chapter 10) and *γράω* (section 9.1.4) favor the idea of a regular vocalization **CL̥C > CLaC*, rather than **CLanC*.
- The root shape *γροφ-* (probably an *o*-grade) in derived forms may suggest that the vocalization in *γράφω* ‘to write’ is analogical. If so, the occurrence of *γραφ-* in dialects with *o*-colored reflexes (e.g. Lesbian) must be due to borrowing. The possible cognates of *γράφω* in Germanic and Baltic suggest that the root was **gerb^h-*, but if that is the old root shape, the occurrence of *γροφ-* in derived forms remains unexplained. Therefore, the interpretation of the root shape *γραφ-* remains somewhat enigmatic, but it is not an argument in favor of **r > -ρα-* in Ionic-Attic.

99 The Indo-Aryan root *barh* ‘to strengthen’ is certainly derived from ‘to be high’: note that *bṛhánt-* may mean either ‘high, lofty’ or ‘strong, well-defended’. The verbal forms mostly occur in combination with the preverbs *ní-* or *upá-*, in which case they mean ‘to lay low’ or ‘to put underneath’, respectively.

100 Note the use of an instrumental dative in cases like Hdt. 7.142, ἡ γὰρ ἀκρόπολις τὸ πάλαι τῶν Ἀθηναίων ῥηχῶ ἐπέφρακτο ‘the Athenian acropolis used to be fortified with a palissade’.

- φράσσω ‘to fence in’ is to be derived etymologically from the zero grade of PIE **b^herǵh-* ‘to rise’. From Homer onwards, the verb normally has forms with -*ρα-* in all its stems and derivations, but there are various indications for an older reflex -*αρ-* in forms like aor. φάρξαι, ἄφαρκτος, φάργμα attested in Alcaeus as well as in Attic and Argolic inscriptions and the lexicographical tradition. Unfortunately, the precise origin of the double reflex in this word remains unclear.

9.3 An *o*-colored Reflex in Attic?

As noted in chapter 1, some scholars resign to the conclusion that *a*- and *o*-colored reflexes may appear in all dialect groups without further conditioning (Bader 1969: 57–58). Let us briefly consider the examples adduced by Bader for *o*-vocalism in Ionic-Attic in more detail.¹⁰¹

Cases of *o*-vocalism in a non-labial environment are easily accounted for in alternative ways. For instance, μητρόπολις ‘metropolis’ (Th.) may contain the compositional vowel -*ο-*. Forms like μητρόθεν ‘from the mother’s side’ (Pi., Hdt., trag., later also πατρόθεν) with the ablative case-suffix may have been influenced by the genitive μητρός or by compounds with μητρο-.¹⁰² Likewise, in compounds with a first member ‘man-’ the normal form is ἀνδρο- reflecting **an(d)r-o-*; three words with ἀνδρα- (ἀνδραφόνος ‘manslayer’, ἀνδρακάς ‘man by man’ and ἀνδράποδα ‘slaves’) are archaisms in which compositional -*ο-* was not introduced.¹⁰³ Finally, certain words with -*ρο-* < **r* in Ionic-Attic occur mainly or exclusively in poetry: βροτός ‘mortal’ < **mrtó-*, ῥόδον ‘rose’ < **ṛdo-* (cf. Myc. *wo-do-we* ‘rose-scented’ beside Sapph. βρόδον). In view of their restricted distribution, these forms cannot be used as evidence for the Ionic-Attic reflex. Bader also mentions θρόνος ‘chair’ (Myc. *to-no*), but it is uncertain whether this reflects **t^hyno-*.¹⁰⁴

Thus, there is no reason to doubt that the default reflex in Ionic-Attic was *a*-colored. In my view, the only potentially promising example of a vernacu-

101 There are also instances of *o*-vocalism in Cretan and Thera, see section 3.1.2.

102 Boeotian επιπατρόφιον ‘patronym’ (Tanagra, *Del.*³ 462 A 28, 3rd c.) has been adduced as evidence for the Aeolic reflex -*ρο-*, under the assumption that it was built on an old instrumental *πατρόφι < **patrp^hi*. However, as Ruijgh (1961: 196) remarks, the -*ο-* in this form could be a “voyelle de liaison”.

103 See section 7.3.3, also for the reflex -*ρα-* (rather than -*αρ-*) in these forms. Cf. also the PN Ἀνδραπομπος (*IG* XII,3 1139, archaic period, Melos).

104 See chapter 7 for a further discussion of these forms with -*ρο-* in Homer.

lar reflex -ορ- in Attic is πόρρω ‘further’, which could reflect PGr. **pr̥tiō*.¹⁰⁵ The variants of the stem are distributed as follows:

- πόρρω ‘further’ (old com., Pl., X., orators);
- πόρσω ‘id.’ (Pi., lyrical parts of tragedians);
- πρόσω ‘forward, further’ (Hom., Ion., trag., X.);
- πρόσσω ‘id.’ (Hom.);
- denominative verb πορσύνω, πορσαίνω ‘to prepare, provide for, arrange’ (Hom.+, poetic: Pi., trag.).¹⁰⁶

Homer has the Ionic form πρόσω as well as (Aeolic or archaic) πρόσσω, but does not use πόρσω (except indirectly in πορσύνω, πορσαίνω). Att. πόρρω (πόρσω) and Ion./Hom. πρόσω (πρόσσω) must be the same word in origin, given their complementary dialectal distribution and identical semantics.¹⁰⁷ In fifth century Greek, πρόσω is usual in Ionic (Herodotus, Hippocratic corpus), whereas in Attic the form only occurs in the tragedians (who apparently avoided the genuine Attic form πόρρω) and Xenophon (who also uses πόρρω). Clearly, πόρρω was the Attic vernacular form.¹⁰⁸

The shape of the Ionic form may have been influenced by πρό ‘in front; forward’, but the Attic form is more difficult to explain. It would be problematic to assume that πόρσω contains an *o*-grade, as this would entail that Proto-Greek had two formations for what is clearly the same word.¹⁰⁹ Furthermore, if the development of the PGr. intervocalic cluster **-rti-* (cf. pan-dialectal ἔρρω ‘to go crookedly’ < **uert̥iō*, cf. Forssman 1980) was indeed different from that of PGr.

105 Pindar also uses πόρσιον ‘farther’ and πόρσιστα ‘farthest’, secondary forms of comparison of the adverb.

106 This verb is not attested in comedy, nor in prose, except for the usual suspects of high-register vocabulary (Herodotus, Xenophon). In Epic Greek, ἀρτύνω, ἐντύνω, ἀλεγύνω and πορσύνω all share the basic meaning ‘to arrange, prepare’. Since there is no derivational motivation for the suffix -ύνω in πορσύνω, it was clearly influenced by this small group. The same has been proposed for ἀλεγύνω (DELG s.v. ἀλέγω); ἀρτύνω also seems secondary beside the expected formation ἀρτύω. This means that πορσαίνω (fut. πορσανέουσα Il. 3.411, v.l. πόρσαινε for πόρσυνε Od. 7.347) is probably the older form of the verb.

107 Cf. DELG s.v. πόρσω, pace GEW.

108 The form πόρσω is found in Pindar and in lyrical parts of Euripides and Sophocles, but not in Aeschylus; all four authors use πρόσω, mainly in dialogue. The tragedians clearly avoided using the Attic vernacular form with -ρρ-, and they may have viewed πόρσω as a form too specifically connected with lyric poetry; hence their choice for πρόσω, which was also metrically convenient in iambic trimeters.

109 In the meaning ‘forward’ PIE had **pr̥* and **pro*, but not **por*. Note that the comparison between Att. πόρρω and Lat. *porrō* (e.g. GEW s.v.) is probably illusory, because it does not explain the other Greek forms. An alternative explanation deriving Lat. *porrō* from **pr̥*-s plus -ō has been proposed by Nussbaum (1994: 173 with n. 43) and is accepted by EDL s.v. *por*-.

intervocalic *-*rs*- (preserved in Homer and many dialects as -*ρσ*-), *πόρσω* cannot be derived from **portĩō*. It has been proposed that the variation between Attic *πόρρω* and Ionic *πρόσω* is due to liquid metathesis (e.g. *DELG* s.v. *πρόσω*, Nussbaum 1994: 173), but this remains speculative, especially since this metathesis did not take place in Attic *πρός*. Furthermore, all five instances of Hom. *πόρσω* are used before a consonant with *McL* scansion, and never before a vowel with epic correption. I see no other way to understand this odd prosodic behavior than to assume that *πόρσ(σ)ω* reflects **pṛtĩō*.

Explaining *πόρρω* / *πόρσω* from **pṛtĩō* requires, first of all, that *-*tĩ*- underwent its normal development to *σ* after a syllabic nucleus *-*r*- (contrast again *ἔρρω* < **uertĩō*). This possibility is not contradicted by literary Doric *χάρρων* < **kṛtĩōn*, because the precise dialectal origin of that form is unclear (it could stem from a dialect in which -*ρρ*- and -*ρσ*- merged). A second requirement is that the *o*-reflex of *-*r*- in Attic *πόρρω* / *πόρσω* was conditioned by the preceding *π*-. This is more difficult, but not impossible. A general conditioning by preceding labial consonants is contradicted by e.g. *ἀμαρτεῖν* < PGr. **amṛte/o-* and especially by the isolated verb *μάρναμαι* < **mṛna-*. One could therefore assume that -*ορ*- developed only after bilabial stops.¹¹⁰ There is some apparent counterevidence, but in most cases a different explanation is conceivable.¹¹¹ Two more serious counterexamples are *φράσσω* ‘to fence in’ reflecting a zero grade of the root **b^herǵh-* ‘rise’, and the local adverb *πάρ* ‘beside’ < **pr*-. Although the aorist *φαρχσαι* attested in Attic inscriptions might show the regular reflex of **r*-, we have also seen (section 9.2.3) that the distribution between *αρ* and *ρα* in this verb remains quite obscure, which may cast doubt on whether the root really contained **r*-. As for *πάρ*, *παρ*-, it is unlikely that this shows the word-final reflex of *-*r* as it was normally used as a proclitic or a host to enclitics. On the other hand, it is not excluded that *πάρ*, *παρ*- was influenced by the extended form *παρά*, which may reflect a pre-form **prh₂e* or **prh₂o* (cf. Myc. *pa-ro*).

In sum, it is not excluded that *πόρρω* / *πόρσω* derives from a Proto-Greek adverb **pṛtĩō* ‘forward, further’. Such a reconstruction would explain the *McL* scansion of Homeric *πρόσω*, as well as the fact that the anaptyctic vowel

110 The regular treatment after labiovelars may be seen in *κυρτός* < **k^wrtó-* (section 1.3.2), while *βραδύς* from **g^wrd-ú-* could have an analogical *a*-vowel (chapter 4).

111 The Homeric aorist *ἔπραθον* ‘to pillage’ has analogical *a*-vocalism (see chapter 8). In the case of Hom. *πραπίδες* ‘midriff; senses’, the derivation from **prk^wid-* ‘rib cage’ proposed by Balles is not certain (see section 9.7.1). Moreover, neither form is used in Attic. Finally, *πράσσω* ‘leek’ is probably a borrowing (see section 9.1.8). Note that in all these examples the *a*-vowel follows the liquid. The etymologies of *παρθένος* ‘maiden’ and of *φάρσος* ‘part’ are uncertain (sections 9.7.2 and 9.1.8, respectively).

appears after the liquid there, but not in the Attic form $\pi\acute{o}\rho\rho\omega$. Assuming that $\pi\acute{o}\rho\sigma\omega$ arose from $\pi\acute{o}\rho\sigma\omega$ by liquid metathesis is *ad hoc* and does not explain the prosodic behavior of Homeric $\pi\acute{o}\rho\sigma\omega$. However, there is no further compelling evidence for an *o*-colored reflex in Ionic-Attic. We must therefore leave the case undecided.

9.4 The Development of $*r_n$

As mentioned in section 1.2.5, Haug (2002: 54) has suggested that $*r$ developed to $-\alpha\rho-$ before nasals in all Greek dialects. However, the two pieces of evidence adduced by him did not withstand closer scrutiny. I will now consider whether there is further evidence for a Pan-Greek *a*-colored development of $*r_n$, or for an early, Pan-Greek development $*r_n > *-\alpha rn-$ (with subsequent dialectal coloring of $*\alpha$). The following discussion will confirm that $-\alpha\rho-$ is the regular Ionic-Attic reflex also in this environment, but it will also show that there is little evidence for a Pan-Greek vocalization $*-\alpha rn-$.¹¹²

First of all, let us note that the development of $*l, *r$ in the Celtic languages yields a possible parallel for the development envisaged here. Normally, the syllabic liquids are reflected as $-li-$, $-ri-$ before stops and m :

- OIr. *cride* ‘heart’ < PIE $*k_2rdi\text{-}$;
- MW *clyd* ‘warm’ < PCelt. $*klito-$ < PIE $*k_2lto-$ (Lith. *šiltas* ‘id.’);
- OIr. *cruim* ‘worm’ < PCelt. $*k^wrimi-$ < PIE $*k^w_2mi-$ ‘id.’.

However, PIE $*l, *r$ yielded Proto-Celtic $-al-$, $-ar-$ before n , $*s$ and y :

- MW *carn* ‘hoof’ < $*k_2rno-$ ‘horn’ (cf. Lat. *cornu*, PGmc. *hurna-*);
- OIr. *marb* ‘dead’ < $*m_2r_3u\acute{o}-$, generally analyzed as a contamination of $*m_2rt\acute{o}-$ ‘dead’ and $*g^wh_3u\acute{o}-$ ‘alive’;
- OIr. *arcaid* ‘asks, pleads’ < PCelt. $*farske/o-$ < PIE $*pr(k)\text{-}ske/o-$ (cf. Lat. *poscō* ‘ask’, Ved. *prcchāti* ‘id.’);
- OIr. *carr* ‘wagon’ < $*k_2rso-$ (cf. PGmc. $*hursa-$ ‘horse’).¹¹³

Therefore, it would not be outlandish if we found evidence for a special (presumably earlier) vocalization of $*r$ not only in the position before glides (cf. section 1.2.2), but also before nasals.

¹¹² The group $*l_n$ is treated in section 10.5.

¹¹³ For all these etymologies, see the relevant lemmas in *EDPC*. For a discussion of the question whether the reflex $-ar-$, $-al-$ before the nasal present infix (cf. OIr. *at-baill* ‘dies’ < $*ad$ plus $*balni-$ < PIE $*g^wl\text{-}ne\text{-}h_1-$, W. *sarnu* ‘strew, spread’ < PIE $*str\text{-}n(e)\text{-}h_3-$) is regular or due to morphological pressure, see McCone (1991: 11–23).

