The development of the Proto-Indo-European syllabic liquids in Greek
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9. Remaning evidence for αρ and ρα

The preceding chapters have provided us with a framework in which the remaining evidence for *$\mathring{r}$ in Ionic-Attic can be discussed. I have distinguished three groups of potential counterevidence to a Proto-Ionic vocalization *$\mathring{r}$ > -αρ-: words with -ρα- that are candidates to contain the outcome of *$\mathring{r}$ in front of -σ- (section 9.1), verbal forms with a root *CraC-* (section 9.2), and words with word-final *-$\mathring{r}$ > -ρα (section 9.3). After that, I will discuss evidence that can be left aside for various reasons (section 9.4), discuss the evidence for *-$\mathring{r}n$- (section 9.5) and give an overview of the remaining evidence for -αρ- in isolated nominal formations (section 9.6).

9.1 The development of *-$\mathring{r}s$- in Ionic-Attic

Some words with etymological *-$\mathring{r}s$- have -ρα- as the outcome in front of -σ-. The reason to treat these words together are the problems surrounding the adjective θρασύς 'bold', which have been discussed in section 4.5. There are two basic options for explaining θρασύς:

(1) a conditioned sound change *$\mathring{r}$ > -ρα- | _s (θρασύς the regular Proto-Ionic form)
(2) an unconditioned change *$\mathring{r}$ > -αρ- (θρασύς an artificial Epic creation).

Let us briefly repeat the arguments for considering θρασύς an artificial creation of Epic Greek. Since θρασύς is attested also in Ionic-Attic prose, it seems to be an important piece of counterevidence against a Proto-Ionic vernacular change *$\mathring{r}$ > -αρ-. However, given the levelings described in section 4.4, the expected outcome of an ablauting Proto-Greek *u*-stem paradigm would have been Proto-Ionic *θαρσύς. I have argued that an earlier *θαρσύς is indeed presupposed by the spread of *a*-vocalism through the derivational system of θάρσος, θαρσέω, θαρσύνω, etc. Moreover, the adjective θαρσαλέος (attested both in Epic Greek and Ionic-Attic prose) seems to have replaced this *θαρσύς, because it is θαρσαλέος, not θρασύς, that stands in a derivational relation with the Caland forms with θαρσ-.

The regular Epic outcome of non-ablauting *$t^h\mathring{r}su$- is found in personal names and compounds with θρασυ-. Moreover, the Homeric formula θρασειάων ἀπὸ χειρῶν may contain the Epic reflex of the weak stem *$t^h\mathring{r}sew$- of the originally ablauting adjective (section 6.7.8). I have suggested that the Homeric As. θρασύν was artificially created on the twofold basis of θρασειάων and the compounds with θρασυ-. The new adjective θρασύς, with its martial meaning 'bold, daring, reckless', may then have been borrowed from Epic Greek into the Ionic-Attic vernacular.

Two problems with scenario (1) must be stressed in particular. First of all, θρασύς would not be the expected Proto-Ionic outcome of an ablauting paradigm *t^hersu-, *$t^h\mathring{r}sew$-. Secondly, the conditioned phonological development would require a phonetic underpinning. Since a decision concerning the regular development of *-$\mathring{r}s$- should not be based merely on θρασύς, we have to review the other evidence for pre-forms with *-$\mathring{r}s$- in the vernacular.[976]

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[976] The evaluation of PNs with a first member Θαρσ- or Θρασ- is complicated by the fact that they are so frequent throughout alphabetic Greek, and appear in inscriptions from almost every dialect. A priori, it is possible that names with Θρασυ- contain the reflex of Epic *$\mathring{r}$, and that those with Θαρσυ-, Θαρρυ-contain the Ionic-Attic vernacular outcome, or that of some West Greek dialect. However, since names with Θαρσυ- may always have been influenced by forms like θάρσος or θαρσαλέος, I will not base my argument on them. On Crete, θορσυς is attested twice as a PN in Polyrrhenia (*IC* II 23, 37 and 53), but the *o*-vocalism of this form would be enigmatic in a genuine Cretan word. One could ascribe this name to an Achaean substrate on Crete, cf. the discussion in Leukart (1994: 191). The Myc. PN *To-si-ta* is generally interpreted as /T^horsītās/, a hypocoristic

Before this can be done, it is necessary to resolve a preliminary issue. If *s underwent an early intervocalic lenition to *h in Greek, why wasn't the group *-r̥sV- (underlying θρασύς) affected? This question can be answered after a consideration of the lenition *s > h | N̥_, as in δαῆναι 'to learn' as opposed to δασύς 'dense'.

9.1.1 The development of *-N̥sV-

The main problem is the retention of -σ- in δασύς 'hairy, densely grown', which is odd in view of the outcomes of the PIE root *dens- in Greek.[977] The verbal root is represented by the reduplicated pres. διδάσκω 'to teach' (whence secondary aor. διδάξαι), Hom. δαῆναι 'to learn' (intr. aor.), δέδαε 'taught' (red. aor.), and in nominal formations by the relic first member of δαΐφρων 'prudent'.[978] The verb has secure cognate formations in Iranian.[979] Since the -s- was not preserved in any of the Greek forms just cited, it cannot be doubted that *-N̥sV- underwent a regular lenition to *-N̥hV-, independent of the accent.

But how to explain δασύς? Its most obvious cognate Lat. dēnsus 'thick, dense' may continue *dn̥s-ó- or *dens-o-, because *dn̥s-u- would be expected to yield an i-stem ⁺⁺dēnsuis. Nevertheless, δασύς looks like an inherited u-stem adjective, because a stem *dn̥s-u- is also presupposed by the semantically identical δαυλός (δαῦλος) 'dense, hairy, shaggy' < *dn̥s-u-ló-.[980] Thus, δαυλός points in the same direction as δαῆναι and δέδαε: *-N̥sV- was regularly lenited to *-N̥sV-. This makes the the retention of -σ- in δασύς an even more urgent problem. It has previously been ascribed to expressive gemination (Szemerényi 1954: 261) or to a "double treatment" of *-N̥sV- (DELG s.v. δαυλός), but neither of these proposals offers a satisfactory solution.[981]

The retention of -σ- can be easily explained, however, if we suppose that δασύς continues an ablauting paradigm *déns-u-, *dn̥s-éw-, and that the lenition *s > *h in intervocalic position took place before the first stages of the first compensatory lengthening started to affect intervocalic -Ns-. This means that *dn̥h-ew- could be restored to *dn̥s-ew- on the basis of the strong stem *dens-u-. In δαυλός, the -s- was not restored because the paradigm had no ablaut. Thus, the pair δασύς beside δαυλός provides clear-cut evidence that the u-stem adjectives retained paradigmatic ablaut in Proto-Greek at least.[982]

By way of excursion, let us consider Hittite daššu- 'strong, powerful; heavy, well-fed; difficult, important', which points to a pre-form *dens-u- with full grade root (cf. Kloekhorst, EDHIL q.v.). The identity of daššu- and δασύς is often implicitly rejected when scholars speak of two homonymous roots. However, it deserves attention that one of the meanings of Hitt. daššu- is 'heavy, well-fed', from which one could derive the meaning 'dense' via 'thick, fat'. Indeed, one of the meanings of Lat. dēnsus is 'thick', and the semantic development is

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derived from a compounded name with first member *dʰr̥si-. On this idea, and the comparison with Θερσίτης (Hom.+), see section 2.3.1.

[977] For a more complete overview of the evidence, see Manolessou & Pantelidis (2011). In my view, there is no sufficient reason to assume, as they do, that the accent influenced the development of *-N̥sV-. After completion of this chapter, the recent book by Nikolaev (2010) came to my attention. He gives (2010: 238-39, 241) the same explanation for δασύς proposed here, with references to earlier literature (Seldeslachts, *Studia Indogermanica Lodziensia* II (1998), 57-69 was not available to me).

[978] I do not believe that δαΐ- in δαΐφρων was originally the word for 'battle', as some scholars admit.

[979] For διδάσκω, cf. OAv. 1s. pres. mid. dīdaiŋhē 'I learn', 3s. inj. pres. act. didas̨ 'teaches'. Note the identical causative meaning of the (active) reduplicated formations in Greek and Avestan. The Vedic caus. daṃsáya- is probably secondary.

[980] On the accentuation, see Radt (1982 and 1994). For the reconstruction, see de Lamberterie (l.c.), Schwyzer (1939: 307), Frisk and DELG (s.v. δαυλός).

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

[982] Further evidence for the preservation of PD ablaut in u-stem adjectives has been provided in section 4.1.

common (cf. section 4.3.1 on ταρφύς). In Greek, the meaning 'dense' was apparently restricted to animal hairs and to the foliage of trees.

In my view, the verbal root *dens- 'to be learned, (tr.) to teach' and the root contained in the adjective *dens-u- 'dense' are etymologically indentical. Although a semantic development from 'dense' to 'experienced' may seem odd at first sight, a good parallel is attested in Greek. Beside πυκνός, πυκινός 'hairy, dense' and πύκα 'frequently', πυκιμήδης literally means "with dense plans", πυκινόφρων "with dense mind". Another possible instance is the Homeric formula λάσιον κῆρ 'wily heart', beside the normal meaning 'hairy, densely grown' of λάσιος.