- In Ionic-Attic, there are two potential examples for a reflex -ρα- before -ν-:¹¹⁴
- Hom. κράνεια ‘cornel tree’, Thphr. κρίνον ‘id.’, which is sometimes reconstructed as PIE *k_ṛno- in view of Lat. *cornus* ‘id.’. We have discussed the difficulties concerning the reconstruction of this word in section 6.9.4. Taken together, the various suffixes attested in Greek (cf. also the variants κρανία and κρανέα) and the botanical referent of the word make it difficult to exclude a borrowing.
 - κράνος (n.) is the usual word for ‘helmet’ in Herodotus and Classical Attic, where it has replaced the various Homeric terms (cf. *DELG* s.v.). Beekes (*EDG* s.v., cf. also *DELG* s.v.) remarks that κράνος “must be connected with the group of words for ‘head, horn’, but cannot contain a laryngeal”. Nussbaum (1986: 9) mentions the word as a possible *k_ṛ-n-es- or *k_ṛ-ne-s- *‘horn’ > *‘crest’ > ‘helmet’. In my view, this reconstruction is too mechanical: there are no clear outer-Greek comparanda, and the formation would be strange for an IE word (zero grade root, double suffixation *-n-es-). In view of its absence from Homer, I find it hard to believe that κράνος is an inherited word.
- In nominal formations with a pre-form containing *ḡn, there is no clear-cut evidence for -αρ- either:¹¹⁵
- The gloss κάρνος· φθείρ, βόσκημα, πρόβατον ‘louse; head of cattle’ (Hsch.) could reflect PIE *k_ṛno- ‘horned animal’ (see Nussbaum 1986: 6), at least in its second meaning. It may derive from *k_ṛno- and thus offers a much more likely continuant of the ‘horn’-word than κράνος ‘helmet’. Its formation can be reconciled with n-stem forms attested in other branches, and the meaning ‘cattle’ fits well (cf. OHG *hrind* ‘cow’). However, since there is no dialect indication, κάρνος cannot serve as evidence for the Ionic-Attic reflex.
 - The adjective σπαρνός ‘sparse, rare’ (class.) contains the root of σπείρω ‘to disseminate’ and can be reconstructed as *sp_ṛ-nó-. The suffixation may have been taken from the opposites πυκνός or συχνός (cf. *GEW* s.v. σπαρνός), and the verb may have influenced the vowel slot in the adjective.

The following verbal forms which continue *ḡn- have the vowel before the liquid:

-
- 114 The Homeric forms κραναός ‘rocky’ and ὀλιγοδρανέων ‘powerless’ have no convincing etymology. The aorist δραμεῖν ‘to run’ < *d_ṛm-e/o- can be analogical after δέδρομε or δρόμος. The noun τέτραμος ‘trembling’ (Hp.+) may have been influenced by the full grade slot of τρέμω. The reconstruction of τράμις ‘perineum’ (Archil.+) as *t_ṛmi- and its further connection with the verbs τείρω or τετραίνω, though accepted by Frisk (*GEW*), lacks motivation; the more remote connection with Germanic *p_ṛma- ‘intestine’ is a guess.
- 115 The gen. sg. ἀρνός ‘lamb’ must be analogical after the nom. sg. ἀρήν in view of the laryngeal reflex in πολύρρην ‘rich in lambs’ and Ved. *úran-* ‘lamb’.

- θόρνυμαι ‘to mount’ (Hdt.) and θάρνυσθαι ὀχεύειν, κυτσκεσθαι ‘to mount, get pregnant’ (Hsch.), generally assumed to reflect PIE **dʰr-n-h₃-*, from the root of θρώσχω ‘to jump’.
- μάρναμαι ‘to battle’ (Hom.+) < PIE **mr-n-h₂-*, dissimilated βαρναμενος (Att. and Corc. inscr.); cf. also μορνάμενος· μαχόμενος ‘fighting’ (Hsch.).
- πορνάμεν· πωλεῖν ‘to sell’, πορνάμεναι· κεντούμεναι, πωλούμεναι (both Hsch.) < **pr-n-h₂-*, beside Class. πέρνημι ‘to sell’, which took over the root vocalism of its aor. περάσαι.
- πτάρνυμαι ‘to sneeze’ (Class.), aor. ἔπταρν (Od.) < PIE **pstr-nu-*.
- στόρνυμι ‘to spread out’, probably for **στάρνυμι* < **stʰr-n-h₃-* with the root vocalism of its aor. σπορέσαι.

The question is whether any of these forms is compelling evidence for the regular, undisturbed outcome of **r̥n*. The presents πτάρνυμαι and θόρνυμαι can be reconstructed as PGr. **ptʰr-nu-* and PGr. **tʰr-nu-* (for PIE **dʰr-n-h₃-*), respectively, and their vowel slot may theoretically have been influenced by the thematic aorists παρεῖν and θορεῖν. Moreover, as the gloss θάρνυσθαι (Hsch.) shows, the vowel quality of θόρνυμαι was indeed influenced by the aorist θορεῖν. Therefore, we must assume that the same development took place in στόρνυμι for older **στάρνυμι*.¹¹⁶ This renders uncertain the value of most such nasal presents as evidence for a Pan-Greek vocalization to -αρ-.

The two forms πορνάμεν and μορνάμενος, however, definitely speak against a Pan-Greek *a*-anaptyxis because they show an *o*-vowel which cannot be analogical. Both are only attested as glosses, but there is no philological reason to doubt their authenticity. In πορνάμεν, the combination of *o*-vocalism with the infinitive ending -μεν suggests a Thessalian or Boeotian origin.¹¹⁷ It is true that the anaptyctic vowel was normally inserted after the liquid in Aeolic dialects (cf. στρότος), but in πορνάμεν the corresponding aorist stem (cf. Ion.-Att. περάσαι) may have influenced the place of anaptyxis.¹¹⁸

Even better evidence is provided by μορνάμενος and μάρναμαι. We are dealing here with a defective paradigm without any other stems, meaning that both forms probably contain the regular and unrestored outcome of **mr̥na-*. The epic and lyric form μάρναμαι can only stem from Ionic-Attic. There is no

¹¹⁶ For πτάρνυμαι one may doubt this scenario, because the νυ-present is probably inherited (in view of Lat. *sternuō*, cf. LIV² s.v. **pster-*), and the aor. ἔπταρν may have been based on this present within Greek. There is, however, no reason to insist on this point.

¹¹⁷ But a Cretan origin cannot be entirely excluded either, cf. section 3.1.2 on the evidence for *o*-vocalism after labials in this dialect.

¹¹⁸ Note that Ionic has introduced the vowel of the aorist περάσαι in the present πέρνημι ‘to sell’; but in μάρναμαι, which has no aorist, the root has the expected *a*-vocalism.

indication of dialect in the gloss *μορνάμενος*, but a reflex *-ορ-* would be regular in Arcadian, and possibly in Cretan (only after labial consonants) and Cyprian (see chapter 3). No matter from which concrete dialect these two glosses were taken, they prove that the vocalization of **C_rnV-* differed per dialect. This refutes Haug's claim that **CLNV-* resulted in Common Greek **CaLNV-*.

The nasal present *μάρναμαι* 'to fight, contend' (Hom.+), with the by-form *βαρναμενος* of the participle (inscr.),¹¹⁹ is the only formation of this root attested in Greek. The etymological identification of this nasal present with Ved. *mṛṇāti* 'to rob, grab', as from PIE **m_r-n-h₂-*, is plausible.¹²⁰ Reciprocal semantics in the Greek middle present would explain the semantic development to 'fight' (via "to catch hold of one another", e.g. in a wrestling match). It was formerly thought (e.g. Kuryłowicz 1968: 318) that the variation *μάρναμαι* ~ *βαρναμενος* (with *b-*) presupposed an original vocalization **m_rnamai* > **mranamai* > **branamai*. However, this scenario cannot be correct because there would have been no clear model to reshape a putative **branamai* or **mranamai* as *μάρναμαι* or *βαρναμενος*, respectively. There is no further trace of the root **merh₂-* in Greek, let alone of an ablauting full grade form.¹²¹ A reasonable alternative explanation for *βαρναμενος* has been suggested by Lejeune (1972: 152) and Méndez Dosuna (1985: 142): the sequence of nasals **m ... n ... m* was dissimilated to *b ... n ... m*.

We may conclude that *μάρναμαι* is strong evidence for a regular Ionic-Attic development **r* > *-αρ-* before *n*. The glosses *πορνάμεν* and *μορνάμενος* prove that the reflex of **ṛn* underwent the *o*-coloring of other dialects (Aeolic, Arcado-Cyprian, perhaps Cretan), thus disproving Haug's idea of a Pan-Greek vocalization **r* > *-αρ-* before *n*. Moreover, *μορνάμενος* proves that some *o*-coloring dialect also had the same vocalization slot as Attic *μάρναμαι*, but unfortunately the gloss has no indication of dialect. Given the evidence, it is possible to assume

119 The form *βαρναμενος* is attested three times: *IG* IX,1² 868 (Corcyra, 6th c.); *IG* IX,1² 214.4 (Acarnania, 5th c.); *IG* I² 934.46 (Attic, 4th c.).

120 It is accepted by Mayrhofer (*EWAla* s.v. *MAR*¹ 2), referring to Thieme for the distinction within Vedic from *mar*ⁱ (*mṛṇāti*) 'to crush', which probably derives from a different root with PIE **l*.

121 Within Greek, the *LIV*² compares *μαραίνω* 'to quench', but it is not clear how the comparison with *μάρναμαι* works formally. The idea that *μαραίνω* is from **m_rnh₂-enti* (*LIV*²), from the same paradigm as **m_r-neh₂-ti*, can hardly be correct: **m_rnh₂-enti* (without the vocalization signs) would yield **mrananti* (**CRh₂e-* > *CaRa-*). It is better to compare *μαραίνω* with **mer-* 'to disappear' (with a secondarily added suffix *-αίνω*, for which Frisk (*GEW* s.v.) compares *κηραίνω* 'to destroy' and *ιαίνω* 'to invigorate'), or else to leave it without etymology.

an early, Pan-Greek anaptyxis $*_f n > *_{ə} n-$, but it is difficult to prove this because the Ionic-Attic forms may also show the regular development of $*_f$ before other consonants.¹²²

9.5 Word-Final $*_f$

Concerning word-final $*_f$, there are two questions to be answered. First, various scholars have posited an early, Common Greek change $*_f > -\alpha\rho$ which took place prior to the vocalization of $*_f$ in word-internal position.¹²³ Given that something similar happened in Indo-Iranian and Celtic,¹²⁴ this would be typologically plausible. It must be asked, however, whether all dialect groups underwent such a change, as there is also some evidence for a reflex $-o\rho$: according to Ruijgh, this is found in the old epic words $\eta\tau o\rho$ ‘heart’ and $\alpha\sigma\tau o\rho$ ‘sword’. A second question is whether the anaptyctic vowel was always inserted before the liquid in word-final position, and if so, whether it is possible to determine more precisely when this anaptyxis took place.

9.5.1 $*_f > -\alpha\rho$ or $-o\rho$?

Let us first discuss the attestations of $\eta\tau o\rho$ and $\alpha\sigma\tau o\rho$ in more detail, as these are the two key examples for $-o\rho < *_f$.

In Homer, $\alpha\sigma\tau o\rho$ is attested in the nom.-acc. sg. ($10 \times$) and dat. sg. $\alpha\sigma\tau o\rho i$ ($12 \times$, mostly as a dactyl with metrical lengthening of α -).¹²⁵ Its inflection as a non-heteroclitc neuter in $-o\rho$ is aberrant, and the etymology is unclear. The traditional derivation as a root noun belonging to $\acute{\alpha}\sigma\iota\rho\omega$ (PIE $*h_2uer-$) as ‘what is attached, what hangs’ (“Gehänge”, *GEW* q.v.) is phonologically impossible if the

122 However, in the case of $*_f n$, as we will see in sections 10.5 and 10.6 a Pan-Greek development to $*_{ə} n-$ can be excluded on account of the West Greek adverb $\alpha\phi\lambda\alpha\nu\epsilon\delta\varsigma$ ‘all together’ (Elis), $\acute{\alpha}\lambda\alpha\nu\epsilon\omega\varsigma$ $\acute{\alpha}\lambda\omicron\sigma\chi\epsilon\rho\acute{\omega}\varsigma$, $\tau\alpha\rho\alpha\nu\tau\acute{\iota}\nu\omicron i$ (Hsch.).

123 See e.g. Schwyzler (1939: 342), Lejeune (1972: 196), García Ramón (1985), Sihler (1995: 92).

124 See García Ramón (1985: 203), and for the possibility of a conditioned development of $*_f$ in Latin, see Frotscher (2012). In Vedic $_f$ was preserved in word-internal position, but the vocalization of final $*_f$ had already occurred, cf. $\acute{u}dhar$ ‘udder’ < PIE $*(H)\acute{u}Hd^h_f$ and the verbal ending 3pl. pf. ind. $-úr$. Frotscher (2012) has argued that accented $*_f$ yielded $-úr$, as also in $sthātúr$ ‘immovable wealth’, as opposed to unaccented $*_f > -ar$. In Irish, the word-final change $*_f > -ar$ (OIr. *arbor* ‘grain’ < PCelt. $*aray_f$ < PIE $*h_2erh_3-ur$) differs from the word-internal development $*_f > -ri-$ (OIr. *cride* ‘heart’ < $*krd-io-$); again, the latter change must have taken place later.

125 The *hapax* acc. pl. $\alpha\sigma\tau\alpha\varsigma$ (*Od.* 17.222), irreconcilable with a neuter form, must be secondary (cf. *GEW* q.v.).

Mycenaean PN *a-o-ri-me-ne* /*ahori-menēs*/ is related. Moreover, there are other issues: neuter root nouns are exceedingly rare,¹²⁶ and the assumed semantic development is not compelling, to say the least. The alternative reconstruction **ṛs-r̥* (based on the comparison with Lat. *ēnsis* ‘sword’, Skt. *así-* ‘knife’, and perhaps Palaic *ḥasira-* ‘dagger’) is better from a semantic viewpoint, but it leaves the divergent suffixation of the Greek word unaccounted for.¹²⁷ Analyzing **ṛs-r̥* as “life-saver”, with the zero-grade root of *νέομαι* ‘to return’ (Ruijgh 1985: 153), is semantically far-fetched. In view of these problems, and since we are dealing with an item of material culture, a borrowing seems more likely (cf. synonymous *φάσγανον*). For these reasons, I will exclude *ἄορ* from the evidence.

The neuter *ῆτορ* is a much more serious case. It only occurs in the nom.-acc. sg. in Homer (95 ×, mostly verse-final),¹²⁸ but unlike for *ἄορ*, cognate formations are attested. In Classical prose we find *ῆτρον* ‘abdomen’, and the outer-Greek cognates (OHG *ādara* f. ‘vein’, possibly OIr. *inathar* ‘entrails, bowels’) contain an *r*-suffix as well. All these forms seem to be thematicizations (or extensions) of a PIE stem **h₁eh₁t-r-*. It is therefore reasonable to reconstruct PGr. **ētr̥* as the input form of *ῆτορ*.

The question then remains from which dialect this form may stem. Ruijgh (1961: 205) supposes that *ῆτορ* is an Achaeian element of Epic Greek. In his view, in every individual dialect the anaptyctic vowels arising in word-internal position had the same quality as those arising in word-final position; the only difference between both positions was the place of the anaptyctic vowel (internal **-rə-* versus final **-ər*). He therefore thinks that **-r̥* > *-ορ* was regular in Achaeian and Aeolic, while *-αρ* was the regular reflex in West Greek and Ionic-Attic. His main pieces of evidence for this conclusion are *ῆτορ* and *ἄορ*.

In reality, however, there is also evidence for */-ar/* in Mycenaean. Ruijgh considers the forms Myc. *a-mo-ra-ma* /*āmōr-āmar*/ ‘day by day’ < **āmōr-ām̥r̥* (cf. also Cypr. *āmar*) and Myc. *AREPA* ‘unguent’, a monogram representing nom.-acc. /*aleip^har*/ < **aleip^hr̥*.¹²⁹ Both words are heteroclitic neuters, and in such paradigms the same reflex *-αρ* is also found in the Lesbian poets. In Ruijgh’s view, this reflex is due to the analogical introduction of *a*-vocalism from the oblique cases in *-at-* < **-nt-* into the nom.-acc. sg., which would have originally

126 One of the very few cases is *κῆρ* ‘heart’ < **kērd*. It cannot be excluded, though, that *ἄορ* secondarily acquired neuter gender following other words denoting an offensive weapon, such as *φάσγανον*, *ξίφος*, *ἔγχος*, *δόρυ*.

127 For further criticism of this etymology, see *EDL* s.v. *ēnsis*, with refs.

128 The dat. sg. *ῆτορι* is found only once in Pindar (fr. 52 f.12) and is clearly secondary.

129 Incidentally, **aleip^hr̥* may in my view have arisen from **aleip^h-ur̥* by a regular loss of the bilabial glide after a labial obstruent.

ended in **-or* in these dialects.¹³⁰ However, although such an analogical development is certainly conceivable, we unfortunately do not know from which dialect ἦτορ was taken. This means that we have no unambiguous evidence in favor of **-r* > *-or* in the 'Achaean' dialects.

There is, in fact, further evidence for a development **-r* > *-ar* in the 'Achaean' dialects.¹³¹ García Ramón (1985: 212–216) gives a number of arguments, of which the following is strongest.¹³² The Homeric adversative conjunction αὐτάρ (cf. Homeric τὰρ < **tr*) turns up as *autar* in Cyprian, a dialect which furnishes evidence for an *o*-colored reflex in word-internal position (see section 3.4).¹³³ Unlike the evidence for heteroclitic neuters, this form cannot have undergone analogical influence within a paradigm. If Cypr. *autar* (and Hom. αὐτάρ) indeed contain the reflex of an inherited particle **tr*, they speak in favor of an early word-final outcome *-ar* in the Achaean dialects.

Returning to the problematic origin of ἦτορ: Peters (1980: 237) follows Ruijgh's scenario in several important respects, but views ἦτορ as an Aeolism of Epic Greek.¹³⁴ He also adduces another piece of evidence for an Aeolic reflex

130 Peters (1980: 237) suggests that neuters in *-αρ* in Sappho and Alcaeus are Ionic forms that were introduced later in the texts of the Lesbian poets, supplanting original forms in *-ορ*. This is not excluded, but it seems unnecessary to me. Ruijgh also uses the assumed Mycenaean development to *-ορ* to explain the *o*-vocalism in neuters like *pe-mo*, but as we have seen in section 1.3.3, such a leveling does not solve all problems.

131 Pace Haug (2002: 51), the evidence for word-final **-r* in Achaean dialects does not consist only of heteroclitic neuters.

132 In addition, García Ramón notes that the monogram *AREPA* (with an underlying nom. sg. form) probably came into being at an early date. It is true that this would diminish the likelihood that the form was analogically influenced by the oblique cases, but it does not guarantee anything. Furthermore, García Ramón views the particle chain in Myc. *o-de-qa-a₂*, *o-da-a₂*, *o-a₂* as containing a particle *-a₂ /-(h)ar/* and compares it with Hom. ἄρ, ῥα, ἄρα, which he derives from PIE **r*. However, I agree with Haug (2002: 52) that it would be hazardous to base any conclusions on the reconstruction of this particle. Finally, Arc. *παρ* (also adduced by García Ramón) is a problematic form: as a preposition or local adverb, the form was usually proclitic, so one would perhaps expect it to show the word-internal development. However, the word-internal reflex in Arcadian was *o*-colored, not only after labials (cf. the form *τετορτος* and see section 3.4.3). This could imply that *παρ* does not reflect **pr* but an extended form (perhaps **prh₂o* as reflected in Myc. *pa-ro*, but cf. also Class. *παρά*) that underwent apocope. The unextended form **pr-* of this preverb probably remained in use too, cf. Hom. *προκείμενα* < **pr-keimena* under the interpretation proposed in section 7.2.7.

133 Katz (2007) argues that ἄτάρ and αὐτάρ are two separate particles, and that only αὐτάρ contains the old particle τὰρ < PIE **tr* (Luw. =*tar*).

134 García Ramón (1985: 214) suggests that the vocalism of ἦτορ and ἄορ was taken secondarily from the compounds in *-ήτωρ*, *-άωρ* (*μεγαλήτωρ*, *χρυσάωρ*). I doubt whether this can be correct, because the supposed analogy would have led to the introduction of a novel

-ορ: Aeol. ὄνειρος ‘dream’ is analyzed most naturally as a contamination of PGr. **onerjo-* (Class. ὄνειρος) with *ὄνορ, assuming that this was the Lesbian outcome of **onər* (Class. ὄναρ) (Peters 1980: 198).¹³⁵ This scenario receives support from the Cretan forms ἄναιρον and ἄναρ (glossed respectively as ὄνειρον and ὄναρ in Hesychius): in this dialect, too, the reflex of **onerjo-* seems to have been influenced by that of the neuter noun.¹³⁶ Thus, a word-final reflex -ορ in Aeolic has some plausibility.

In sum, Homeric ἦτορ militates against a Common Greek change **-r* > -αρ. The form is almost certainly a vestige of a dialect with **-r* > -ορ—probably some Aeolic dialect (Peters 1980: 237), or else a Bronze Age Greek dialect that we no longer know of. Moreover, given that the normal Aeolic word-internal reflex of PGr. **r* is -ρσ-, it seems likely that the anaptyctic *shwa* was phonologized earlier before word-final **-r*.

9.5.2 **r* in Ionic-Attic: -αρ versus -ρα and Chronology

Ionic-Attic has αρ < **r* in both word-internal and word-final position. Therefore, when arguing for a chronological priority of the word-final development, we are looking for arguments of a different nature. Before dealing with this chronological question, however, we must consider the potential evidence for word-final **-r* > -ρα.

Hoenigswald (1988: 201–202) proposed that the outcome of **-r* depended on the weight of the preceding syllable. He noted that most instances of word-final -αρ follow a heavy penultimate syllable, e.g. ἡμαρ ‘day’ (Myc. *a-mo-ra-ma*), φρεῖαρ ‘source’, ὀνειαρ ‘benefit’ (all Hom.+) < PGr. **ām̥r*, **p^hrē̥m̥r*, **onḁ̄m̥r*. He posited a conditioned development **-r* > -ρα after a light syllable in the following instances:

- ἄρουρα f. ‘farmland’ (Myc. *a-ro-u-ra*) from a heteroclitic PGr. **aro-ur̥* (n.) derived from ἀρόω ‘to plow’ (the change of gender and inflection type would be secondary);

morphological type (neuters in -αρ were a well-established category, and they co-occur with compounds in -ωρ) and because it does not explain why only these two words were affected.

- 135 In addition, Peters claims that Proto-Greek already had **-ər* (with phonemic *shwa*) as the reflex of word-final **-r*, and that this *shwa* was colored differently in Aeolic and Achaeian, compared to Ionic-Attic and West Greek. This requires that Proto-Greek already had a phoneme /ə/, which originated in **CRHV*-sequences. That claim hinges on the interpretation of certain Lesbian forms, chiefly τόμοντες and χόλαισι (on which see section 1.2.1).
- 136 It is in my view unlikely that Aeol. ὄνειρος arose from **onōrjo-* by Osthoff’s Law (a pre-form also required for Arm. *anurj* ‘dream’) as this would multiply the forms to be reconstructed for Proto-Greek beyond necessity.

- ὑπόδρα adv. ‘(looking) sternly’ < PIE **upo-dʰk*;
- τόφρα conj. ‘up to that point, that long’, which has been reconstructed as PIE **tó-bʰr-t*, literally “carrying that”, by Hamp (1983).¹³⁷

There are two general issues with Hoenigswald’s idea. As we have seen in section 1.4.5, his account does not adequately explain the evidence for word-internal **j*. Secondly, there are various counterexamples:¹³⁸

- ἔαρ n. ‘spring’ < PIE **ues-r*
- θέναρ n. ‘palm of the hand’ < PIE **dʰen-r*
- Att. δέλεαρ n. ‘bait’ < PGr. **gʷéle-ur*
- ὄναρ n. ‘bad dream’ < **h₂on-r* and ὕπαρ ‘waking vision’ < **sup-j*¹³⁹
- ἄφαρ adv. ‘straightaway; suddenly, swiftly’ (34× in Homer, often followed by δέ), if this reflects **h₂ebʰr*.¹⁴⁰

For ἔαρ, Hoenigswald assumes that -αρ was introduced from other heteroclitic neuters, but in that case, it would remain unclear why this did not happen in the precursor of ἄρουρα. Note in particular that ἔαρ and θέναρ are completely isolated, while the assumed **aro-ur* may still have been analyzable as a deverbative formation (ἀρώ ‘to plow’).¹⁴¹ As we will see below, ἔαρ probably did not undergo analogical influence of its oblique stem because the latter never became -ατ-; the same holds for θέναρ.

Att. δέλεαρ is synchronically isolated: note the palatalized labiovelar reflex δε- (as opposed to restored or dialectal β- in Homeric βέλος, βέλεμνα). In my view, it has the older meaning ‘pierce’ of the PIE root **gʷelh₁-* continued in βάλλω ‘to throw, hit’. Admittedly, it cannot be excluded that **gʷeleuar* is analogical on the basis of the oblique stem **gʷeleuat-*, but the lexicalized meaning ‘bait’ (rather than an abstract meaning “that which has been pierced”) renders this less likely. The forms ὄναρ and ὕπαρ are less compelling evidence, as the

137 The -*t*-extension in compounds with root nouns as a 2nd CM was regular for roots ending in a liquid or glide already in PIE: cf. the Vedic compounds in -*kṛt-*, -*ṛt-*, and especially *bhāra-bhṛt-* ‘carrying a burden’.

138 Most scholars assume that ἄταρ reflects **h₂et* (Lat. *at*) plus the particle ἄρ, ῥα (see Katz 2007), and I will refrain from pronouncing myself on the reconstruction of that form. Thus, contra Van Beek 2013, ἄταρ cannot be used in this discussion.

139 Or perhaps rather **sup-ur*, as bilabial glides were lost regularly after a labial occlusive.

140 The reconstruction of ἄφαρ as **h₂ebʰr* may receive support from the arguments given in section 7.2.8 for the reconstruction of Ἀφροδίτη as **h₂ebʰr-diH-teh₂-* ‘she who appears straightaway (at dawn)’.

141 As an alternative reconstruction, Hoenigswald (l.c., n. 15) posits a pre-form **mēs-r*. However, reconstructing a lengthened grade is *ad hoc* given that Homeric εἶαρ- can be adequately explained by metrical lengthening in a tribachic sequence.

place of the anaptyxis in ὄναρ could be accounted for relatively easily as influenced by ὄνειρος, and the words may have mutually influenced each other.

Thus, in Hoenigswald's scenario it remains unclear why forms like ἄαρ, θέναρ and δέλεαρ were analogically restored, while ἄρουρα escaped restoration. What is more, upon closer consideration it appears that none of the three examples adduced by Hoenigswald is compelling. To start with the reconstruction of ἄρουρα, the Old Irish paradigm *arbor*, gen. *arbe* 'grain, corn' < PCelt. **arau̯r*, **ar̥ens* indeed reflects an original heteroclitlic neuter, but this does not mean that ἄρουρα continues the same formation.¹⁴² In fact, the Greek word is more commonly reconstructed as **aro-ur-ia* (PIE *Transponat* **h₂erh₃-ur-ih₂*), which would directly account for its inflection type.¹⁴³ It must be admitted, however, that the non-vocalization of *r* in a cluster *-*ur̥i*- is not self-evident, and that there are no direct parallels for the development of *-*ur̥i*-.

Alternatively, ἄρουρα could reflect the neuter plural of a thematic derivative PGr. **aro-ur-o-* that was reanalyzed as a feminine singular *ia*-stem. There are at least two other Greek words that reflect thematicized heteroclitics:

- ἄλευρον, plur. ἄλευρα 'flour' < **ale-ur-o-m* beside Hom. ἀλείατα, cf. also Arm. *aliwr* 'flour' < **alēu̯r* or **alēu̯ōr* < PIE **h₂léh₁-u(ō)r*;¹⁴⁴
- νεῦρον and νευρά, both 'sinew, bowstring' < PIE **snéh₁-ur-o-m*, **-éh₂-*. In this case, Greek has lost the old heteroclitic preserved in YAv. *snāuuarə* 'sinew' < PIE **snéh₁-ur*.

As for τόφρα, Hamp's reconstruction PIE **to-b^hr-t* is merely a possibility: the identification of -φρ- as reflecting **b^her-* 'carry' is not implausible, but other reconstructions of the final -α can be imagined. For instance, τόφρα could reflect the neuter plural of a thematic formation **to(d)-b^hr-o-*. Alternatively, -α may have been taken over from another temporal conjunction (cf. ἔνθα 'then; when' or ἔπειτα 'then') after the loss of *-*t*, at a time when syllabic and consonantal *r* were allophones.