Given these parallels, we may now tentatively reconstruct what happened. The original meaning of the root *dens- is 'dense, thick', as presupposed by the Hittite, Greek and Latin adjectives. The verbal root then underwent a semantic development to 'wily, complicated' (of the mind), hence 'experienced'.[983] The Caland first member *dn̥s-i- contained in δαΐφρων corresponds to Vedic dasrá- and Av. daŋra- 'wise, capable' < *dn̥s-ró-. These were relatively late derivations from the verbal root, created after the precursor of δασύς had become semantically isolated.[984] As for Hittite daššu-, it might show the intermediate stage of the semantic development in its meaning 'difficult'.

No matter whether this identification of the root of δασύς and δαυλός with that of δαῆναι is correct, it appears that the retention of -σ- in δασύς can be explained from an ablauting adjectival paradigm.

9.1.2 Retained -σ- from *-r̥s-: regular or analogical?

In a number of Greek words, a surfacing intervocalic -σ- seems to derive from a pre-form containing a sequence *-r̥s- (e.g. θρασύς). Manolessou & Pantelidis (2011) have recently discussed all the alleged examples.[985] The following examples are candidates to have retained *-s-:

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[983] A possible semantic motivation could be that the words of a wily person are 'impenetrable', an intricately woven web that is complicated to understand. The LfgrE (s.v. δαῆναι) points at the use of adjectives like ποικίλον 'complicated' (Od. 8.448), παντοίην 'manifold' (Od. 6.223) to qualify the object of learning. Note, in this context, Av. hizuuō daŋhah- 'power of the tongue'. On the other hand, someone whose stories can be straightforwardly unraveled (and whose mind can be easily penetrated by others) would be considered foolish.

[984] A further instance of the intermediary root meaning 'complicated' is perhaps the neuter plural δήνεα 'plans, ruses', whose etymological identity with Ved. dáṃsas- 'ability', Av. hizuuō daŋhah- 'power of the tongue' cannot be doubted. However, from a PIE *dens-os- one would expect an Ionic outcome ⁺⁺δείνεα, and there is some evidence to suggest that the pre-form of δήνεα had *ā. Hackstein (2002: 185f.) accounts for δήνεα as follows: "in einem ablautenden Paradigma *dens-os, dn̥s-es-h₂ wurde die Schwundstufe (*dn̥s- >) urgr. *das- zu *da-n-s- re-na[s]al[is]iert nach e-stufigem *dens-, eine Möglichkeit die (…) sich (…) auf unzweideutige Parallelfälle berufen kann." If such an ablauting s-stem paradigm could be reconstructed, the retention of intervocalic -s- in the pre-form *daseha < *dn̥s-es-h₂ could indeed be explained by inner-paradigmatic leveling with the singular form. It is problematic, however, that there is generally no evidence for root ablaut in Greek s-stems (see section 4.1.6). For the "renasalization" of the root, Hackstein refers to θάμβος 'amazement', but this word has no clear etymology, and there is no evidence for the full grade root *θεμβ- assumed by Hackstein. According to the handbooks, *dens-os was reshaped to *dans-os by influence of the a < *n̥ in the verbal paradigm of δαῆναι. This view is rejected by Hackstein (l.c.). In my view, the reshaping could perhaps be accounted for if the derivationally related u-stem adjective had a strong stem *dans-u- << *dens-u- at some point. This would be paralleled by the replacement in forms like κρέτος >> κράτος, which started from the adjective κρατύς (see section 4.2.1).

[985] 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 Schwyzer (1939: 307, with marginal references to older literature), who remarks that in *-r̥sV- "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 afterwards. In my view, there is no reason to doubt that the development of intervocalic *-Ls- was accent-conditioned, as Wackernagel originally proposed: *-Ls- was preserved only when the accent was on the immediately preceding syllable, and otherwise developed to -L- with compensatory

1. θρασύς 'bold' (θάρσος 'courage')
2. τρασιά 'hurdle for drying figs' (ταρσός 'hurdle for drying cheese; sole of the foot')
3. πράσον 'leek'
4. γράσος 'smell of a goat' (γράω 'to eat')
5. the Dp. in -Cράσι of *r*-stem substantives, such as πατράσι, θυγατράσι, ἀνδράσι.

Two explanations for the retention of -σ- are conceivable. First, it is possible that *-s- regularly underwent lenition also after *r̥, and that instances of retained -σ- were analogically restored after cognate forms with a full-grade root (basically, the same explanation required for δασύς beside δαῆναι).[986] Thus, the pre-form of θρασύς may have reintroduced -σ- from the strong stem of the adjective *tʰérs-u-, where we have seen that the lenition did not take place, or even from a different cognate formation like *θέρσος 'courage' (>> Ion.-Att. θάρσος).[987]

As a second possibility, *-r̥s- may have escaped the lenition of intervocalic *s because *r̥ did not behave like a full vowel. It is phonetically conceivable that *s had a retroflex realization after *r̥: compare the distribution found in Avestan, where *s was lenited to *h* in intervocalic position, whereas in *-r̥sV-, its allophonic realization -š- escaped the lenition. This is, of course, due to a late-PIE (Balto-Slavic, Indo-Iranian) phenomenon known as the *ruki*-rule. Even if there is no concrete indication that such an effect was operative in an early form of Greek, it is difficult to exclude this scenario on forehand.[988]

There are two potential pieces of evidence in favor of a regular lenition *-r̥sV- > *-r̥hV-. First, de Lamberterie (1990: 701-3, taking up a suggestion by Wackernagel) argued that τραυλός 'lisping, stammering' continues a pre-form *tr̥s-u-ló-, a derivative in -ló- derived from the weak stem of the PIE *u*-stem adjective *tr̥s-ú- 'dry' (see section 10.4.4 on γλαφυρός). For the semantics, he points at ἰσχνόφωνος 'stammering', which literally means "with a dried up voice", and which appears in conjunction with τραυλός in Hdt. 4.155. Secondly, one could derive γράω 'to eat' from a zero grade thematic formation *gr̥s-e/o-, to be compared with the Vedic root *gras-* 'to devour' if this contained a full grade root *gres-. As we will see below, however, this second example is dubious.

If the lenition of *s took place early enough, it would be possible to ascribe its retention in *tr̥s-ó- (in τρασιά, ταρσός), θρασύς, and in the Dp. in *-r̥si (ἀνδράσι, πατράσι) to analogical levelling. Thus, the issue depends on the evaluation of τραυλός as an example in favor of lenition, and of πράσον and γράσος as counterexamples.[989] Let us therefore turn to a discussion of the Greek forms which contain -ρασ- or -αρσ-. The individual examples are treated in alphabetical order.

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lengthening of the preceding vowel. The evidence from sigmatic aorists is rather complicated, but it can be reconciled with Wackernagel's idea (cf. Miller 1976). As Miller observes, the middle τέρσομαι 'to become dry' is a strong example against Forbes's assumption (1958: 249ff.) that *-Ls- was regularly reduced to -L- with compensatory lengthening. Forbes assumes that -s- was regularly retained in *-r̥sV-, but she does so merely because this enables her to explain cases of retained intervocalic -Ls- by analogy (e.g. θέρσος beside θρασύς).

[986] Thus de Lamberterie (1990: 701ff.).

[987] Manolessou & Pantelidis posit the same rule for *-N̥sV- and for -r̥sV-: retention of -s- only when the accent follows, lenition in other cases. In my view, the evidence does not warrant such a drastic solution. Note that their rule for *-r̥sV- predicts exactly the opposite of Wackernagel's rule for intervocalic *-Ls- (1888), where only a directly *preceding* accented syllable causes the -s- to be preserved.

[988] Another case where *r̥ did not function like a full vowel is the development of *-tw- in the position before *r̥. As I have argued in section 2.5, *-tw- was reduced to *-t- when directly followed by *r̥, whereas intervocalic *-tw- was preserved as such at that time.

[989] De Lamberterie (l.c.) discusses only ταρσός and θρασύς, for which he assumes analogical restoration of -s- under influence of τέρσομαι and θαρσ- / θερσ-, but does not give his opinion on πράσον and γράσος.

9.1.3 The Dp. in -Cράσι

In the dative plural of *r*-stems, Homer only has ἀνδράσι, ἀστράσι. After Homer, the only frequent Dp. form remains ἀνδράσι, but we also find θυγατράσι (first Hes. *fr.* 165.7, Hdt., B., X., Pl.) and πατράσι, μητράσι (both rare), γαστράσι (1x). We may conclude that at least ἀνδράσι and θυγατράσι were normal vernacular forms, all the more so since Homer only uses θυγατέρεσσι.[990] The Mycenaean form *tu-ka-ṭo-sị* or *tu-ka-ṭa-sị* (MY Oe 112.2) is badly readible; the latter reading is preferred by the majority of scholars, but it would be imprudent, as Haug remarks (2002: 59), to base any theory upon this form.[991]

It is possible that Hom. ἀστράσι and ἀνδράσι show the regular development of a pre-form with Epic *$\underset{\circ}{r}$*, in view of their respective dactylic pre-forms *$ast\underset{\circ}{r}si$* and metrically lengthened *$\bar{a}n\underset{\circ}{r}si$* for tribrachic *$an\underset{\circ}{r}si$* (see chapter 7). In the vernacular, forms like ἀνδράσι and θυγατράσι are hardly probative for the development of *$\underset{\circ}{r}$* either, because the other case forms of the plural (apart from the Np.) inherited a zero grade of the suffix (cf. Ap. ἄνδρας, θύγατρας, Gp. ἀνδρῶν, θυγάτρων). It is therefore likely in any case that an outcome -αρ- would have been replaced with -ρα-, so as to avoid stem-final alternations.