This brings us to ὑπόδρα < **upo-dr̥k*, a very serious piece of evidence. It only occurs in one single epic formula ὑπόδρα ἰδῶν |_P 'looking sternly' (26 × Hom.) from **upodra iḍōn*.¹⁴⁵ Since all other forms with etymological word-

142 Widmer (2004: 45–46) comments on the semantic difference between 'grain' in Celtic and 'cultivated land' in Greek.

143 The problems are discussed in detail by Peters (1980: 143 ff., following a suggestion by Solmsen 1909: 269). Peters assumes that ἄρουρα reflects a motional feminine **arou̯r̥ia*, and that it constitutes the sole example of the unrestored outcome of PIE **-CRih₂* in Greek.

144 Cf. also Myc. *me-re-u-ro* 'id.' < **mele-ur-o-*, the same formation but with a different root meaning 'grind'.

145 Otherwise only attested in primary sources as ὑπόδρα ἰδοῦσ' (*Scut.* 445). The secondary

final **-r* have already ended up with *-αρ* or *-ορ* in Homer, it would be attractive to ascribe the different outcome in *ὑπόδρα* to the one-time presence of a word-final occlusive. Thus, I propose that the vocalization of word-final **-r* preceded the loss of final **-k*, and that *ὑπόδρα* is the outcome of a form **upodr* with Epic **r*. This yields the following relative chronology:

- word-final vocalization **-r* > *-αρ* or *-ορ* (**upodrk* retained)
- loss of word-final occlusives (**upodrk* > **upodr*)
- creation of the epic phrase **upodr uidōn*¹⁴⁶
- vocalization of remaining vernacular **r* > *-αρ-* (**upodr uidōn* preserved)
- vocalization of Epic **r* as *-ρα-* / *-ρο-* (**upodr* > *ὑπόδρα*)

There is one complication: the reconstructed phrase **upodr uidōn*, with its sequence of four light syllables before the masculine caesura, did not fit in a hexameter. This means that we have to assume an old metrical lengthening in the arsis of the second foot. This is conceivable: a similar case is provided by the pair *ἀπειρέσιος* ~ *ἀπερείσιος* ‘countless, unlimited’, both adaptations of a pre-form **n-per-eto-* ‘which cannot be traversed’.¹⁴⁷ Interestingly, the choice of the syllable to undergo metrical lengthening depended on the construction: *ἀπειρέσιος* (4×, of which 3× before |_p) contains the default metrical lengthening, and the alternative *ἀπερείσια* (13×) naturally occurs in the neuter plural, cf. verse-final *ἀπερείσι*’ *ἄποινα* and *ἀπερείσια* *ἔδνα*. The objection that **upodr uidōn* consists of two words is irrelevant: it functioned as a single phrasal unit, and as such required metrical lengthening (cf. the phrases *Στυγὸς ὕδατος* and *Στυγὸς ὕδωρ*, with metrical lengthening of the first syllable of *ὕδωρ* and *ὕδατος*). Two further Homeric cases of old metrical lengthening in the second arsis are *ἡγάθεος* (a traditional epithet of Pylos occurring 11×, always before |_p) and the phrase *ὥρῃ ἐν εἰαρινῇ* (4× before |_p), on which see below.

As far as I am able to see, this is the only way to account for the deviant outcome *-ρα* of etymological **-rT* in *ὑπόδρα*, as opposed to *-αρ* < **-r* in all other word-final examples. The loss of word-final stops was very early: it has left no prosodic reflexes in Epic Greek, nor any ascertained phonological traces in Greek generally. Thus, *ὑπόδρα* furnishes indirect evidence for an early, Common Greek vocalization of word-final **-r*.¹⁴⁸

reshaping *ὑποδράξ* ‘id.’ occurs first in the Hellenistic poets Callimachus and Nicander. On the use of the Homeric formula, see Holoka 1983.

146 A more original shape of the formula may have been **upodr drkōn*; see section 8.3.1 on the semantics of the root *δερκ-*.

147 For this semantic interpretation and the deverbal derivation of *ἀπειρέσιος*, *ἀπερείσιος*, see Vine (1998: 26 ff.).

148 On the basis of *ὑπόδρα*, various scholars have claimed that the *word-internal* development

Are there further arguments supporting such an early vocalization? García Ramón (1985: 212–213) has drawn attention to ἔαρ (gen. sg. ἔαρος) ‘spring’ < PGr. **uesr̥*. In his view, this form proves the chronological priority of **r̥* > -αρ over the intervocalic lenition *-s- > -h-, as he thinks this lenition could only have operated on a form ending in -ar, not **r̥*. However, Haug (2002: 51) rightly remarks that a development PGr. **uesr̥* > **uehr̥*, followed only later by a vocalization of **r̥*, cannot be excluded. The example does prove that final **r̥* vocalized before the loss of intervocalic **h*, but the same probably holds for word-internal **r̥* (cf. τραυλός ‘lispering’ < **trahuló-*, ultimately reflecting **t̥rsuló-* with the root **tres-* ‘tremble’: see section 9.1.6). Thus, the *reflex* in ἔαρ does not prove a chronologically distinct word-final vocalization of **r̥*.

The paradigm of ἔαρ and its derivatives provide a more promising indication. The only attested oblique stem is ἔαρ-, and in Homer the adjective meaning ‘spring-’ has the form εἰαρινός, with metrical lengthening, in the first hemistich ὦρῃ ἐν εἰαρινῇ (4×), probably replacing an earlier *ὦρῃ (f)εἰαρινῇ (cf. Chantraine 1958: 128). We also find a verse-final phrase with the genitive, εἶαρο[ς ὦρῃ ‘in spring’ (Hes. fr. 70.13), ἦαρος ὦρῃ (*h. Dem.* 174), again with metrical lengthening. This evidence suggests that -αρ- was generalized in the weak stem at an early date.

The PIE ancestor of ἔαρ may have been a heteroclitic neuter **ues-r̥*, **ues-n-*.¹⁴⁹ Greek, like various other languages, lost the oblique stem with a nasal. We may reconstruct the prehistory of the attested Greek forms as follows:

**r̥* > -ρα- pre-dated the loss of word-final stops, e.g. Meier-Brügger (1992b: 288) and Barnes (2011: 2 with n. 6). However, this argument depends on two crucial premises: (1) that the normal word-internal development in Ionic-Attic was **r̥* > -ρα-, and (2) that word-final **r̥* > -αρ necessarily occurred around the same time as word-internal **r̥* > -ρα-. In my view, neither assumption can be upheld.

149 No individual IE language attests such a paradigm, but a suffix -n- in this word is attested in Slavic (e.g. OCS *vesna* ‘spring’), while Lith. *vāsara* ‘summer’ has a form with -r-. Moreover, the suffix of Ved. *vasantá-* ‘spring’ contains a nasal, while YAv. *vayri* ‘in spring’ reflects **ués-r-i*. Gąsiorowski (2012) has argued that Lat. *vēr vērīs* arose by analogical leveling of a paradigm **vērer vērīs* < **vērer vēnis* < **uēs r̥ uesn-V-*, and that ON *vár* continues PGmc. **wezró-* with loss of the sibilant after Verner’s Law. In Van Beek 2013, I doubted whether a heteroclitic form could be reconstructed for PIE and assumed that the -n- in Slavic was taken from the word for ‘autumn’ (OCS *esenn̄*, OPr. *assanis*). I now think that this is unnecessary, and that the PIE word may have had an endless locative: see below. A pre-form **ués-r̥* > unattested Ved. *vāsar** could also be reflected in the derived *vr̥ddhi*-adjective *vāsará-* ‘matutinal’ (Ved. *vasarhá-* is of unclear meaning), while Ved. *báśri* ‘in the morning’ (if with secondary b-) might be a direct counterpart of YAv. *vayri*; both would be extensions of the old endless locative.

nom. sg. * <i>úesr</i>	> * <i>úesār</i> /* <i>úehār</i>	> ἔαρ
loc. sg. * <i>úesr-i</i> (cf. YAv. <i>van̥ri</i>)	>> * <i>úesār-i</i>	> *ἔαρῐ > ἦρῐ 'in spring'
adj. * <i>úesri-nó-</i> (cf. Lat. <i>vernus</i>)	>> * <i>úesār-inó-</i>	> Hom. εἰαρινός ¹⁵⁰

One would expect to find the outcome of **úesri-nó-*, *εἰρινός. It is relevant that there is no trace of such a form, because a putative *εἰρινός ὥρῃ 'spring season' (and inflected forms) would have yielded a highly convenient verse-final formula. It is therefore probable that *εἰρινός no longer existed in the earliest recoverable stages of the epic tradition, and that the stems **úehar-* and **úeharinó-* (earlier **úehār-*, **úehārinó-*) had been generalized early on. This presupposes a relatively early vocalization of final **-r*. Why exactly the stem in -αρ- was generalized is more difficult to say, but it seems likely that there was some special feature in the oblique case forms which made ἔαρ different from neuters of the type ὄνειαρ -ατος (there would have been no reason to reshape a paradigm **úéhar úéhatos*). It seems possible to me that the oldest locative form was endingless, **úes-r*, and that this form (reshaped as **úesri* and later as **úesari*) ousted the reflex of the original oblique stem **úes-n-*.

These considerations suggest that ἔαρ regularly reflects **úesr*, with the unrestored outcome of word-final **-r*. Similar considerations may apply to θέναρ 'palm of the hand' (Hom. only gen. sg. θέναρος *Il.* 5.339; nom.-acc. sg. *Pi.*+): there is no trace of heteroclitic inflection either, and the locative of this word must have been frequent, too.¹⁵¹ A more general point is that we have ample evidence for a prolonged retention of word-internal **-r* in Epic Greek, after its vocalization in the vernacular dialects (cf. chapters 6 and 7), but not for word-final **-r*. The only possible exception is ἄρ versus ῥα, but it is difficult to base any conclusions on that particle.

All in all, then, the evidence suggests that the word-final development **-r* > -αρ had already taken place when Epic **-r* arose. This means that **-r* was eliminated before word-internal **-r* in the vernaculars. Furthermore, if the above analysis of the prehistory of ὑπόδρα ἰδών is correct, originally word-final **-r* developed to -αρ before the loss of word-final occlusives.

150 The classical form ἦρινός is a contraction of *ἔαρινός.

151 The word must be compared primarily with OHG *tenar* m. 'id.' < **d^hen-r-ó-* and YAv. *danarə* n. 'handful' < **d^hen-r*. Cf. Risch (1974: 62). If Lat. *femur*, -inis 'thigh' is related, the word was originally heteroclitic, but the semantics and the different nasal speak against this. The stem in -αρ- was also generalized in post-Homeric κύαρ 'eye of a needle, orifice' (Hp.+).

9.6 Further Potential Evidence for -αρ- < **r*

In the preceding chapters, the following forms have been shown to be strong evidence for a regular development **r* > -αρ- in Proto-Ionic:

- Ion.-Att. ἀμαρτεῖν ‘to miss’ < **amrte/o-* (section 8.2.2);
- Att. -δαρθεῖν ‘to sleep’ < **-drtʰe/o-* (sections 8.2.1 and 8.4);
- Att. καρδία, Ion. καρδίη ‘heart’ < **krdiā-* (section 6.1);
- Ion.-Att. καρτερός ‘steadfast, firm’ < **krtēró-*; κάρτα ‘very’ < **kṛta* (chapter 5);
- Hom. ταρφές ‘dense, frequent’ (*plurale tantum*) < **tʰrphéu-es* (section 4.3.1);
- Ion.-Att. τέταρτος ‘fourth’ < **kʷétɹto-* (section 2.6).

In this section I will list and discuss further possible evidence supporting this development. Some of the forms have already been discussed in passing, but their pertinence to the issue of the regular vocalization has not yet been properly evaluated. The evidence is treated in alphabetical order.

9.6.1 ἄρπη

ἄρπη ‘sickle’ is clearly related to Latv. *sīrpis*, *sīrps* and Proto-Slavic **sьrpbъ* (OCS *srьpbъ*, Ru. *serp*), all with the same meaning.¹⁵² The form seems to be isolated within Greek, and the Balto-Slavic cognates also reflect a zero grade root. The default assumption is, therefore, that ἄρπη < PGr. **sɹp-ā-* displays the regular, unrestored vocalization of **r* in Ionic-Attic.¹⁵³ We are dealing with a zero grade root noun **sɹp-* which received an extension *-ā- in Greek, as in δίκη ‘manner; verdict’, βλάβη ‘harm; damage’ and similar forms.

One proviso must be made: in my view, it is plausible that the gloss ὄρπη·σίδηρος, ἐν ᾧ τὸν ἐλέφαντα τύπτουσιν ‘iron tool in which ivory is struck’ (Hsch. ο 1307) is a cognate of ἄρπη.¹⁵⁴ This raises the question whether the root vowel of ὄρπη may continue an inherited *o*-grade. Could ἄρπη and ὄρπη reflect the different stems of a root noun **sorp-* / **sɹp-* of the type discussed by Schindler

152 See GEW and DELG s.v. ἄρπη. According to Matasović (EDPC s.v. **serrā*), it is possible that Proto-Celtic **serrā* ‘sickle’ (Mlr. *serr*, OW *serr*) reflects **serp-eh₂-*, but these words have also been analyzed as borrowings from Lat. *serra* ‘saw’. This has been judged semantically implausible, but that is not necessarily the case, given that several Indo-Iranian relatives of Ved. *sr̥ṇí-* ‘sickle’ also mean ‘saw’: Khot. *harraa-*, MoP *arrāh* ‘id.’ < PIr. **hṛna-ka-*. The relation between these Indo-Iranian words and **sɹp-* ‘sickle’ remains unclear. In my view, it is likely that Lat. *sarpio* ‘to prune’ is related, too, but its root vocalism is not well understood.

153 For Beekes, the fact that **r* would be reflected as -αρ- in ἄρπη was a sufficient reason to discard the commonly accepted etymology in favor of assuming a European substrate word (EDG s.v. ἄρπη). Now that -αρ- appears to be the regular reflex of **r*, this problem vanishes.

154 The form is mentioned as a possible cognate in DELG s.v. ὄρπη, but ignored in GEW and EDG.

(1972: 34–35)?¹⁵⁵ This is not plausible, because there is no further evidence for an *o*-grade in this etymon. If ὄρη is a poetic (epic) form of non-Ionic origin, it could also reflect **srpā-*, with an Ionicized ending *-η*. In Aeolic the vowel slot would be unexpected at first sight, as the regular Aeolic reflex of **r* was *-ρο-*. However, it is conceivable that *-ορ-* was the regular Aeolic reflex in initial position and after *h-*. Another (and perhaps preferable) possibility is to assume an ‘Achaean’ origin, given that the processing of ivory (*e-re-pa*) is well-attested in the Linear B tablets. This means that ὄρη < PGr. **srp-ā-* is a strong example of the regular vocalization in Ionic-Attic.

9.6.2 ἄρχω

Previously, ἄρχω has never received an etymology that has managed to convince the entire scholarly community. Recently, Le Feuvre (2015: 506–507) has argued in favor of the proposal by Klingenschmitt (1974) to reconstruct an inchoative present stem **h₂r-ske/o-*. This proposal is referenced with relative favor by Dieu (CEG 15, 2016; see there for other proposals). Le Feuvre also mentions an idea by Bader (1976: 25) according to which the root of ἄρχω would be an extension **ser-g^h-* of the root **ser-* meaning ‘to oversee’. Obviously, as long as no well-defined function for the ‘extension’ **-g^h-* is established, this proposal has little value.

However, a reconstruction **serg^h-* or **sergh^h-* for the root of ἄρχω may well be spot on, though not in the sense of a root extension of **ser-*. The point is that a veritable PIE root **serK-* is presupposed by Hitt. *šarku-*, *šargay-* adj. ‘pre-eminent, powerful’, *šarkiške/a-^{zi}* ‘to be eminent’, and Toch. B *šärk-* ‘to surpass’, meanings which are very close to what is probably the oldest meaning of ἄρχω, ‘to be first’. This means that ἄρχω may reflect either a zero grade thematic present **srg^h-e/o-* ‘to stand out, be eminent’ (via PGr. **h₂rk^{he}/o-*) or an inchoative present **srK-ske/o-* (> PGr. **h₂rsKe/o-*). In the latter case, **K* could represent a voiceless or aspirated (palato)velar stop.

It is interesting to consider the objections formulated by Le Feuvre (2015: 506 n. 33) against the reconstruction **srg^h-* with initial **s-*. First of all, comparing ἔχω beside ἔξω, she states that one expects to find a trace of the initial aspiration in the future tense. This objection is irrelevant, as the future of a high frequency verb like ἔχω may have escaped analogical leveling (note that

155 In theory Att. ὄρηξ-ήκος m. ‘sapling, young shoot’ (ep. ὄρηξ, Aeol. and Dor. ὄρηξ-ἄκος) could belong to this etymon too, if one assumes an original meaning ‘thing pruned’. In this case, it would probably reflect an *o*-grade form extended with a suffix *-ἄκ-*. However, the etymological dictionaries are cautious about this analysis, and with good reason. Vine (1998) derives ὄρηξ from the root of ἔρω ‘to creep’.

the effects of Grassmann's Law were levelled out in most verbal paradigms, e.g. *πείθω* 'to persuade' < PGr. **p^hei^h-e/o-*, fut. *πείσω*). Therefore, leveling of the onset of original *ark^he/o-*, **harkse/o-* to *ἄρχω*, *ἄρξω* is simply expected.

A second objection advanced by Le Feuvre is that one would expect to find traces of root-initial **h-* in compounds with *-αρχος*, as one also finds such traces in compounds ending in **-o-hok^hos* derived from *ἔχω*, yielding *-οὔχος* with a lengthened contraction product. Again, this is not directly relevant, as the elision of the thematic vowel before both initial *a-* and *ha-* is again what one expects in productive formations. Moreover, in Homer compounds in *-αρχος* are not yet common (we find only *ἄναρχος* and *ἑξαρχος*, both *hapaxes*), and only in the classical period do we find determinative compounds with the noun *ἀρχός* as a head. Moreover, if compounds in **-o-hark^hos* existed at an early stage, the sandhi product may well have been **-ār^hk^hos*, which would have been shortened to *-αρχος*.

The third objection formulated by Le Feuvre is more serious: the verb *ἄρχω* and its derivatives occur in various Greek dialects, including Aeolic and Arcadian, where one would expect an outcome **ῥρχω* < PGr. **h^hrk^he/o-*.¹⁵⁶ This brings to mind cases like *καρπός* 'fruit' < **k^hrpó-* and *γράφω* 'to write' < **g^hrp^he/o-*, which also appear with *α* in dialects with a regular *o*-reflex (e.g. Lesbian). Two things may be said against this objection. First of all, it cannot be excluded that the word was borrowed from Ionic-Attic into other dialects. In order to exclude this, one would have to show that *ἄρχω* or one of its derivatives was structurally present in one of the *o*-coloring dialects at an early date. Secondly, in spite of the scenario proposed by Le Feuvre (2015), it is possible after all that the archaic Homeric noun *ῥρχαμος* 'leader' (occurring in verse-final formulae) is related to *ἄρχω*; in that case it is best analyzed as a derivative of such a verb **ῥρχω* in an 'Achaean' or early Aeolic dialect.

In sum, I see no compelling objections to the semantically attractive new proposal to connect *ἄρχω* with Hitt. *šarku-* 'pre-eminent, powerful' and Toch. B *šärk-* 'to surpass'. It is thereby established as a new instance of the regular treatment of **ʁ* in Ionic-Attic. Again, as with *ἄρπη* beside *ῥρπη* discussed in the previous section, we must take into account that the development of **h^hʁ-* in *ἄρχω* and in Hom. *ῥρχαμος* may have been comparable to that of word-initial **ʁ-* in *ἄρσην* (Thess. *ορσεν*, Arc. *ορ<ρ>εν*).

156 I assume here that PGr. **h^hʁ-* would be treated in Aeolic dialects just like **ʁ-* in the word for 'male', Thess. *ορσεν*, i.e. that it would develop to *ορ* rather than *ρo* after word-initial *h-*.

9.6.3 ἀτραπός ~ ἀταρπός

The etymology of ἀτραπός ~ ἀταρπός f. ‘trail, footpath’ is in need of clarification. An etymological connection with τρέπω ‘to direct, turn towards’ is found already in antiquity, e.g. in the second part of the gloss ἀτραπός· ὁδὸς τετριμμένη, μὴ ἔχουσα ἐκτροπάς, ἀλλ’ εὐθεία (Hsch.), which means “not having turns, but straight”. Chantraine (*DELG* s.v. ἀτραπός) rightly remarks that this connection is folk-etymological. Instead, both Frisk and Chantraine (*GEW* and *DELG* s.v. ἀτραπός) prefer an analysis of the word as consisting of copulative or intensive ἀ- and the root of τραπέω ‘to tread (grapes)’ (*Od.*+), τροπέοντο· ἐπάτου· ‘they were treading’ (Hsch.). The original meaning is supposed to be ‘well-trodden’: “C’est la piste foulée”, says Chantraine (*DELG*, q.v.).

The connection with τραπέω also goes back to antiquity, as shown by the first part of the gloss just quoted (ὁδὸς τετριμμένη “trodden road”). It is made also at *Ar. Ra.* 123, where Dionysus asks Heracles about the roads leading into Hades, and the latter mentions the ἀτραπὸς ξύντομος τετριμμένη, ἥ διὰ θυείας “the pounded short-cut, the one through the mortar” (by which he means death by hemlock, which was prepared with mortar and pestle). Clearly, the use of τετριμμένη contains a pun on the meaning of τρίβω ‘to rub, wear out’, which may mean ‘to pound’ but could also refer to the treading of a road (cf. the derivative ὁ/ῆ τρίβος ‘beaten track’).

For the analysis of ἀ- as copulative or intensive, it is somewhat problematic that the passive semantics (‘trodden’) would normally require a formation in *-τό-, given that τραπέω is a transitive verb. Moreover, the assumed interpretation ‘well-trodden path’ is at odds with the fact that an ἀτραπός in several cases specifically denotes a trail (as I will show below). Incidentally, note that Greek had other nouns meaning (‘trodden) path, (beaten) track’, such as πάτος or the just-mentioned τρίβος. Finally, assuming copulative alpha does not account for the absence of initial aspiration in Attic prose and comedy. As an alternative, Beekes (*EDG* s.v. ἀτραπός) suggests that the variation between ἀτραπός and ἀταρπός is a substrate phenomenon, comparing Ru. *trópá* ‘path’, but this is nothing more than a guess and does not illuminate anything.

I propose that ἀτραπός was originally an adjective of the type ἄγραφος ‘unwritten’, and reconstruct a pre-form **n-typ-o-* ‘untrodden’, where **typ-* is indeed the root of τραπέω.¹⁵⁷ Starting from phrases like **ἄτραπος ὁδός* or **ἄτραπος κέλευθος* ‘untrodden path’, the oxytone accentuation of ἀτραπός could be

157 Cf. *LIV*² s.v. 1. **trep-*, where τραπέω is included as an iterative **typ-eje-* along with relatives in Balto-Slavic: Lith. *treĩpti* (1sg. *treĩpiù*) ‘to tread, stamp down’, OPr. *er-treppa* “sie übertreten”, ORu. *trepati* ‘to beat’. The connection is not completely certain: as *LIV*² remarks, “die Semantik der Wurzel bedarf ebenfalls noch weiterer Klärung”.

ascribed to its substantivization. The meaning ‘untrodden’ neatly fits the attestations: in Herodotus and Thucydides, ἀτραπός is used to refer to the shortcut at Thermopylae by means of which the Persians take the corridor, and indeed *LSJ* glosses the word as “*short cut*, or generally, *path*”. In the passage from Aristophanes quoted earlier, the ἀτραπός is called ξύντομος, which again literally means ‘shortcut’, and the same author uses the phrase μύρμηκος ἀτραπούς ‘ant trails’ (*Thesm.* 100), which is echoed in Aristotle, who speaks of ants as αἰεμίαν ἀτραπὸν πάντες βαδίζουσι “they all walk the same path all the time” (*Arist. HA* 622b25). Finally, such an interpretation is also presupposed by the Homeric phrases κατὰ παιπαλόεσσαν ἀταρπὸν ‘along a rugged path’ and τρηχεῖαν ἀταρπὸν ‘rough path’. All this suggests that an ἀτραπός was a trail through rocky or mountainous terrain, rather than a trodden path.

Previous treatments of this word have left the variation -*ṛ*a- ~ -*ṛ*p- unexplained. The prose form was clearly ἀτραπός, while the variant ἀταρπός (which is less common) is limited to poetic authors.¹⁵⁸ This distribution is different from the one observed in section 6.1, where it was found that -*ṛ*a- is usually limited to epic and poetic words, while variant forms with -*ṛ*p- are common both in prose and poetry. As we will see now, the specific distributions between ἀτραπός and ἀταρπός can be explained.

With one exception, ἀταρπός is found in verse-final position of a hexameter. The same variation appears in ἀταρπιτός ‘id.’ (*Il.* 18.565, *Od.* 17.234, *h. Ap.* 227, *Parm.* fr. 20) beside ἀτραπιτός (only *Od.* 13.395). This word is probably a contamination of ἀταρπός ~ ἀτραπός with the more usual word ἀμαξιτός adj. ‘traversable by wagons’, subst. ‘carriage-road’ (*Il.*+). Again, the most widely attested epic form has -*ṛ*p-. Chantraine (*DELG*, q.v.) remarks that ἀταρπός is preferred for metrical reasons, but the dactylic form ἀτραπός was not inconvenient *per se*.

Now, if ἀτραπός (unattested in Homer) contained the older vocalization, it would remain unclear how ἀταρπός came into being, and why ἀτραπός should have been avoided by hexameter poets. We may therefore hypothesize that ἀταρπός is in fact the older form (preserved in formulaic material in verse-final position), directly reflecting Proto-Ionic **ṛ*-*tṛp*-*o*-, and that the prose form ἀτραπός was secondarily influenced by the root of τραπεῖω, or perhaps even folk-etymologically by τρέπω ‘to turn’. In τραπεῖω itself, the vocalization -*ṛ*a- can be due to the full grade **trep*- of the verbal root, given the possibility that τροπέοντο· ἐπάτουν (Hsch.) has an *o*-grade.¹⁵⁹

158 Hom. (*Il.* 17.743, *Od.* 14.1), Alcman (fr. 102), Parm. (fr. 2), and Emp. (fr. 112).

159 The rarity of τραπεῖω can be explained with the assumption that it was ousted by πατέω ‘to tread’, a denominative of πάτος ‘path’.

9.6.4 ἐπικάρσιος

The adjective ἐπικάρσιος ‘transverse, crosswise, at a right angle’ (*Od.* 9.70, of ships; further Hdt.+) cannot be derived from a phrase ἐπὶ καρσί, as assumed by Bechtel 1914 s.v.). It contains the root **kers-* ‘to cut’ reflected in κείρω ‘to shave; pillage; ἔκερσα ‘to cut off; obstruct’; cf. in particular ἐπικείρω ‘to cut short, thwart’. The semantic motivation for deriving a word meaning ‘crosswise’ from ‘cut’ is that cutting is usually done at a transverse angle with regard to the object to be cut. Semantic parallels (containing the homonymous root **kert-* ‘cut’, which may also be reflected in ἔκερσα) are Lith. *skeřsas* ‘crosswise’, Ru. *čérez* ‘across’.

In an as yet unpublished paper,¹⁶⁰ I argue that ἐπικάρσιος was derived by adding the de-adverbial suffix -ιος to an adverb **epikrs*, the pre-form of Homeric ἐπικάρ which (as I argue) means something like ‘cross-hill’.¹⁶¹ I criticize the widely accepted derivation of ἐπικάρ from the PIE word for ‘head’ (Nussbaum 1986) as well as its alleged meaning ‘headlong’. It is likely that ἐπικάρ regularly reflects **epikrs*, but we cannot exclude that its vowel slot was influenced by verbal forms with κερσ-. It is possible, but not certain that ἐπικάρσιος and ἐπικάρ show the regular Ionic-Attic reflex of **r*.

9.6.5 καρπός

In section 2.2, it was argued that καρπός ‘fruit; harvest’ is unrelated to Myc. *ka-po*, which may reflect /kāpos/ ‘plantation’ instead. Assuming that καρπός contains a secondary zero grade **CaRT* of the type advocated by Kuryłowicz (section 1.4.4) is completely unmotivated. Since the verbal root **kerp-* ‘to pluck’ has left no other traces in Greek, καρπός < **kṛp-ó-* is strong evidence for a regular change **r* > -αρ-. The word is also attested in many West Greek dialects, including Cretan, Elean and Cyrenaean. It is somewhat problematic that no alternative vocalization is attested anywhere in Greek, but the reconstruction **kṛp-ó-* cannot be doubted.

9.6.6 ξάρφω

The present ξάρφω ‘to dry up, wither, wrinkle’, especially of the skin, is first found in Hesiod; its sigmatic stems are attested in the *Odyssey*. The verb is current only in poetry. Derivatives are ξάρφος n. ‘arid stalk, twig, chip of wood, halm, hay’ (Ion.-Att.), καρφηρός ‘made of dry straws’ (E. *Ion* 172), ξάρφη

160 Cf. also Chantraine (*DELG* s.v. ἐπικάρσιος) who derives the word from **kert-* ‘to cut’.

161 This means that ἐπικάρσιος does not require the existence of an older form **kṛt-(o)-* or **-kṛt-(o)-*, as maintained by Chantraine (*DELG* s.v.) following Strömberg (1946: 92).