For the same reasons, no conclusions can be based on the Dp. of 'four'. Classical Attic has τέτταρσι, and Ionic and the Koine have τέσσερσι; both forms may have been analogically influenced by the Np. τέτταρες or τέσσερες, respectively. Besides, a relic form τέτρασι is attested in Early Greek Epic (Hes. fr. 294.2, Aegimus fr. 5.2) and in Pindar. This form must be the outcome of Proto-Greek *$k^wetw\underset{\circ}{r}si$* > *$k^wet\underset{\circ}{r}si$* (see section 2.5), with Epic *$\underset{\circ}{r}$*. Since the vocalization to -αρ- was posterior to the loss of *-w- in front of *$\underset{\circ}{r}$*, the Attic Dp. τέτταρσι cannot be the regular outcome of *$k^wetw\underset{\circ}{r}si$*. It is possible, however, that the reduced Dp. form *$k^wet\underset{\circ}{r}si$* first yielded *$k^wetarsi$* in the Proto-Ionic vernacular, and that *-ts- was subsequently introduced from the Ns. *$k^wetseres$* < *$k^wetweres$*. If Att. τέτταρες generalized the vocalism of the Dp., this could explain the difference with the Ionic and Koine form τέσσερες.[992] It is hard to exclude, however, that the vocalization *$k^wet\underset{\circ}{r}si$* > *$k^wetarsi$* was influenced by forms with a full grade, notably the *k^wetwer*- underlying τέσσερες.

9.1.4 γράσος and γράω

It has been proposed that the substantive γράσος 'smell of a he-goat' (Eupolis, Ar., etc., mostly with sexual connotations) derives from the same root as γράω 'to eat' (cf. *DELG* s.v. γράσος). For the semantics, it is noted that the formally comparable τράγος 'he-goat' (*Od.*+) is also attested in the meaning 'smell of the he-goat'. Since this word is usually analyzed as a zero grade *$t\underset{\circ}{r}g$-o- to τρώγω 'to eat, gnaw, devour', γράσος is supposed to continue an earlier *$g\underset{\circ}{r}s$-o- 'grazing', lexicalized as 'he-goat'.

It must be stressed, however, that the precise reconstruction of the ablaut between τρώγω and τράγος remains unclear (see section 9.4.1). This casts doubts on the reconstruction

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[990] Note that the Dp. forms in -Cράσι cannot be used as evidence for an accent-conditioned development of *$\underset{\circ}{r}$*. At first sight, one could think that ἀνδράσι and ἀστράσι preserve the PIE accent, in view of Vedic *pitŕ̥bhyas* (RV), *pitŕ̥ṣu* (AV) and *nŕ̥ṣu*. But this is not certain, because the accent of the Greek forms could theoretically also be due to Wheeler's Law (retraction to the penultimate in a word of dactylic metrical structure), in which case the development would be PGr. *$pat\underset{\circ}{r}sí$* (with the normal accentuation on the Lp. ending) > *$patrasí$* > πατράσι. Columnization of the accent after the other case forms (cf. πατέρες, πατρῶν) cannot be excluded either, neither in Greek nor in Vedic. Cf. the discussion in Meier-Brügger (1992b), which does not lead to a clear result.

[991] Meier-Brügger (1992b: 388), Hackstein (2002: 6) and Manolessou & Pantelidis (2011: 370) base their arguments on the Mycenaean form. But since there is no further reliable evidence for -*ar*- as a Mycenaean reflex of *$\underset{\circ}{r}$* (see section 2.1), the form is best left aside.

[992] See Stüber (1996: 117-8). With McCone (1993: 54), she assumes that the suffix allomorph -αρ- in τέσσαρες originated in the dative. But neither of them explains why we find the outcome -σσ-, -ττ- < *-tw- in this form, rather than the expected reduction *-tw- > -t-.

of *$r̥$ in τράγος, and thence also on the former presence of *$r̥$ in γράσος.[993] Moreover, the assumed semantic development is possible, but by no means compelling, and the word belongs to a peculiar register. Finally, an important question is whether γράω can be derived from a zero grade *$gr̥s$-e/o- at all. In order to answer this, a brief discussion of its attestations is necessary.

The impv. 2s. γράσθι is only attested as *ka-ra-si-ti* in the Cyprian 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, [ϝά]ναξ, κὰ(ς) πῶθι, "Hail! Eat, Lord, and drink!".[994] Furthermore, the gloss γρᾶ· φάγε. Κύπριοι (Hsch.) deserves to be taken seriously, because it again points in the direction of Cyprus.[995] Finally, ἔγραε is attested in Call. *fr.* 551 (Pfeiffer), καὶ γόνος αἰζηῶν ἔγραε κηδεμόνα. This form is traditionally analyzed as an imperfect, but in view of the absence of further context, a thematic aorist cannot be excluded. Note that γρᾶ· φάγε is glossed as an aorist, and that γράσθι also seems to be an aorist in view of the conjunction with the root aorist /pōt^{h}i/.[996]

The verbal root also underlies γαστήρ, Gs. γαστρός, secondarily also -έρος (*Il.*+) 'belly'. The pre-form underwent dissimilatory *r*-loss, probably in forms with γραστρ-, with a zero grade suffix (Vine 2011). The non-epic paradigm is N. γαστήρ, A. γαστέρα, G. γαστρός, D. γαστρί, which is the expected outcome of a PIE hysterodynamic paradigm of the type πατήρ.[997] Such a preservation of PIE ablaut is rare in Greek: it was leveled out in the types σωτήρ, σωτῆρα and ποιμήν, ποιμένα. This suggests that γαστήρ is an inherited word;[998] it is commonly reconstructed as PIE *$gr̥s$-*tér*, G. *$gr̥s$-tr-ós*.[999] The etymological appurtenance of γράστις 'green fodder' (pap. 3rd c. BC) to the above forms is doubtful.[1000]

Thus, the Cyprian imperative forms, the Callimachean indicative, and the substantive γαστήρ can be reconciled with a verbal root *gras-C-*, *$grah$-V-*. Since both Cypr. γράσθι and γαστήρ preserve archaic morphology, an IE origin of this root should be seriously considered. How should we reconstruct the Proto-Greek form? There are no clear instances of -ra- < *$r̥$ in Cyprian, but we do have a few reasonable instances of -ro- or -or- < *$r̥$ (section 3.5). Therefore, a reconstruction PGr. *$gr̥s$- is at least questionable. Since the existence of a

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[993] Hackstein (1995: 180) reconstructs the root as *trh_3g-, but the laryngeal seems to be based only on the Greek present τρώγω. If this is correct, the Greek them. aorist τραγεῖν would have to be an innovation. Was τραγεῖν (beside pres. τρώγω) influenced by the older thematic aorist φαγεῖν?

[994] Similar zero grade imperative forms are φάθι 'speak!' < *b^hh_2-d^hi, ἴσθι 'know!' < *uid-d^hi, and especially ἴσθι 'be!' beside Av. *zdī* < PIE *h_1s-d^hi. And note also the imperative *$h_1(e)d$-d^hi 'eat!' presupposed by ἐσθίω.

[995] On the other hand, the formation and dialectal origin of γραίνειν· ἐσθίειν (Hsch.) remain unclear. It is perhaps conceivable that the present γραίνω arose in Cyprian beside the contracted aorist form ἔγρᾱ, by analogy with pres. βαίνω : aor. ἔβᾱ (for the semantics, not that cattle either walks or grazes). Another possible formal comparandum is δραίνω, a by-form of the normal present δράω 'to do, perform'.

[996] The thematic imperative γρᾶ < *$gra(h)e$ could be a replacement of the older form γράσθι on the basis of the indicative ἔγραε. However, the dialectal origin of ἔγραε cannot be ascertained.

[997] The Gs. γαστέρος occurs only once in Homer, the Ds. γαστέρι only 6x in Homer, 1x Hes., 1x E. These by-forms were clearly devised for metrical reasons. Note that the As. γαστέρα is frequent in the fifth foot (κατὰ γαστέρα τύψε *Il.* 17.313, βάλε γαστέρα μέσσην *Il.* 13.506), like the Ds. γαστέρι (μέσῃ δ' ἐν γαστέρι πῆξε(ν) *Il.* 13.372 = 398).

[998] 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). Szemerényi's suggestion to connect the Callimachean word γέντα 'sacrificial meat, innards' (retained as an alternative to the traditional etymology by Beekes, *EDG* s.v. γαστήρ) does not explain the formation of γαστήρ (agent noun), and is therefore best discarded.

[999] But if the reconstruction of γράω as *$gr̥̄s$- is correct (see below), γαστήρ must be reconstructed as *$gr̥̄s$-*tēr*.