'hay' (X.), and notably καρφαλέος 'arid' (*Il.* 13.409, *Od.* 5.369) which clearly influenced the forms ἀλᾰλέος 'id.' and ἀυσταλέος 'id.'.¹⁶² Chantraine (1933: 253–254) suggests that καρφαλέος was derived from κάρφος, but given the concrete lexicalized meanings of κάρφος, this is not evident; it is equally conceivable that καρφαλέος is deverbal. In addition, one might speculate that an older *u*-stem adjective existed, in view of the gloss καρφύνεσθαι· ξηραίνεσθαι, φθείρεσθαι 'to dry up, wither' (Hsch.).

Letoublon and Lamberterie (1980) compare κάρφω with Lith. *skrēbinti* (tr.) 'to dry, parch' (and many other meanings like 'to crackle'), *skrēbti* (intr.) 'to dry up, become parched or roasted, develop a crust'.¹⁶³ This comparison is excellent both semantically and formally, except that their reconstruction **krebh-* would entail a root containing both a voiceless and an aspirated stop, violating a root structure constraint of the proto-language. Given that the root has *s*-mobile, this problem can be solved by positing *(s)*g^hrebh-*, with Grassmann's Law in Greek. Further cognates are found in Germanic: ON *skarpr* 'shrivelled' and *skorpinn* 'wrinkled', from a root which acquired its *-p-* by degemination from **-pp-*, which in turn developed from **-b^hn-* by Kluge's Law. In his study of the Germanic *n*-stems, Kroonen (2011: 108) compares the nasal present of Lith. 1sg. *skrembù* directly with OE *scrimman* 'to shrivel' < PGmc. **skremb-n-*, MHG *schrumpfen*, *schrumpfen* 'to shrink' < PGmc. **skrump^p-* < **skrumb-n-*. Since the reconstructed root *(s)*g^hrebh-* would have a full grade 11, this etymology furnishes additional evidence for a regular vocalization **r* > -α*r*- in Ionic-Attic. Note that this etymology entails the reconstruction of a zero grade thematic present **g^hrbh-e/o-*, a type for which there is some (but limited) evidence in Greek.¹⁶⁴

162 The neuter κάρφος is also attested in Cyrenaean, a West Greek dialect. See section 3.2.1 for further possible evidence for α*r* < **r* in this dialect.

163 "lit. *skrēbti* (*skrembù*, *skrebaũ*) 'eine dünne Kruste ansetzen, sich mit einer solchen überziehen; steif werden, gefrieren; (von Braten, Gebackenem) geröstet, braun werden, sich bräunen, anbrennen, brenzlich werden' *skrēbinti* 'trocknen, dörren; bräunen, rösten; zum Knistern, Rascheln, Klappern bringen; (intr.) rasseln, klappern, rascheln, knistern' *skrebiniš* 'etwas Raschelndes' (...)", Fraenkel (*LEW* s.v. *skrebėti*, 'rauschen, rasseln, knistern'). A further possible relative is Lith. *skirbti*, 1sg. *skirbstù* 'to become sour, shrink, become lean'.

164 According to Létoublon and Lamberterie (1980: 323), κάρφω, γράφω, and Dor. φθαίρω (beside analogical Att. φθείρω) are examples of old zero grade thematic presents in Greek. They also compare the so-called 'Doric presents' of the type τράφω 'to feed'. In their view, Ionic-Attic innovated by introducing the *e*-vocalism of the sigmatic aorist in the present stem (yielding τρέφω), as also happened in cases like δείκνυμι (beside δείξει, cf. Cret. δεικνυμι), ἔρδω (beside ἔρξει, cf. Myc. *wo-ze*). However, note that τρέχω 'to run' (Dor. τράχω) cannot have acquired its vocalism from the aorist. See also section 3.1, and Willi (2018: 351–355) for the contrary view that the type *tudāti* is a secondary development of Indo-Iranian.

9.6.7 *χάρμη*

A final attractive example is the Homeric word *χάρμη*. It has been thought since antiquity that this word means ‘battle lust’ and therefore contains the root of *χαίρω* ‘to rejoice’. If that etymology were correct, *χάρμη* could be used in this discussion only with certain reservations, because the root *χαρ-* of *χαίρω* may have originated in the *yod*-present and then spread to nominal derivations (cf. *χάρμα* ‘reason for joy’).

In reality, the etymology of *χάρμη* is probably totally different. Janda (2014: 131–142) convincingly argues that *χάρμη* referred to a battle rage or frenzy, and that it belongs to an inherited verbal root **g^hrem-* meaning ‘to rage, be angry’. This root is reflected in the Germanic strong verb **grimman-* ‘to rage’, attested in the oldest Germanic languages, beside which there exists also a causative **gramjan-* ‘to provoke’ (Goth. *gramjan*, OE *gremian*, ON *gremja*, etc.) < **g^hrom-éie-*, and in the adjective **grama-* ‘raging, angry’ (ON *gramr*, OE, OS and OHG *gram*) < **g^hromó-*.¹⁶⁵ The PIE status of the root is supported by the Iranian root *gram-* ‘to anger’, which is attested in Avestan in the participles *gramant-* and *granta-* ‘angry’.¹⁶⁶ Homeric *χάρμη* must be reconstructed as PIE **g^hrm-eh₂-*, a zero-grade deverbial abstract. Given that the root is PIE **g^hrem-*, *χάρμη* is a very strong example in favor of a development **r* > *-αρ-*.

9.7 Evidence for *-αρ-* and *-ρα-* Left Out of Consideration

The forms in this section cannot be considered compelling evidence for the development of **r*. In most cases, previous authors have proposed a pre-form with **r*. The material is divided in two parts. I will first discuss etymologies that are possible, but not more than that (section 9.7.1), and then turn to etymologies that are untenable (section 9.7.2). The material is treated in alphabetical order. No separate attention is given to forms with paradigmatic ablaut (such as *σπαρτός* ‘sown’ beside *σπείρω* ‘to sow’) or to etymologies with an obvious weakness.¹⁶⁷

¹⁶⁵ The root-final geminate in **grimman-* probably stems from a nasal present (Kroonen, *EDPG* q.v.).

¹⁶⁶ The root **g^hrem-* is widely attested in Indo-European languages as a sound verb meaning ‘to roar, thunder’. This root may or may not be etymologically identical with **g^hrem-* ‘to rage’; this issue is not relevant in the present context.

¹⁶⁷ I mean words such as (1) *πάρνοψ* ‘grasshopper’, Lesb. Boeot. *πόρνοψ*. This word may well have been borrowed from a Pre-Greek substrate in view of its suffix, its meaning, and because of the variants with initial *χ-* (cf. Beekes, *EDG* s.v.). That is, in this word the dialect-

9.7.1 *Ambiguous or Uncompelling Evidence*

Vine (1998: 81–82) has proposed to derive the nominal form ἄρπαξ ‘rapacity; rapacious; robber’ (Hes.+) and the denominative verb ἄρπάζω ‘to rob, seize, plunder’ (Il.+, plus further derivatives) from a compound **sr-ph₂g-*. He connects the first part **sr-* with αἰρέω ‘to take, seize’, which in his view can be reconstructed as a **sr-je/o-* that was influenced by ἄγρέω ‘to seize’ (1998: 48–49).¹⁶⁸ However, Vine leaves open the analysis of the second element **ph₂g-* of this compound. As such, the etymology remains uncertain.

In view of the retained reflex of compensatory lengthening and the initial aspiration in εἴμαρται ‘has obtained by lot or fate’ (Hom.+), it would be attractive to view this form as the regular outcome of PGr. **hehmyto* in Ionic-Attic. However, we cannot exclude that the root vowel slot is analogical after that of μείρομαι and ἔμμορε ‘id.’ (both Hom.). The same analogy can be invoked for the Aeolic counterpart ἐμμόρμενον (Alc.), replacing the expected Aeolic reflex with -μ(β)ρο-, possibly under influence of the active perfect ἔμμορε. In lexicographical sources, two variants with a sequence -μβρα- are attested: ἐμβραμμένα· εἴμαρμένα (EM 334.10) and ἐμβραταί· εἴμαρται (Hsch.).¹⁶⁹ Both are ascribed to Sophron (fr. 114 K-A), a writer of prose dialogues in the dialect of Syracuse, a colony of Corinth. The independent evidence of two glosses cannot be lightly dismissed, but since they are not of Ionic-Attic origin, they are of no consequence for the present discussion.¹⁷⁰

The noun καρπός m. ‘wrist’ (Hom.+) has been connected etymologically with the Germanic strong verb **hwerban-* ‘to turn’, e.g. Goth. *hvaírban* ‘to move around, dwell’.¹⁷¹ Phonologically, this identification is unproblematic: **k^w* ... *p* may have undergone dissimilation to *χ* ... *π* in Greek, whether **k^w* derives from PIE **k^w*- or from **k_s*-.¹⁷² However, the semantic match is not compelling,

tal variants with -αρ- / -ορ- are not necessarily due to different vocalizations of a syllabic liquid. Cf. further: (2) ῥάβδος ‘wand, staff’, which can hardly have an IE etymology in view of its suffixal -δ-; (3) ῥάδαμνος ‘branch’ (LXX), which has a variant ῥόδαμνος (Thphr., Call., Nic.).

168 Itself, ἄγρέω can be analyzed as a denominative verb derived from compounds in **-agro-* ‘seizing’. These in turn can be derived from the root of ἀγείρω ‘to gather’ (cf. Tucker 1990: 168).

169 The gloss βεβραμένων, cited in the etymological dictionaries, is not retained in Latte’s edition of Hsch.

170 It is not easy to evaluate the evidence from the Doric dialects of Magna Graecia: there is some evidence for both -ρα- and -αρ- (see section 3.2).

171 Cf. also ON *hverfa* ‘to turn around; disappear’, OE *hweorfan* ‘to turn, travel, move around, change’, etc. See GEW s.v. 2. καρπός with further literature and EDPG s.v. **hwerban-*.

172 See section 10.4.3 and Schwyzler (1939: 302) for the evidence.

but merely possible, and we are dealing with an equation between only two branches. For this reason, καρπός ‘wrist’ is at best a possible example of the vocalization to -αρ-. The same holds for the epic adjective καρπάλιμος ‘agile, swift’.¹⁷³ A connection with the root **k^werp-* is semantically plausible (cf. e.g. ON *hverfr* ‘quick’),¹⁷⁴ but the lack of a direct counterpart of the suffix -άλιμος suffices to eliminate καρπάλιμος from the compelling evidence.¹⁷⁵

The compound ὀφίοσπρατον ‘sown or engendered by serpents’ (thus *LSJ*) is attested in Herodian and *EM* 287.14 as a variant of ὀφίο-σπαρτον. The form has been used in previous treatments (e.g. Kuryłowicz 1968: 247) as evidence for a regular Ionic-Attic outcome -ρα- < **ɣ*. The grammarians adduce the form in order to illustrate the swapping of liquid and vowel in the Homeric *hapax* δρατά ‘flayed’ beside expected δαρτά. As a compound, ὀφίοσπρατον is clearly poetic; given its metrical structure, it may have been taken from some now-lost epic text.¹⁷⁶

The PIE root **perk-* furnishes potential evidence for **ɣ* > -ρα- in the gloss πρακνόν· μέλανα ‘black’ (Hsch.). The full grade of the root is found in περκνός ‘speckled’ (Arist.), name of a bird of prey (*Il.* 24.316), also ἐπίπερκνος (X. *Cyn.* 5.22). The underlying formation can be compared with Ved. *pṛśni-* ‘speckled’ and OHG *forh(a)na* ‘trout’, both reflecting PIE **pṛk-n-*. Within Greek, a full grade is found in πέρκος (m.) ‘a kind of eagle’, περκή ‘a kind of fish, *perca fluviatilis*’, περκάζω ‘to color dark, ripen’, and it was probably introduced in περκνός. It would be rash, however, to conclude that πρακνόν proves a regular outcome -ρα- < **ɣ* in Ionic-Attic, because the origin of the gloss is unknown. It cannot be excluded, for instance, that πρακνόν was taken from a variety of West Greek where -ρα- was the regular reflex.¹⁷⁷

173 In Homer mostly adverbial καρπαλίμως, which often accompanies verbs denoting an action involving the hands or feet. The adjective only occurs in the dat. pl. with ποσί or πόδεσσι.

174 Bechtel (1914 s.v.) suggested that καρπάλιμος was derived from the hippological term κάλπη ‘trot’ by dissimilation from **καλπάλιμος*. This seems less likely to me.

175 Like e.g. -αλέος, -άλιμος is a mildly productive Caland suffix in Homeric Greek (see Risch 1974: 105).

176 It is possible in theory to understand -ρα- in ὀφίοσπρατον as an instance of Epic **ɣ*, along the lines set out in chapter 6. However, if the regular reflex of Epic **ɣ* after a labial consonant was -ρο- (see chapter 7), ὀφίοσπρατον would have to be a compromise form between σπαρτόν ‘sown’ and the expected epic outcome **ὀφίοσπροτον*. This does not seem impossible. In any case, ὀφίοσπρατον cannot be used to argue for -ρα- as the regular vocalization of **ɣ* in Ionic-Attic.

177 Cf. also section 7.2.6 on the glosses πράκεις· (...) ἔλαφοι ‘deer’ and πόρκας· ἐλάφους (both Hsch.). It is not without interest that a full grade *ɪ* is attested in another gloss, πρεκνόν· ποικιλόχροον. ἐλαφρόν ‘with varicolored skin; nimble’ (Hsch., ἐλαφρόν perhaps to be cor-

The *plurale tantum* *πραπίδες* f. ‘midriff’, whence ‘heart, soul’ is attested in Homer in the formulaic phrases |_T ἰδυίησι πραπίδεσσι and ἦπαρ ὑπὸ πραπίδων |_P. The word has no ascertained etymology,¹⁷⁸ but a proposal by Balles (2002) deserves closer consideration. Balles starts from a comparison with *φρένες*, for which she accepts an original meaning ‘midriff’. Like *φρένες*, *πραπίδες* also denotes the seat of human thoughts and emotions and is clearly used as a poetic equivalent of the former. Balles proposes that *πραπίδες* continues an inherited formation originally meaning ‘rib-cage, chest’, which became closely associated with *φρένες* (and was partly conflated with it) in the epic tradition.