[1000] The oldest attestations of this word present a by-form κράστις (Ar.). Frisk (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). The fact that κράστις has the older attestations rather suggests that γράστις was due to folk-etymological connection with γράω.

phoneme *a in PIE is also doubtful (Lubotsky 1989), the only remaining option is to reconstruct the pre-form of Greek gras- as PIE *ǵr̥s-.[1001]

This suggestion seems to be confirmed by the etymological comparanda of γράω. The only serious candidate is Ved. gras- 'to devour, digest', attested in grásetām (3du. impv. pres. mid.), jagrasāná- (ptc. pf. mid.), grasitá- (ta-ptc.), grásiṣṭha- (superlative, 'devouring most').[1002] It is remarkable, first of all, that the root is non-ablauting. From a root *ǵres-, Sanskrit would normally form a middle perfect [++]jāgr̥sāná- and a ta-ptc. [++]gr̥ṣṭá-, with zero grade root. Thus, Vedic points in the same direction as Greek: a root *ǵr̥s- which only occurred in the zero grade.[1003] In an ideal situation, the primary aspect of this verbal root would provide information about the origin of the zero grade, but unfortunately the primary formations are difficult to reconstruct.[1004]

Given that a non-ablauting Proto-Greek root *gr̥s- (or *gras-) is the most likely option, it appears impossible to explain the retention of intervocalic -s- in γράσος, as opposed to its lenition in ἔγραε and γρᾶ· φάγε. Therefore, neither γράω nor γράσος, whatever its exact origin, can be used in the present discussion.

9.1.5 ταρσός and τρασιά, ταρσιή

The verb τέρσομαι 'to become dry' is rare in Greek, being attested only in Homer, together with an intr. aor. inf. τερσῆναι, τερσήμεναι (both 1x). This aorist must be a recent reshaping in view of its full grade root.[1005] The normal verb in Classical Greek is ξηραίνω 'to dry'. The question is, now, what weight should be attached 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, etc.' (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 foot' (Il. 11.377 and 388, Hdt., Hp.), thence a designation of all kinds of flat objects like 'blade, rudder, row of oars' (Hdt., Th., E.+). The appurtenance of all these words to the root *ters- is clear: in meaning 1. ταρσός could refer to any kind of object made of dried materials, especially to plaited wickerwork,

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[1001] The present argument does not change if one does wish to reconstruct the root as PIE *gras- (e.g. Sihler 1995: 153). It is perhaps better to reconstruct a root-initial palatovelar *ǵ-, which underwent depalatalization in front of r in Indo-Iranian.

[1002] 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, Lat. grāmen could also be compared with the Germanic verb PGm. *grōan- 'to grow' (de Vaan, EDL s.v. grāmen). The reconstruction *γρά-jω assumed by Manolessou & Pantelidis (2011: 369) is unmotivated.

[1003] Kümmel (LIV[2] s.v. *gres-) remarks that "Gegen Nasal spricht jedoch grásiṣṭha-", but one wonders whether this superlative is an old formation. It is impossible to explain the Vedic evidence by "Narten" ablaut (i.e. an upgrade of the normal PIE ablaut scheme *e / Ø to *ē / e), because the Greek a-vocalism would remain unexplained.

[1004] The coexistence of middle present and middle perfect forms in Vedic could point to an older intransitive verb meaning 'to devour, digest grass'. This would harmonize with Gr. γαστήρ, as an organ that habitually digests. However, Cypr. γράσθι seems to be the 2s. impv. *ǵr̥s-dʰi of a root aorist, with the zero grade of the root expected in such a formation. As for other roots in the same lexical field, the regular PIE present in the meaning 'to eat' was clearly *h₁ed-mi. The normal Greek aorist φαγεῖν 'to eat' had a different meaning in PIE (cf. Ved. bhájati 'to share, apportion'). However, if one wishes to assume that *ǵr̥s- 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, 3p. ákṣan (< *gʷʰes-, but only attested in Indo-Iranian) and PIE *gʷerh₃- 'devour'. There may have been semantic nuances that can no longer be recovered.

[1005] The intransitive verbal semantics match the u-stem adjective attested in other IE languages (Ved. tr̥ṣú- 'greedy', Av. taršu- 'dry', Goth. þaursus 'dry', G. dürr).

and meaning 2. 'sole of the foot' is in my view best derived from 'callous skin', rather than from 'flat object' (as assumed by Frisk and *DELG*, q.v.).[1006] The zero grade formation *$tr̥s$-ó-* looks archaic, which is confirmed by its wide semantic range in Greek.[1007] The same IE verbal root served as a basis for Arm. *t'aṙ* 'stick for drying grapes etc.' < *$tr̥s$-* and OHG. *darra* 'rack for drying fruit or grains' < *$tors$-eh_2-*.

A second etymon containing the zero grade root is the rare word τρασιά (Eup., Ar., S.), ταρσιή (Semon.) 'hurdle for drying figs, dried figs; place for drying cereals'.[1008] The oxytone suffix -ιά (see Chantraine 1933: 82, Risch 1974: 116-7) creates substantives which refer to a collection of objects, or to a place where they are collected.[1009] Both semantic interpretations are possible for τρασιά: its base form *$tr̥só$-* may have referred either to the dried aliments themselves (figs, grains, etc.), or to the baskets or items of wickerwork that were kept in a storage place (cf. ταρσός, meaning 1).

Although τρασιά is attested only in poetic authors in the Classical period, it looks like an Attic vernacular word because it is attested in comedians. It seems attractive, then, to assume that τρασιά is the regular outcome of *$tr̥s$-$iā̆$-*, and that ταρσιή had its vowel slot restored after the verbal root. The same analogical restoration would then have taken place in ταρσός. It must be objected, however, that τέρσομαι is not a productive verb anymore in Ionic-Attic, where it had been replaced by ξηραίνω. Moreover, the meaning of ταρσός 'sole of the foot, blade, rudder' was without a doubt hard to connect with that of τέρσομαι 'to dry' already for speakers of Proto-Ionic, while τρασιά is still semantically and morphologically perspicuous as a "place for dry storage".[1010] In other words, given the semantic isolation of ταρσός, it is problematic to assume that a pre-form *τρασός was influenced by τέρσομαι, and that τρασιά escaped this influence.[1011]

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. Note that Homer attests a large number of nouns in -ιή (Risch, l.c.), and that this formation yielded convenient dactylic forms if the root ended in a short vowel plus a single consonant. There would be a clear motivation for retaining *$tr̥siā̆$-*: just like καρδίη, the vernacular form ταρσιή would have been ill-suited to the metrical demands of dactylic poetry. Drying hurdles are mentioned in Epic Greek, 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 *$r̥$* in front of *s*, on account of τρασιά, then it must

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[1006] "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 'trocken', z.B. ξηραίνω, ersetzt wurde" (Frisk, s.v. ταρσός).

[1007] For the zero grade *$tr̥s$-ó-*, cf. other inherited formations like ζυγόν 'yoke', καρπός 'harvest'. In the present context, it is interesting that τέρσομαι itself has lost all traces of ablaut: the intr. aor. is τερσῆναι 'dry up', and the aorist τέρσηνε (*Il.* 17.529) was, as a factitive formation in -αίνω, clearly built on the middle present τέρσομαι (semantically close is θέρμετο 'became warm' : θερμαίνω 'to heat', and cf. also ὑδραίνω, αὐαίνω, ξηραίνω). This supports a relatively high antiquity of the zero grade derivative *$tr̥s$-ó-*.

[1008] Aelius Herodianus also has θαρριά· τρασιά, which must be due to a folk-etymological connection with θάρρος 'endurance'. The gloss ταρσῆται· ἀγγεῖα, ἐν οἷς οἱ τυροὶ ψύχονται 'vessels for keeping cheese cool' (Hsch.) seems to presuppose an agent noun ταρσήτης "dryer".

[1009] In Homer, a collective meaning is found in πρασιή 'garden bed with leeks', λοφιή 'back bristles of a boar', ἀχυρμιαί 'heap of chaff', σποδιή 'heap of ashes', ἀνθρακιή 'heap of glowing coals'. Other forms refer to a location, e.g. σκοπιή 'lookout place', ἐσχατιή 'boundary, extremity'.

[1010] "Die auffallende Bedeutungsverschiebung (…) wurde dadurch erleichtert, dass das primäre Verb der poetischen Sprache vorbehalten blieb und in der Prosa von anderen Ausdrücken für 'trocken', z.B. ξηραίνω, ersetzt wurde" (Frisk, s.v. ταρσός).

[1011] It is futile to discard the reconstruction *$tr̥só$-* in favor of a different pre-form like *$tr̥su$-ó-*, as is done by Forbes (1958).

be accepted that ταρσός contains the restored outcome of *$r̥$. This is problematic 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- < *$r̥$, also in front of *s. I prefer the second option.

9.1.6 τρήρων

The noun τρήρων means 'timorous, shy, easily frightened' in Ar. *Pax* 1067, where it is an epithet of κέπφοι, a species of waterbirds. 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*. 12.62-3, τρήρωσι πελειάσιν *Il*. 5.778). At first sight, it seems that τρήρων is an adjective, but this would be morphologically difficult because barytone nouns in -ων- refer to individuals with a characteristic adjectival property (cf. the overview in Risch 1974: 56). Moreover, the existence of a substantive τρήρων 'pigeon' is implied by πολυτρήρων (*Il*.) 'rich in pigeons'. It is therefore likely that the simplex τρήρων was the original word for 'dove, pigeon', and that πέλεια is an old feminine of the adjective for 'grey' (thus also Frisk, s.v. πέλεια) which had taken over the function of τρήρων 'pigeon' already before Homer.

It is clear that τρήρων derives from the root of τρέω 'to flee from, be afraid of, shy away' (cf. Ved. *trásanti* 'they tremble, quiver') as *$tr̥s$-ró- 'frightened, timorous' > *trasró- > *trāró-.[1012] Note that *ró*-adjectives could be derived from intransitive verbal roots. From *trāró-, a derivative *trā́rōn 'shy guy' could be productively derived (cf. e.g. στραβός 'squinting' → στράβων 'squinter'). The reconstruction *trāró- is confirmed by the glosses τρηρόν· ἐλαφρόν, δειλόν, ταχύ, πλοῖον μικρόν "nimble, weak, quick, a small vessel", τραρόν· τ<ρ>αχύ, and ταρόν· ταχύ (all Hsch.). The latter two prove the etymological *-ā-.[1013]

Since -αρ- was the normal, regular outcome of *$r̥$, it may be wondered whether *-ra- in *trahró- < *trasró- is due to a conditioned development, in front of either *s or *h. This depends on one's opinion about the first compensatory lengthening affecting original *-Rs- and *-sR-: did it pass through an intermediate stage with *-hR-, or was there only an intermediate stage with geminates? This difficult issue cannot be treated in detail here, but a special development *$r̥$ > -ρα- in front of *h would be phonetically conceivable, and paralleled by τραυλός 'stammering', if this indeed continues PGr. *$tr̥s$-u-ló-.

For purposes of relative chronology, it is interesting that τρηρός < *trasró- took part in the first compensatory lengthening. This could imply that the vocalization of *$r̥$ took place before the completion of this sound change, at least in this environment but perhaps also more generally. If there was an intermediate stage with *-hr-, the vocalization of *$r̥$ would have to pre-date the elimination of -h- in this position. However, we have to be careful not to draw any rash conclusions, because a pre-form *$tr̥hro$- would contain a highly specific phonetic environment where a vocalization to -ar- (yielding *tarro-?) would hardly have been an option. Furthermore, the present *trehō > Hom. τρέω 'to be scared, flee' may have influenced the place of the vowel. Finally, it must be asked what the pre-form of Hom. ἀρνειός 'ram' (Att. ἀρνεώς) was. If this form derives from *$wr̥sn$-ēi̯-ó-, as seems probable in view of Ved. *vr̥ṣṇí*- 'ram', this would show that the pre-form *$wr̥hnēi̯ó$- regularly developed to

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[1012] Cf. *LSJ* (s.v. τρήρων), Beekes (*EDG* s.v. τρήρων).

[1013] 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 may be a case of dissimilation. In view of these glosses as well as the etymological analysis, the occurrence of τρήρων in Ar. *Pax* 1067 (with -η- even after ρ in Attic) must be an epicism. This is confirmed by the fact that Aristophanes uses Homeric phraseology in τρήρωνι πελείῃ (*Av*. 575), with the Epic Ds. fem. in -είῃ.

*war(h)nēi̯ó-, and that in *tr̥hro- > *trahro- the vowel slot was indeed influenced by the verbal root *treh-.[1014]

9.1.7 Uncertain and irrelevant evidence for -αρσ- and -ρασ-

The reconstruction of ἄρσην ~ ἔρσην is only of minor importance for determining the development of *-r̥s-. In inscriptions, ἔρσην is attested in Lesbian, Kos, Gortyn, Messenian, Epidauros, Cyrene, and Elis.[1015] Herodotus has ἔρσην, but since Eastern Ionic inscriptions otherwise have ἄρσην, this form could be ascribed to the influence of neighboring Doric dialects (Kos, Rhodos) on the Ionic of Halikarnassos. The form ἄρσην is found in Homer, literary and epigraphic Attic, Koine, and dialectally in Arcadian and Ionic inscriptions (Miletus, Thasos). It seems, then, that Proto-Ionic had ἄρσην.

Since a zero grade reflex ορσεν is attested in Thessalian (García Ramón 2007c) beside ἔρσην in Lesbian, and since West Greek has ἔρσην, the ablaut must have been preserved into Proto-Aeolic (and, a fortiori, in Proto-North Greek after the split with South Greek). This means that Proto-Ionic may have had ablaut, too. No matter what the regular outcome of *-r̥s- was, Proto-Ionic ἄρσην may have been influenced by the full grade form.

Traditionally, the side-by-side of Ved. vr̥ṣabhá- and r̥ṣabhá- has been taken to point to two etymologically distinct *n*-stems *urs-n- and *h₁rs-n- (cf. Peters 1993b). But recently, Pronk (2009: 179) has convincingly argued that PIE had just one adjective: "Ns. *uersēn, As. *ursen-m, Gs. *urs-n-os 'male of an animal' (…) This word also occurred as the second part of the compound *gʷh₃u-ursēn 'bull' (or perhaps, with a full grade, *gʷeh₃u-ursēn), which is preserved in Tocharian and Germanic. In Greek, Indo-Iranian and Armenian, the second part of the compound was wrongly analyzed as *-rs-ēn and started to lead an independent life". Pronk's idea allows us to explain all Greek forms from one basic ablauting paradigm without initial digamma.

For the adjective ἐπικάρσιος 'transverse, crosswise', which contains -σι- < *-ti-, see section 9.4.

Although πράσον 'leek' does not occur in Homer, its derivative πρασιή is attested in the *Odyssey* in the meaning 'garden bed' (i.e. "place where leeks or similar plants are grown").[1016] Itself, πράσον first occurs in Attic comedy (e.g. Ar., further in Hp., Thphr.). The plant πράσον is often mentioned together with γήθυον, γήτειον 'onion', which is a clear substrate word in view of the variation in the dental stop and the suffix (Beekes, *EDG* s.v.).[1017] On the basis of Greek πράσον and Lat. *porrum* 'leek', a pre-form *pr̥so- could be reconstructed.[1018] The etymological dictionaries (Frisk, *DELG*, *EDG* q.v.) doubt the value of this etymology, in view of the possibility that the word was borrowed in the Mediterranean, together with the plant. I will therefore not use πράσον as evidence.

An interesting new perspective on πράσον has recently been opened by Wachter's etymology for Persephone.[1019] Wachter remarked that the oldest Attic form of Persephone is probably Περροφαττα, which is attestated on Attic vases (see Wachter 2006: 139-40). He

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[1014] I leave aside the problem of the lacking reflex of initial digamma in Homer, which may be solved either by assuming that ἀρνειός was introduced from the Ionic vernacular (see Frisk s.v.), or by assuming influence of ἄρσην.

[1015] Though see the doubts on the dialectal authenticity of this form in Minon 2007: 200-201.

[1016] Πρασιαί also occurs as a toponym in Laconia and is the name of an Attic deme. Oxytone nouns in -ιή are frequent in Homer; other examples are given by Risch (1974: 116-7).

[1017] It is not certain, in my view, that 'leek' was the original meaning: πράσον may perhaps have denoted a different species of culture plant. Similarly, MoE *leek* is related to G. *Lauch*, Du. *look*, which originally denote any kind of plant that can be peeled (cf. *Knoblauch*, *knoflook*).

[1018] The original accentuation cannot be reconstructed, because Greek neuters regularly bear recessive accent.

[1019] See Wachter (2006), and also the email discussion on:
http://klaphil.unibas.ch/fileadmin/klaphil/user_upload/redaktion/idg/Persophatta.pdf.

derives this form from PGr. *perso-k^{wh}n̥t-i̯a, which would mean 'threshing ears of grain'. The phraseology contained in this name is matched exactly in Indo-Iranian (Ved. *paṣā́n práti hanmi* "I crush [my enemies] in heaps", RV 10.48.7, Av. *paršaṇǝm nijatǝm hiiāt̰* "when someone threshes ears of corn" (see the discussion in *EWAia* s.v. *paṣá-*). Greek Περροφαττα now seems to prove that the syntagm *persó- *g^{wh}en-* is of PIE origin. As Wachter shows, the original meaning of *g^{wh}en-*, at least with agricultural products as an object, may well have been 'to strike repeatedly, thresh'. In Greek, a further trace of this meaning is preserved in μυληφάτου ἀλφίτου ἀκτῆς "mill-crushed grain of barley" (*Od.* 2.355).

The question remains, however, what the original meaning of *persó-* is. Wachter follows a suggestion by Weiss to compare *persó-* with the neuter *pr̥so-* that is allegedly reflected in Lat. *porrum*, Gr. πράσον 'leek'. Although a number of interesting observations have been made by the contributors to Wachter's email discussion, it seems unlikely that the leek was cultivated early enough outside of the Near East to justify an Indo-European etymology. If πράσον is a loanword, we do not know whether it was borrowed in the form *pr̥so-* or *praso-* (after the lenition of intervocalic *s* to *h*).[1020] For the latter option, we may compare κέρασος 'cherry', another culture word ending in -ασο- that cannot be reconstructed for PIE.