How does this etymology work formally? Balles derives *πραπίδες* from an early collective **πραπό-* ‘rib-cage’ with the suffix *-ίδ-*. The function of this suffix was, in her formulation, to derive “lexikalisierte Konkreta” (e.g. *νυκτερίδ-* ‘bat’, “nightly creature” ← *νύκτερος* ‘of the night’, *νεβρίδ-* ‘fawnskin’ ← *νεβρός* ‘fawn’, or *παρηίδ-* ‘cheekpiece’ ← *παρεῖαι* ‘cheeks’). Therefore, a singular **πραπίς* would have referred to an individual, concrete item pertaining to (made from, located in) the rib-cage. Balles’ further argument is relatively complicated and cannot be rendered here in every detail. In my view, the simplest scenario would be that the singular **πραπίς* denoted an organ located in the chest; *πραπίδες* would then have denoted the collection of such organs, and thence also the ‘chest’ or ‘rib-cage’.

This **πραπό-* can be compared to Ved. *pársu-* f. ‘rib; sickle’ (RV+), *pārsvá-* n. ‘flank or side of an animal’ (RV+, cf. Oss. *fars* ‘side, flank’), Av. *pərəsu.masah-* ‘having the size of a rib’, *parəsui* ‘rib; area of the ribs’, which presuppose a PIE noun **perk-u-*. A derivative **prkū-* ‘consisting of ribs’ (cf. the *vrddhi*-derivation Ved. *pārsvá-*) could then yield the required pre-form **πραπό-*, provided that **kū-* resulted in a non-geminate *-π-* and that **r* > *-ρα-*. As Balles points out, there is only one relatively secure instance of the geminate treatment *-ππ-* (*ἵππος* ‘horse’ < **h₁ekūo-*), but in view of the well-known problems with the reconstruction of that word (the *i*-vocalism, dialectal forms like *ἵκκος*, the ini-

rected to *ἔλαφον* ‘deer’). If this form is to be taken seriously, no conclusions concerning the regular outcome of **r* can be based upon the etymon of *περκνός*.

178 Cf. Frisk’s judgment (*GEW* q.v.): “Bildung auf -ίς (...) von einem unbekannten Grundwort”; *DELG* (q.v.) simply leaves it at “Pas d’étymologie”. A connection with *πρέπω* ‘to be conspicuous, stick out’ is semantically weak. Against the connection with words for ‘shape, body’ (OE *hrif* ‘womb’, Lat. *corpus* ‘body, mass’, Ved. *kṛp-* ‘shape, appearance’), if these derive from a pre-form **k^wrep-* at all, it may be objected that a labiovelar dissimilation **k^w...p-* > **k...p-* would be expected in first millennium Greek (see Schwyzler 1939: 302).

tial aspiration), she argues that the outcome of intervocalic **-k̥u-* in Greek may have been *-π-* after all.¹⁷⁹

Although this etymology for *πραπίδες* is not implausible from a semantic point of view, Balles' attempts to solve the problem of *-π- < *-k̥u-* are in my view not entirely satisfactory. As an alternative solution, one could think that **-k̥u-* was retained longer intervocalically (in *ἵππος*) than after **ɾ* (in *πραπίδες*). There are more environments where **ɾ* did not behave like a normal vowel (cf. the reduction of **-t̥u-* to *-t-* before **ɾ*, section 2.6), and it would perhaps be conceivable that a pre-form **pr̥k̥u-ó-* would result in pre-alphabetic **pr̥k̥w-ó-*, whence **pr̥k̥w-íd-*. Since *πραπίδες* only occurs in poetry and in particular in Epic Greek, a pre-form with Epic **ɾ* could be considered. In this case, however, it would be problematic that we do not find an *o*-colored outcome of Epic **ɾ* after a labial consonant (see chapter 7).¹⁸⁰ In sum, in view of the large number of problems involved, I will not base any conclusions on *πραπίδες*.

The noun *σάρξ* 'meat' (in Homer, pl. *σάρκες*) reflects a root noun PIE **t̥ur̥k̥-*. The problems with the reconstruction of this word have been discussed in sections 1.3.2 and 2.6. One possible scenario mentioned there is that the form *σῶρξ*, cited as Doric and Aeolic in Ancient grammarians and lexicographers, reflects an *o*-grade **tuork̥-*. This means that **t̥ur̥k̥- > *tuark̥- > σαρξ-* might in theory be an analogical vocalization, for instance replacing a re-vocalized form **turk̥-*. Therefore, no conclusions can be based on this word.

χειρόμακτρον 'towel' arose by dissimilation from **χειρόμαρχτρον*, a compound of *χείρ* and an instrument noun with zero grade root derived from *δμόργνυμι* 'to wipe', i.e. PGr. **ómryg-tro-n*. It is generally admitted that this **ómryg-tro-n* was vocalized as Plon. **ómarktron*, but the vowel slot may have been influenced by full grade forms of the verb *δμόργνυμι*.

9.7.2 *Irrelevant Words; Untenable and Doubtful Etymologies*

The etymology of *ἀστραπή* 'lightning', *ἀστράπτω* 'to flash' and related forms has been discussed by Beekes (1987). He concluded that the word cannot be Indo-European in view of the odd interchange *ἀ- ~ Ø*. This interchange occurs in *ἀστεροπή* beside *στεροπή* (both Hom.) and in *ἀστράπτω* (Ion.-Att.) beside

179 An alternative suggestion made by Balles is that a pre-form **πραππό-* may have been reduced to **πραπό-* as a result of dissimilation. This seems unlikely to me.

180 Note that *πραπίδες* generates position length when preceded by a preposition ending in a short vowel (*ὑπὸ πραπίδων*, *ἀπὸ πραπίδων*). This seems to speak against the assumption of Epic **ɾ*, but we could compare the heterosyllabic scansion of *δρ* in *ὑπόδρα* 'looking sternly' (cf. section 9.5.2).

στράπτω (only in S. and A.R.). Beekes convincingly argues against the earlier reconstruction as PIE $*h_2ster-h_3ok^w-eh_2$ ‘star-eye’, which is not evident semantically and leads to phonological problems. In addition to this, Schrijver (1997: 310) has attractively suggested that ἀστραπή is related to OIr. *sraib* ‘sulphur’ and *sraif-tine* ‘lightning’ (< “sulphur-fire”) as a European substrate word. The Irish word is derived by Schrijver from $*strab-i-$.¹⁸¹

It has been assumed that ἄτρακτος ‘spindle; arrow’ (general Ion.-Att.) contains the reflex of a zero grade root $*t\check{r}k-$, which allegedly also underlies ἀτρεκής ‘precise’ (Hom.+), see GEW s.v. ἄτρακτος. Apart from the fact that such a root is not attested anywhere (as Frisk admits), ἄτρακτος cannot be used as evidence for various reasons. First, there is no good outer-Greek *comparandum*:¹⁸² the comparison with Skt. *tarku-* ‘spindle’ mentioned by the etymological dictionaries can be discarded, because this form derives from the verbal root *tark-* ‘to turn’ < PIE $*terk^w-$, which contained a labiovelar. Secondly, there is a variant ἄδρακτος (Hsch. α 8134 s.v. ἄτρακτος), which could point to Pre-Greek origin (thus Beekes, EDG s.v. ἄτρακτος). Finally, the word-formation is unclear: it makes no sense to think of copulative or intensive ἀ-. Given that the word denotes a concrete object, for which the various IE languages have different names, it is probable that we are dealing with a borrowing.

The glossed word βράκxα ‘wild herbs or vegetables’ (Pherecr., Hsch.) is usually compared with Germanic and Slavic words for ‘edible root, carrot’ (OHG *moraha*, G. *Möhre* < PGmc. $*murhōn-$; PSl. $*m\check{r}ky$). The Greek meaning, however, is different from that of the Northern European words, and the formation of βράκxα is also different. Moreover, the Greek word is weakly attested. If the comparison is tenable at all, we could be dealing with a European substrate word. Beekes (EDG s.v. βράκxα) further mentions the assumption of Furnée (1972: 330) that the word is Pre-Greek, comparing βάκxανον ‘cabbage’; DELG (s.v.) merely remarks that there is no established etymology. For doubts concerning the possibility to reconstruct this word, see also Kroonen (EDPG s.v. $*murhōn-$).

Although the formation of εὐτράπελος ‘dexterous; witty’ (Pi., Th.+) is not entirely perspicuous (cf. a similar suffix in εὐπέμελος and εὐτρόχαλος), the

181 In theory, even if ἀστραπή and cognates were borrowed, one could think that some of them were borrowed in a form with $*\check{r}$: compare the glosses στροπά: ἀστραπή. Πάφιοι (Hsch., Ael. Herod.), στροπάν: τὴν ἀστραπήν (Hsch., Ael. Herod., without dialect indication), and epigraphic Arcadian gen. sg. Διος Στορπαο (IG V,2 64, 5th c.). However, this remains mere speculation, especially since the by-form (ἀ)στεροπή may have exerted influence on the vocalism of these forms.

182 Chantraine (1933: 301, cf. also DELG s.v.) rightly judges the etymology to be “douteux”.

semantic interpretation as “sich leicht wendend” (*GEW* s.v., based on the German translation ‘gewandt’) and the derivation from the thematic aorist stem *τραπε/ο-* ‘to turn, direct’ (Chantraine 1933: 243) are acceptable. This means that the form merely contains a restored outcome of **r̥*.

The adjective *καθαρός* often means ‘pure, clean, proper’. It has a dialectal variant *κοθαρός*, attested in derivatives in various West Greek dialects¹⁸³ as well as in Lesbian *κόθαρος* (Alc. fr. 38). Peters (1993a: 95–101) has tried to revive Brugmann’s old comparison with Ved. *śithirá-* ‘loose’, reconstructing a PIE pre-form **k̑rth₂r-ó-* (*sic*, with prevocalic **r̥*).¹⁸⁴ He further posits an inherited present **k̑roth₂r-íé/ó-* on the basis of a comparison between the Vedic *hapax śratharyáti* (RV 10.77.4, of the earth) and *καθαίρω* ‘to purify, clean’. He accounts for the Lesbian and West Greek variant with *κοθ-* by positing yet another pre-form PGr. **k̑roth₂-ro-* > Pan-Greek *καθαρός*, allegedly with ‘vowel assimilation’ to *καθαρός* in Ionic-Attic (o.c. 98). The *o*-vocalism of PGr. **k̑roth₂-ro-* is supposed to have been introduced from the *yod*-present.

There are severe problems with almost every step in this reconstruction. A pre-form **k̑rth₂r-ó-* (which according to Peters was derived from an abstract noun **k̑rth₂r* ‘Lösung’) is questionable because PIE probably did not have a separate phoneme **r̥*.¹⁸⁵ The *hapax śratharyáti*, on the basis of which Peters reconstructs an inherited *yod*-present, occurs immediately after the semantically close form *vithuryáti* ‘totters, shakes’ in the previous *pāda* of RV 10.77.4. Therefore, *śratharyáti* is best analyzed as a nonce formation. As for the claim that *καθαρός* resulted in Ion.-Att. *καθαρός*, to assume ‘vowel assimilation’ is not a real solution for the different vocalism, but simply an *ad hoc* assumption.¹⁸⁶

There are also grave semantic objections. Peters assumes that ‘loose’ and ‘to loosen’ are the original meanings of *καθαρός* and *καθαίρω*, leading to ‘dissolve’ and then to ‘clean, rinse’. For this shift of meaning, he compares Hom. *λύμα* ‘dirt’, which is thought to be derived from *λύω* ‘to loosen’. However, Homer uses

183 The variant *κοθαρός* is attested epigraphically in Thurii (*IG* XIV 641, 4th c. BCE) and Heraclea (*IG* XIV 645 I, 103); derivatives are attested in Olympia (*κοθαρσι τελειαι* ‘with complete purification’, *IO* 7.2) and again Heraclea (the verbal form *ἀνκοθαρίοντι*, *IG* XIV 645 I, 132).

184 Mayrhofer (*KEWA* s.v.) rejects the comparison with *καθαρός*, but in *EWAia* retains the comparison with Gmc. **hreddan-* ‘save’ (OE *hreddan*, G. *retten*) as a possibility.

185 It would be much more natural to start from a pre-form **k̑rth₂-ró-*, which would be a *ró*-adjective with zero grade root derived from an intransitive verb. Peters, however, wants the laryngeal to be prevocalic because this allows him to explain the aspirated stop *-θ-* in Greek. In his view, **-th₂V-* would yield *-θV-*, while **-th₂C-* would result in *-τᾱC-*.

186 See Van Beek (2011a) for criticism of a number of frequently cited examples of “vowel assimilation”.

καθαρός three times as a substantivization meaning ‘open or cleared space’.¹⁸⁷
For example:

νόσφι νεῶν ἀγαγὼν ποταμῷ ἔπι δινήεντι,
ἐν καθαρῷ ὅθι δὴ νεκύων διεφαίνετο χώρος

Il. 8.490–491

[Then did glorious Hector make an assembly of the Trojans,] leading them away from the ships beside the eddying river, in an open space where the ground showed clear of dead.

tr. WYATT 1999

As remarked by Chantraine (*DELG* s.v.), ‘clearing, open space’ is the only meaning attested in the *Iliad*. This crucial fact is completely ignored in most previous treatments of the word (e.g. *GEW*, Peters 1993a). This meaning is not uncommon after Homer: compare the following passage from Pindar, treating the foundation of the Olympian games by Heracles (*Ol.* 10.43–49):

ὁ δ' ἄρ' ἐν Πίσῃ ἔλσαις ὄλον τε στρατόν
λάαν τε πᾶσαν Διὸς ἄλκιμος
υἱὸς σταθμάτο ζάθεον ἄλσος πατρὶ μεγίστῳ·
περὶ δὲ πάξαις Ἄλτιν μὲν ὄγ' ἐν καθαρῷ
διέκρινε, τὸ δὲ κύκλῳ πέδον
ἔθηκε δόρπου λύσιν,
τιμάσαις πόρον Ἀλφειοῦ
μετὰ δώδεκ' ἀνάκτων θεῶν

Thereupon, Zeus' valiant son gathered the entire army and all the booty at Pisa, and measured out a sacred precinct for his father most mighty. He fenced in the Altis and set it apart in the open, and he made the surrounding plain a resting-place for banqueting, and honored the stream of Alpheus along with the twelve ruling gods.

tr. RACE 1997

Various other peculiar uses of καθαρός are clarified once we posit ‘cleared, open’ as the original meaning. In Pindar, κέλευθος καθαρά refers to a ‘clear(ed) path’ (without obstacles, not overgrown). Sophocles uses the phrase ἐν καθαρῷ

187 “clear of objects, free”, “open space” (*LSJ*, mg. 3).