The neuter φάρσος 'quarter, part of a city' (Hdt. 1.180f. 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*). Beekes (*EDG*, q.v.) accepts the comparison with Hitt. *parši-^{a(ri)}*, *parš-^{a(ri)}* 'to break', *parša-* 'morsel, fragment' which is cited with some hesitation by Kloekhorst (*EDHIL*, q.v.).[1021] But in my view, this etymology is too uncertain, and I prefer to consider φάρσος a loanword.

9.1.8 Conclusions on *-r̥s-

There is not much evidence for regular *r̥ > -ρα- in front of a sibilant in the Proto-Ionic vernacular. No conclusion can be based on Dp. forms like τέτρασι, ἀνδράσι, ἀστράσι, where we may either assume analogy after the Ap. and Gp., or a pre-form with Epic *r̥. The forms πράσον, γράσος, φάρσος cannot be relied upon, and ἄρσην may have an analogical vowel slot. The only two suggestive cases for *r̥ > -ρα- in front of -σ- are θρασύς and τρασιά.

From the point of view of lexical semantics, however, ταρσός is a much better candidate to contain the unrestored outcome of *r̥ than τρασιή. To assume that the lexically completely isolated form ταρσός underwent an analogy with τέρσομαι 'to dry', and that the perspicuous derivative τρασιά 'drying place' did not undergo this analogy, stretches the imagination. It is more probable, in my view, that Ion.-Att. ταρσός and Ion. ταρσιή contain the regular outcome of *-r̥s-, and that the rare poetic word τρασιά was taken from the Epic tradition. If one is inclined to defend a conditioned reflex *r̥ > -ρα- in front of -σ- on the mere basis of τρασιά and θρασύς, a phonetic motivation for the different treatment would have to be supplied.

If we suppose that the derivation of τραυλός 'stammering' from *tr̥s-u-ló- 'dried up' is correct, it is the only compelling piece of evidence for the participation of *-r̥sV- in the early Greek lenition of intervocalic *-s-. The evidence for retained *-r̥s- can indeed be explained by analogy (e.g. PGr. *t^hr̥su- restored after *t^hersu-), or by assuming lexical borrowings (e.g. πράσον). Furthermore, since the lenition of intervocalic *-s- was certainly older than the

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[1020] Ringe (1989: 142-43) suggests that πράσον was borrowed into Greek in the form *pr̥so- after the lenition of intervocalic *s.

[1021] "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^hr̥s-o-, the -s- was preserved between vocalic resonant and vowel. The Hitt. word is compared with the Gm. 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).

vocalization of *r̥, and since the full grade root was *ters-, τραυλός would prove a conditioned vocalization *r̥ > -ρα- in front of *-h-. Although I find de Lamberterie's etymology of τραυλός promising, it must be stressed that a number of issues depend on this single example, and that it would be the only reason to assume a conditioned development *-r̥hV- > *-rahV-. Since we cannot exactly determine the phonetic situation of Proto-Ionic, it is hard either to exclude or bolster this specific change with phonetic or typological arguments.

9.1.9 Excusus: Attic πόρρω

As was remarked in section 1.3.1, the only potentially promising example of a vernacular reflex -ορ- in Attic is πόρρω 'further' (X., com., Pl.), πόρσω (Pi., trag., Th.).[1022] A denominative verb πορσύνω, πορσαίνω 'to prepare, provide for, arrange, etc.' is attested in poetry (Hom.+, Pi., trag.).[1023] Homer has πρόσω 'forward, further' (5x, also in Hdt.) and πρόσσω (13x), but does not attest πόρσω (except indirectly in πορσύνω, πορσαίνω). Class. πόρρω (πόρσω) and Hom. πρόσ(σ)ω must be the same word in origin (cf. *DELG* s.v. πόρσω, *pace* Frisk), as is shown by their complementary dialectal distribution and identical semantics. In fifth century Greek, πρόσω is regular in Ionic (Herodotus, Hippocratic corpus), whereas Attic only has it in the tragedians and in Xenophon. Therefore, πόρρω was without a doubt the Attic vernacular form.[1024]

It has been proposed that the variation between Attic πόρρω and Ionic πρόσω is due to liquid metathesis (e.g. *DELG* s.v. πρόσω), but this remains pure speculation (see section 1.4.2). It is also difficult to explain the vocalism of πόρσω from an *o*-grade.[1025] Since Hom. πρόσω is always used in front of a consonant (with *McL* scansion), the word is a good candidate to derive from a pre-form *pr̥ti̯ō.[1026] We therefore have to ask whether the vernacular form πόρρω (πόρσω) may also derive from *pr̥ti̯ō.[1027] If this is indeed the case, the only feasible conditioning factor for the *o*-vocalism of πόρρω would be the preceding labial consonant.

[1022] Pindar also uses πόρσιον 'farther', πόρσιστα 'farthest', recently created grades of comparison of the adverb.

[1023] The 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) must be the older form of the verb.

[1024] Thucydides uses πόρσω, never πρόσω. The form πόρσω is found in Pindar, Euripides, and Sophocles, but not in Aeschylus. All these authors also attest πρόσω. While both πρόσω and πόρσω are used in poetry, it is further noteworthy that the latter is restricted to lyric poetry. This could suggest that πρόσω originated in Epic Greek, and that πόρσω originated in the parallel lyric tradition.

[1025] In the meaning 'forward' PIE had *pr̥ and *pro, but not *por-. Moreover, to assume an *o*-grade *por- would entail that Proto-Greek had two formations for what is clearly the same word.

[1026] For further argumentation in favor of this conclusion, see section 9.1.9. Forssman (1980) has shown that the development of PGr. intervocalic *-rti̯- in Hom. ἔρρω 'to get lost' < *werti̯ō was different from that of PGr. intervocalic *-rs- (preserved in Homer as -ρσ-). This implies that the form πόρσω (as attested e.g. in Pindar) cannot be derived from *porti̯ō. On the other hand, if πόρσω derives from *pr̥ti̯ō, we may assume that *-r̥ti̯- behaved differently from intervocalic *-rti̯-. This is not contradicted by literary Doric κάρρων < *kr̥ti̯on, because the precise dialectal origin of this form is unclear, and it could stem from a dialect in which -ρρ- and -ρσ- had merged. Thus, unless one is prepared to assume a liquid metathesis, the form πόρσω itself points to a pre-form *pr̥ti̯ō, or else its origin must remain unclear.

[1027] The comparison of Att. πόρρω with Lat. *porrō* (e.g. Frisk s.v.) is probably illusory, because it does not explain the other Greek forms. An alternative explanation for *porrō* has been proposed by Nussbaum (cited in de Vaan *EDL* s.v. *por-*).

It is very unlikely, however, that -oρ- was regular after any labial consonant: in that case ἁμαρτεῖν, μάρναμαι, βραδύς, and βραχύς could not be explained in a regular way.[1028] In order to save the idea, we have to restrict the conditioning environment to the position after a bilabial stop (*p or *p^h). In that case, all potential counterexamples could be explained away. The Homeric aorist ἔπραθον (beside πέρθω) must have the reflex of Epic *$r̥$ anyway (plus introduction of the normal *a*-vocalism in the aorist; see chapter 8). For Hom. πραπίδες, one could argue that Balles' derivation from *$pr̥ku̯-íd-$ 'rib cage' is not quite certain (see section 9.4.1). Finally, πράσον might be a borrowing (see 9.1.7 above).

However, to assume such a specific condition would be an emergency solution from a phonetic point of view. Why would bilabial stops have a different effect on the anaptyctic vowel as compared to labiovelar stops or the bilabial nasal *m*? Since there is no further compelling evidence for an *o*-colored reflex in Ionic-Attic, it is better to leave πόρρω without a definitive explanation.

9.2 Verbs with a non-ablauting root *CLaC*-

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'.[1029] A *yod*-present is found in βλάπτω 'to hinder, obstruct', δράσσομαι 'to clutch at, grasp with the hand', πλάσσω 'to knead, form', and φράσσω 'to fence in, fortify'.[1030] The forms with -λα- will be treated in chapter 10. Since γράω has been shown to derive from *$gr̥h₃-e/o-$ in section 9.1, it remains to explain the reflex -ρα- in γράφω, δράσσομαι, and φράσσω.

9.2.1 δράσσομαι and δραχμή

The verb δράσσομαι 'to grasp with the hand, clutch at' is quite rare in Classical Greek, and mainly attested in poetry. Forms with preverb are unattested before the end of the Classical period. Homer only has the formulaic verse βεβρυχὼς κόνιος δεδραγμένος αἱματοέσσης "moaning aloud and clutching at the bloody dust" (*Il.* 13.393, 16.486).[1031] Since this middle perfect has presentic meaning, it looks like an Epic replacement of the metrically somewhat inconvenient form δρασσόμενος.[1032] Further derivatives like δράγμα 'sheaf, bundle' and δραγμός were productively formed from the verbal root.[1033]

[1028] For the uncertain etymology of βραχίων, see section 6.8.4. One could theoretically assume that βραδύς and βραχύς followed a productive pattern of *u*-stem adjectives where *a*-vocalism was the norm (cf. κρατύς, πλατύς, θρασύς). One would also have to assume that the *a*-vocalism of ἁμαρτεῖν was taken over from other thematic aorists. But this is not a viable track, because the isolated form μάρναμαι < *$mr̥na-$ proves that *a*-vocalism was regular in Ionic-Attic also after *m*.

[1029] There are also the so-called Doric presents στράφω, τράφω, τράχω, τράπω (corresponding to Class. στρέφω, τρέφω, τρέχω, τρέπω). On these forms, see section 3.2.

[1030] And also ῥάπτω 'to sew, stitch together', which has no etymology.

[1031] When the object is a mass noun like sand, salt, or silver, δράσσομαι governs the (partitive) genitive.

[1032] Sophocles and Euripides also use the middle perfect with presential meaning: τῆς ἐλπίδος γὰρ ἔρχομαι δεδραγμένος "for I come clinging to the hope (that I will suffer nothing but what is fated)" (S. *Ant.* 235); τί μου δέδραξαι χερσὶ κἀντέχῃ πέπλων "Why do you cling to me with your hands and hold fast to my clothing" (E. *Troi.* 750); cf. also E. *Or.* 1413. If such cases are to be analyzed as Homerisms, this could explain the rarity of the present stem (only 1x Hdt., 1x Ar. *Ran.* 545, apparently slang).

[1033] It is uncertain whether δρακτόν 'small vase' (inscr.) belongs here. Also attested are δάρκες· δέσμοι 'sheaves' (Hsch.) and δράξ, -κός 'handful' (*LXX*, Hsch.), but these forms are late, and the dialectal origin of the glosses in Hsch. is unclear. Besides, the root-final -κ- is at variance with the etymological evidence, which points to *-g^h-. Both irregularities of δάρκες may be explained if the gloss is of Cretan origin: this dialect did not have a sign <χ>, and has -αρ- as the regular outcome of *$r̥$.

An etymological connection with the Avestan root *dranj-* 'to hold; fix', YAv. pres. *dražaite* 'holds' makes good sense.[1034] Just like δράσσομαι, the Avestan verb is a deponent and can be derived from PIE *$dr\mathring{n}g^h$-ie/o-.[1035] A nasal present may also be continued in OIr. *dringid* 'climbs, clambers, advances', MW. *dringo*, but this is less certain because the meaning is somwhat different. The Slavic cognate OCS *drьžati*, Ru. *deržat'* 'to hold' points to a nasalless root *$dreg^h$-. Thus, the -α- in δράσσομαι may be the reflex of a syllabic nasal (*$dr\mathring{n}g^h$-ie/o-) rather than of *$\mathring{r}$ (*$d\mathring{r}g^h$-ie/o-), as was already suggested by Haug (2002: 61).

The etymology of δραχμή, the weight and monetary unit, is not quite clear, and the word need not have a Greek etymology.[1036] Since a δραχμή originally had the weight of six obols or obeliskoi (cf. *DELG* s.v. δράττομαι, *Der kleine Pauly* s.v. *Drachme*), the meaning of δράγματα 'sheaves, bundles' 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. Given that the Proto-Greek root was *$d\mathring{r}k^h$-, there is a natural explanation for the difference between -γμ- and -χμ-. The cluster -χμ- did not undergo regressive assimilation (in δραχμή), except across a synchronic morpheme boundary (in productive formations like δράγμα, δεδραγμένος), where -γμ- is the result of assimilation.[1037]

But how can we explain the difference between δραχμή and the dialectal forms δαρχμα (Elis, Arcadian, Boeotian, Cretan: Knossos) and δαρχνα (Elis, Cretan: Gortyn)?[1038] The Cretan form δαρχνα has been explained away with a specific dialectal assimilation -κμ- > -κν- (Schwyzer 1939: 215), but this idea is not supported by any evidence, and it does not explain why the form also occurs in Elis. Is it possible that a pre-form *$d\mathring{r}k^hmn\bar{a}$- would be preserved as such until Proto-West-Greek? On forehand, one expects an early reduction of *-$mn\bar{a}$- to either *-$m\bar{a}$- or *-$n\bar{a}$-, except when the group was directly preceded by a short vowel (cf. βέλεμνα, ἀπάλαμνος, ἀτέραμνος). It is difficult to cite clear parallels for the environment found in *$d\mathring{r}k^hmn\bar{a}$-, because most other examples of *-$mn\bar{a}$- were preceded by a vowel or diphthong. If it is accepted that *$d\mathring{r}k^hmn\bar{a}$- would be retained until Proto-West Greek, we may assume that the vocalization to -ρα- in Class. δραχμή was influenced by the present δράσσομαι. The West Greek forms with -αρ- might then contain the regular vocalization in the respective dialects (Elis, Cretan), while Arcadian and Boeotian δαρχμα would have to be koine forms. It must be stressed, however, that there is no unambiguous further evidence for *$\mathring{r}$ > -αρ- in Elis. Moreover, it cannot be entirely excluded that this word was a borrowing. There is no reason, then, to insist that -ρα- in δραχμή is the regular outcome of *$\mathring{r}$.

[1034] The present is attested as YAv. *dražaite* 'holds' (*ą̇xnā̊ dražaite vāšahe* "holds the reins of the wagon", Yt. 5.11), ptc. *dražəmna-*. Cf. also OAv. 2p. desid. *dīdraγžō.duiie* (Y. 48.7).

[1035] This connection is accepted in the *LIV*² (s.v. *$dreg^h$-). Although it cannot be entirely excluded that the Avestan present was originally a thematic root middle PIE *$dreg^h$-e/o- extended with -ya- (cf. *LIV*², l.c.), it is attractive to directly equate the Greek and Avestan formations. The older comparison of δράσσομαι with Arm. *trc'ak* "Reisigbündel" (see Frisk, *DELG* s.v. δράσσομαι) leads nowhere: Arm. -*c'*- may be derived from *-$\acute{K}s$-, but the formation is not matched in Greek.

[1036] 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 *$\mathring{r}$.

[1037] 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 since the assumption of a suffix *-smo- does not have a clear motivation, and since -μ- may have to be derived from earlier *-mn- (see below), it seems more promising to assume that -χ- is the regular outcome of the root-final stop of *$d\mathring{r}k^hmn\bar{a}$-. That the assimilation to -γμ- only occurred when the group contained a morpheme boundary is shown by synchronically unanalyzable forms like ἀκμή, λικμάω. On these issues, cf. Slings (1979).

[1038] The Cretan form δαρχνα is now also attested in Olympia (see *DELG*, Supp. p. 1289), and δαρχμα is also found in Thespiae (Roesch, *IThesp*. 38 and 39 [both ca. 386 BC]) cf. Haug (2002: 61).
. The appurtenance of Myc. *do-ka-ma* is highly uncertain, see section 2.3.2.

9.2.2 γράφω

The present γράφω 'to scratch; write' is the primary formation within Greek, because the aorist γράψαι carries an additional and productive suffix -s- (cf. *LIV*² s.v. *$gerb^h$-). The present is, however, barely attested in pre-Classical Greek.[1039] This can be explained by the semantic development form 'scratch' to 'write', by which the root ceased to have inherent presentic aspect (indicating an iterated action), and acquired an inherent telic aspect.[1040]

Etymologically, γράφω probably derives from a PIE root *$gerb^h$-, continued in the Germanic group of OE *ceorfan* 'to carve, engrave' and also in a Baltic verb meaning 'to speak, honor': OPr. *gērbt* 'to speak', *gīrbin* 'number', Lith. *gerbiù* 'I honor', inf. *ger̃bti*.[1041] It is normally assumed that γράφω derives from a zero grade thematic present *grb^h-e/o- or rather from an ablauting athematic root present PIE *$gerb^h$- / *grb^h-.[1042] However, the Greek verb is attested as γράφω in all dialects, including those where *r normally develops an *o*-colored reflex. Thus, on Lesbos we only find evidence for γραφω, and no forms with γροφ- are attested.[1043] The same is true of Arcadian (cf. the discussion in Haug 2002: 61). In Cretan, γραφω is also the normal form, even if the expected reflex of *r is -αρ- in this dialect (see section 3.2).[1044] Although γραφ- might theoretically be due to Koine influence in some of these dialects, the uniform attestation of γράφω throughout Greek, also in *o*-coloring dialects, casts grave doubts on the suggestion that this verb continues a pre-form PGr. *grp^h-e/o-.

There are, however, a couple of nominal forms with γροφ- scattered across inscriptions from various dialects. Chantraine (*DELG*, s.v. γράφω) ascribes these forms to different dialectal vocalizations of *r.[1045] However, the forms with *o*-vocalism are found mainly in West Greek dialects (Delphi, Peloponnesos) which do not normally show an *o*-colored reflex of *r. Let us consider these forms in more detail:[1046]

[1039] Only A. *Choe.* 450, Xenophanes fr. 15 DK. In Homer, only the aorist (ἐπι-)γράψαι is found (7x). In all instances but one, this aorist carries the meaning 'to graze, scratch the surface' (of the skin or a helmet), where the aoristic aspect conveys the idea of one single scratch. As is noted by *DELG* (s.v. γράφω), this earlier meaning is also found in the derivatives γραπτύς 'scratching' (*Od.* 24.229) and ἐπιγράβδην 'scratching the surface' (*Il.* 21.166). In the one remaining attestation, Homer refers to writing: σήματα λυγρὰ γράψας ἐν πίνακι πτυκτῷ "writing/scratching baneful signs on a folded tablet" (*Il.* 6.168-9). It is not entirely clear to what kind of writing the passage refers, and on what kind of material (cf. Kirk 1990 ad loc.).