βῆναι ‘to leave the way clear’ (*OC* 1575). The meaning is not limited to poetry: Herodotus has ἐς χώρον καθαρὸν ἀγαγὼν τὸ κτήνος “having led the cattle to a clearing” (1.132) and reports that one of the arms of the river Araxis ῥέει διὰ καθαρῶ, “flows through open land”, to the Caspian sea (1.202). Last but not least, the same meaning is found in the Heracleian Tables, where ἀνκοθαριοντι ... τὰ παρὰ αὐτῶν χωρία ρεοντα means ‘to clear [of rubbish] the gullies beside their own plots of land’ (with the purpose of avoiding inundations).¹⁸⁸

We may conclude that the original meaning of καθαρός was not ‘loose’ but rather ‘cleared, without obstacles’. In combination with the phonological problems in reconstructing the Proto-Greek and PIE pre-forms, this casts grave doubts on Peters’ etymology. Beekes (*EDG* s.v.) remarks that the interchange καθαρός ~ κοθαρός could point to a substrate word. As long as convincing alternatives are lacking, this seems the best available option to me.

κρήνη ‘source’ (non-Ionic κράννα) has no clear outer-Greek comparanda. Within Greek, κρήνη is often compared to the poetic word κρουνός ‘source, stream’. This would work only if we start from pre-forms **kṛsnā-* > **krahnā* > κρήνη and **krosno-* > κρουνός (both with the 1st Compensatory Lengthening).¹⁸⁹ The form κρουνός could then be compared with a Germanic word for ‘wave, flood’, ON *hrōnn*, OE *hræn* < PGmc. **hraznō-* (see *GEW* s.v.). However, Lobeck (see *DELG* s.v. κρουνός) already drew attention to the possibility that κρήνη reflects a pre-form **krāhnā* < **krh₂s-n-* ‘head’. For the semantics, Lobeck compared Lat. *caput fontis* and Gr. κεφαλὴ in the meaning ‘fountain’. Indeed, Hesychius also attests a gloss κράννα· κεφαλὴ. Lobeck’s proposal would preclude a connection between κρήνη and κρουνός, but the connection between κρουνός and the Germanic words may perhaps be retained.¹⁹⁰

The poetic (epic and tragic) verb μάρπτω ‘to grab, catch’ is typically used of predators, hunters, warriors, Harpies, snakes, Gorgons (etc.) trying to reach their victim in pursuit. Its opposite is often ἀλέομαι, ἀλύξαι ‘to escape (from)’. An indication that -αρ- reflects **ṛ* has been seen in the isolated forms μεμάποιεν (*Scut.* 252) and μαπέειν (*Scut.* 231, 304), which would contain a metrical reflex of this sound (see Beckwith 1996: 105–106). However, before this specu-

188 *IG* XIV 645, I, 130–133.

189 The reconstruction **kṛsnā-* is incompatible with the Aeolic form κράννα (*Alc. fr.* 150.5). This was also remarked by Beekes (*EDG* s.v. κρήνη): “all dialects have the vocalization **-ra-*, so the etymon probably did not have vocalic **ṛ*. Therefore, the explanation remains uncertain.” It is not clear, however, whether Aeolic κράννα really belongs in this discussion: since the interpretation of the context is unclear, the meaning of κράννα cannot be established.

190 If the Aeolic form κράννα belongs here (but see the previous footnote), this would be a strong argument in favor of a pre-form PGr. **krāhnā*.

lative possibility is further investigated, the problems with the reconstruction and etymology of μάρπτω must be addressed.

The dialectal origin of μάρπτω is unclear. The aorist ἔμαρψεν is ascribed to Cyprian by the *glōssai kata poleis* (cf. Ruijgh 1957: 166), but a gloss κάμμαρψις· μέτρον σιτικόν, τὸ ἡμιμέδιμνον. Αἰολεῖς is found in Hesychius. Moreover, the following glosses are attested in Hesychius without dialect identification:

- βράψαι· συλλαβεῖν. ἀναλῶσαι. κρύψαι. θηρεύσαι.
- βράπτειν· ἐσθίειν. κρύπτειν, ἀφανίζειν. τῷ στόματι ἔλκειν. ἢ στενάζειν.
- ἔβραψεν· ἔκρυψεν. ἔπιεν. κατέφαγεν.
- ἔβραπτεν· ἔκρυπτεν. ἐλάφυξεν.

From these glosses, it is not easy to obtain a clear picture about the origin and root meaning of μάρπτω. We could assume a relation between βράψαι and μάρπτω in view of the interpretation of the former as συλλαβεῖν ‘to grasp’, θηρεύσαι ‘to hunt down’. However, it remains unclear how other meanings like κρύπτειν or ἀφανίζειν are connected. It is also suspect that a slightly different root shape βρακ- is attested in the glosses βρακεῖν· συνιέναι and βράξαι· συλλαβεῖν, δακεῖν, καταπιεῖν (both Hsch.), with clearly similar meanings. The interchange of root-final velar and labiovelar could point to substrate origin (cf. Beekes, *EDG* xxvii–xxviii).¹⁹¹ Moreover, in Homer there is a sigmatic aorist stem βροξ- ‘to gulp down’ (cf. also βρόξαι· ῥοφήσαι ‘to slurp’ Hsch.),¹⁹² where the meaning is clearly similar to some of the glosses on forms with -α- (e.g. ἐλάφυξεν, κατέφαγεν, καταπιεῖν). The variation in root vocalism may again point to Pre-Greek origin (*EDG* s.v. βρόξαι). This conclusion is perhaps corroborated by βρόγχος ‘windpipe, throat’ beside βράγχος ‘hoarseness, angina’, with the same variation in root vocalism, if we assume that both forms have the typical Pre-Greek prenasalization (cf. *EDG* s.vv.).

Thus, in view of the numerous problems with the reconstruction of μάρπτω and the lack of a decent etymology, it is completely uncertain whether this verb ever contained a syllabic liquid. Returning to the problematic forms μεμάποιεν and μαπέειν, the fact that they are attested exclusively in the pseudo-Hesiodic *Scutum* does not favor the idea that they contain a reflex of **r*. Le Feuvre (2015: 161–162) has argued that the forms may have been created artificially, by *metri causa* deleting -ρ- in the expected but metrically problematic form μεμάρποιεν.

The noun μάρτυς, gen. μάρτυρος ‘witness’ has no good etymology. The main problem is posed by its morphological analysis: the surface form of the suffix

191 Differently Le Feuvre (2015: 158), who argues that the glosses with βρακ- are etymologically unrelated to βραπ-, μαρπ-.

192 καταβρόξειε (*Od.* 4.222), ἀναβρόξειε (*Od.* 12.240).

-(t)ur- is unparalleled in Greek. The connection with a root **smer-* ‘to remember’, which is otherwise attested only in Indo-Iranian, is difficult for this reason. Frisk (*GEW* s.v.) proposes to start from an abstract noun **már-tu-* ‘testimony’, which he recognizes as the original form in acc. sg. μάρτυν (Simon. *fr.* 11.1), dat. pl. μάρτυσι. This abstract would then have secondarily changed its stem to attested *mártur-* under the influence of a derived form **mártu-ro-*, perhaps starting from the gen. pl. μαρτύρων. Several steps in this reasoning need special pleading, as is stressed by Chantraine (*DELG*) and Beekes (*EDG*); the latter assumes a substrate word, following Furnée (1972: 296).¹⁹³

The word for ‘maiden’, παρθένος (Hom.+), is a beloved object of etymological speculation. A fair number of scholars have embraced the reconstruction proposed by Klingenschmitt (1974), **pr-steno-* “die Brüste hervor habend” (i.e. “with protruding breasts”).¹⁹⁴ Such a denomination would in my view have been completely inappropriate, and I view the etymology as a curiosum of the history of Indo-European scholarship. A more serious proposal was made by Hamp (1972): παρθένος would reflect **bʰrǵh- ξ en-* ‘having height’ comparable to **bʰrǵh-ént-* (Ved. *bṛhánt-* ‘elevated’) and **bʰrǵh-nt-ih₂* (OIr. *Brigit*, Ved. *bṛhatī* epithet of Uṣas). This form would have been remodeled to PGr. **pʰrkʰh- ξ en-ó-* “the elevated one”, which then developed to **pʰrkʰh^{en}ó-* > παρθένος (with accent retraction by Wheeler’s Law). Semantically, this etymology is attractive because **bʰrǵh-nt-ih₂* was the main epithet of the mythical maiden *par excellence*, PIE **h₂eus-ós* ‘Dawn’. However, the lack of good parallels for a suffix **- ξ en-* in Greek renders the idea uncertain. Moreover, it must be taken into account that the word appears in the form φαρθενος in Arcadian (*IG* v,2 262, Mantinea), that is, in a dialect where -αρ- cannot be the regular reflex of **r-*. No conclusions can therefore be based on this etymon.

For πρόμος, a *hapax* in Aristophanes, Frisk (*GEW* s.v.) thinks of a “Schwundstufige Form von πρόμος”. But the etymology is doubtful (“wenn überhaupt richtig überliefert”, Frisk adds). Hom. πρόμος ‘warrior who fights in the front ranks’ might be a shortened form of πρόμαχος ‘id.’.

The adjective ραδινός ‘slender, tapeable’, of branches or young women (Hom.+), Aeol. βράδινος ‘id.’, Hom. ροδανός ‘id.’ (of reeds).¹⁹⁵ The suffixation

193 Beekes’ argument that a pre-form **smrtu-* would have to vocalize as **smratu-* obviously cannot be used as an indication of Pre-Greek origin.

194 Klingenschmitt has to assume that the preposition παρ- was reintroduced in the compound, because in his view unaccented word-medial **r* would have to yield -ρα-.

195 The *hapax* ροδανόν has a v.l. ῥαδανόν, see West (2001: 133ff.). It is uncertain whether ῥάδαμνος ‘branch’ (cf. also ὀρόδμανος) is related to ροδανός. If so, one might envisage an earlier form **ῥάδαμος*, in which the ending was replaced by -αμνος after a semantically close

-ινός calls to mind 'Caland' formations like πυκινός 'dense' beside πυκνός and πυκι-, and also ἀδινός 'thick, full, rich' beside ἀδρός (**sh₂d-*). However, the difference between ῥαδινός and ῥοδανός is difficult to explain within Greek. Moreover, the root ῥαδ- has no clear-cut etymology: the connection with the *hapax* Ved. *ávradanta* 'were weakened' (mentioned by Mayrhofer s.v. *VRAD*) cannot be relied upon. Beekes (*EDG* s.v. ῥαδινός) interprets the variation between ῥαδινός and ῥοδανός as pointing to Pre-Greek origin.

The neuter ῥάκος 'shred, rented garment; (pl.) rags' (*Od.*+) contains a root **urak-*, given the existence of glosses with βραχ- in Hesychius. In view of its different meaning 'long-robed women's garment', the appurtenance of βράκεια (*Sapph.* 57.3) is somewhat uncertain. The connection with ῥήγνυμι is untenable, not only because of the *a*-vocalism of ῥάκος, but also in view of the voiceless root-final stop. The connection with Ved. *vr̥ścánti* 'they hew, cut off' (defended by Mayrhofer, *EWAia* s.v. *VRÁŚC*) is uncertain. Unless one wishes to follow the speculations discussed by Frisk (*GEW* s.v. ῥάκος), there is no indication that the word is inherited, nor that it ever contained **r*.

Ionic-Attic has several related words for 'rope, cord': σπάρτον (*Hom.*, *Hdt.*, *Th.* etc.), σπάρτη (*Ar.*), σπαρτίον (*X.*+). They can be connected within Greek to σπεῖρα 'anything wound or coiled', e.g. 'cord, belt, etc.' (class.), and perhaps also to σπείρον 'sail, cloth, burial shroud, etc.' (*Od.*+). The suffixes and ablaut are compatible with an inherited word **spr-to-*. Given that the paradigms of σπάρτον (etc.) are non-ablauting, that no corresponding verbal root is attested in Greek, and that the meanings are clearly lexicalized, there is no reason to assume that the vocalism of σπάρτον was influenced by a full grade form. In this respect, the case would be different from ἄσπαρτος 'unsown' and σπαρνός 'rare', which may both have been influenced by the full grade of σπεῖρω and/or the zero grade of forms like ἐσπάρην, ἔσπαρμαι. However, the fact that no clear cognates are attested in other Indo-European languages should make us cautious regarding this example.¹⁹⁶

The group of στραβός 'squinting', στρεβλός 'bent, twisted, curled, shrewd' (cf. στράβηλος 'wild olive tree') must primarily be compared with στρόβος 'whirl',

lexeme like θάμνος 'thicket' or ῥάμνος 'thorny shrub'. Of course, this remains pure speculation.

196 It is conceivable that the words derive from the same root as OLith. *spartas* 'tie', which belongs to Lith. *spirti*. This verb has several meanings: 'to offer resistance', 'kick with the hoofs' (of horses), 'strike, crash' (of lightning), 'push, sting' (of bees), 'move quickly, be speedy, hurry'. Etymologically, this verb derives from **sperH-* 'stamp into the ground, push down' (the form may rather be **TsperH-*, cf. Lubotsky 2006) as found in Hitt. *ispār-i* 'to trample', Ved. *sphuráti* 'to kick away with the foot', Av. *spar-* 'to tread, trample', etc.

στρόμβος 'id.'. Since the root-final stop has pre-nasalization, the etymon is most probably Pre-Greek (cf. *EDG* s.v.).

The gloss τετάρπετο· ἐτέρπετο (Hsch.) is corrected in Latte's edition to τετάρπετο· ἐτέρπετο (i.e. derived from τέρπομαι 'to enjoy'). Since the reduplicated aorist τετάρπεσθαι 'to enjoy' is attested in Homer, Latte's conjecture is attractive.

The noun τράχηλος 'neck, throat' (Hdt., E.+) is usually connected with the root of τρέχω 'to run, turn' (originally of a wheel). The semantic development 'which turns/runs' > 'pivot' > 'neck' has good parallels (cf. Lith. *kāklas* 'neck' from PIE **k^wek^wlo-* 'wheel, circle'). If this identification of the root is correct,¹⁹⁷ the form is likely to be the substantivization of an adjective in -λος that was formed to a verb in -άω or -έω (i.e. **τραχάω* or **τραχέω*). Although these exact verbs are not attested, we may note the existence of closely parallel formations τροχάω 'to revolve' (of the stars, Arat.) and τρωχάω 'to run, gallop' (Hom.+). In a base verb **τραχάω* or **τραχέω* 'to turn round, run in circles', the reflex of **ǵ* may well have been influenced by the vowel slot of τρέχω (or τροχός).

¹⁹⁷ I no longer consider it necessary to doubt that τράχηλος is related to τρέχω (as in Van Beek 2013; cf. also the doubts in Chantraine 1933: 242). Beekes (*EDG* s.v. τράχηλος) follows Furnée (1972: 115 n. 5) in assuming a substrate word because of possible evidence for a Pre-Greek suffix -ηλο-; this is jumping to conclusions.