[1040] In other words, the aorist is complexive and denotes the completion of a document or inscription; the present denotes the habitual or repeated action of making an inscription, but it must more originally have denoted the iterative action of scratching. In this way, the semantics harmonize with the formal analysis, which requires that the (complexive) *s*-aorist is a younger formation than the (originally iterative) present γράφω.

[1041] A reconstruction *$gerb^h$- would also be possible, given that in Baltic depalatalization of *g may have taken place in front of *r in the zero grade forms. The semantic development underlying the Baltic forms may have been 'number' < 'carved number', 'honor' < 'honor by engraving'. Even if alphabetic writing seems to be comparatively recent in Northern Europe, the use of carvings for counting may well be much older. Therefore, the Baltic words could be reconciled with the Germanic and Greek evidence if we depart from an older meaning 'to carve, engrave'.

[1042] Thus Frisk, *DELG*, *EDG*, *LIV*².

[1043] In Balbilla, γροππατα is probably a hyper-Aeolism (cf. the discussion in Slings 1979: 251-52 n. 37).

[1044] The oldest attested forms in Cretan are γεγραπτ[αι] (Eleutherna, *IC* II, 13.7, 6th c.), δ' εγραπεν (Eleutherna 4: 3, 6th c., or perhaps rather δε γραπεν?), and εγραμενα (*Lex Gortyn* I.55). Later on, forms with γροφ- are found beside forms with γραφ-, sometimes in one and the same inscription (in Knossos, among others). Bile thinks that the original Cretan form is γροφ-, even if this form is only found in later attestations: "C'est peut-être uniquement aux lacunes de la documentation qu'il faut attribuer la situation surprenante du crétois" (1988: 124). It seems more likely to me that the root γραφ- was present throughout the verbal paradigm in Cretan, as in many other dialects, at an early date. The form εγιρττατι (*IC* IV 41, I.11, Gortyn) is entirely unclear and must be left aside for obvious reasons.

[1045] "Plutôt que d'un vocalisme *o* alternant, il s'agit d'un flottement dans le timbre en grec même, cf. στρότος."

[1046] I have gathered the material from Bechtel (1921-24, II: 114), and checked it against the searchable database of Greek inscriptions at the Packard Humanities Institute.

- γροφευς 'secretary, registrar' is widespread on the Peloponnesus (Argos, Mycenae, Epidaurus, Sicyon, Arcadia, Elis) and its colonies (Cyrene).[1047]
- The following forms are found only in Argolic: γροφα 'painting, scratching', γροφις 'stylus for writing on wax tablets', γροφευω 'to be γροφευς', αγγροφα 'register, inscription', εγγροφα 'registration, act of inscription'.
- συγγροφος (f.) 'engraved list' (Argolic, Delphi).
- ανεπιγροφος 'on which there is no inscription' (1x in the Heraclean Tables, against many instances of γραφ-).
- αντιγροφον 'copy', εγγροφος 'register, registration list' (Crete, post-classical; but all earlier forms on Crete have γραφ-).
- γροπhον (Melos, *IG* XII.3.1075) is most probably a proper name.[1048]

Clearly, the forms with -o- are concentrated on the Peloponnesos. The only form found in more than two different dialects is γροφευς, and most instances of the root allomorph γροφ- are found in prepositional compounds in -γροφος (of the type class. ἄγραφος 'not written' with recessive accent and passive meaning of the second member). The only dialect where γροφ- is found beyond these two categories is Argolic.

In Elis, γροφευς is attested at an early date (6th c.), but it stands alone against numerous attestations of γραφ- (see Minon 2007).[1049] In her dialectal grammar of the inscriptions from Elis, Minon suggests that the stem γροφ- originated in this agent noun, which is of the same type as φονεύς.[1050] 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 γροφευς is attested mainly on the Peloponnesos and on Crete, the form could well be a relic from the Mycenaean period. Of course, scribes existed in the Mycenaean period, but we do not have the Mycenaean term for writing. The prepositional compounds in -γροφος, which are also widespread, may then have been influenced by the agent noun in -εύς.[1051]

It does not follow from γροφευς that a more original form of the verb was *γρέφω (as assumed by Bile 1988: 124, and earlier e.g. Bechtel 1921-24 l.c.). This would conflict with the Baltic and Germanic comparanda, which have a full grade I *$gerb^h$-. Nor does it follow that the forms with γροφ- continue an *o*-grade PGr. *$gorp^h$- which was remodelled after the vocalized zero grade γραφ-, as assumed by Frisk (q.v.). In my view, the entire evidence for this root could be explained if we assume that the pre-form of γράφω was PGr. *$gr̥np^h$-*e/o*-, a thematicized nasal infix present. It is true that no cognate nasal present formations are attested, but the reconstruction of PGr. *$gr̥np^h$-*e/o*- seems to be the only way to explain the Greek dialectal evidence, and it is paralleled by the same type of formation in βλάβομαι (beside athematic Av. 3p. *mərən̩caite*, see section 10.3.1), δράσσομαι (see the previous

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[1047] Perhaps also in Delphi (*FD* III, 1:578, l. 27: γροφευ[). The same official is called γραμματεύς at Athens.

[1048] It was interpreted by Bechtel (l.c.) as /grop^{h}ōn/, the ptc. of a verb γρόφω. However, it is most probably a proper name, because the same name appears on a stone found in Olympia and signed by a Melian called Γρόφων (Γροφον εποιε Μαλιος, *IvO* 272 = *Del.*³ 209). The only other sign of a verb γρόφω is in Gortyn (απογροφονσι *IC* IV, 174 A.52), but the attestation of this verb is late (2nd c. BC), and stands against many older attestations of γράφω in the same dialect.

[1049] The forms καταλοβει and καταλοβευσι, from the root λαβ- 'to take, seize', are found in the dialect of Epidaurus (*IG* 1485), which is a variety of Argolic. Again, a secondary *o*-grade is found in an agent noun in -εύς in Argolic, and nowhere else in Greece.

[1050] "… 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 φόνος 'tueur', avec φονεύς." (2007: 301).

[1051] Beside the various different forms with γροφ-, Argolic also attests γραθματα (with a special development of the colliding labials in *$grap^h$-ma*). This could corroborate that γροφ- is a relic from the Mycenaean period.

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section), and the semantically close Indo-Iranian present Ved. *kṛntáti*, Av. *kərəṇtaiti* 'to cut'.[1052] This assumption would perhaps even allow us to explain the forms with γροφ- as due to the vocalization of a syllabic nasal in a labial environment (as perhaps in Mycenaean, section 1.3.2). But this remains highly speculative, and as we have seen, γροφευς may also be explained by the influence of other agent nouns of the same type.

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 *farciō* 'to stuff' and *frequēns* 'stuffed, frequent'.[1053] But the semantics of this connection are weak (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.[1054] In Homer, φράσσω clearly has military connotations and means 'to fence off, fortify'.[1055] While this meaning remains in use after Homer, the most frequent meaning in Classical Greek is 'to bar, obstruct, block, clog', especially of roads and passages.[1056] As Taillardat has shown (1965), the middle may have a special nautical meaning 'to raise the deckboards'.[1057]

Beekes recently proposed that φράσσω is of Pre-Greek substrate origin, not only because of πύργος and φύρκος, but also in view of the interchange between φραξ- and φαρξ- (on which see below). This suggestion, which is hard to test in any case, loses much of its viability in view of Puhvel's proposal (1999) to derive φράσσω from the PIE root *$b^h erǵ^h$- 'to rise'.[1058] Puhvel argues that the Greek meaning is inherited in view of his proposal to translate *parkii̯a-* as 'to fence off, put beyond reach' on the Neo-Hittite Bronze Tablet. From the semantic and formal match between φράσσω and Hitt. *parkii̯a-*, he concludes that they continue the same inherited present formation *$b^h ṛǵ^h$-i̯e/o-. Within Greek, the s-aorist φράξαι would have been formed secondarily on the basis of φράσσω.[1059] If this is correct, φράσσω < *$b^h ṛǵ^h$-i̯e/o- would be good evidence for *$ṛ$ > -ρα-.

[1052] An early pre-form of γράφω may still have been athematic: 3s. *$gr-n-éb^h-ti$, 3p. *$gr-n-b^h-énti$.

[1053] "… eine überzeugende aussergriech. Entsprechung fehlt. Seit alters wird damit lat. *farciō* 'stopfen, vollstopfen, mästen' und *frequēns* 'gedrängt, voll, häufig' verbunden (…)".

[1054] Instead, Chantraine draws attention to the glosses φρύκες· χάρακες 'pointed stakes, palissaded camp' and φύρκος· τεῖχος (Hsch.), and concludes that the root underlying φράσσω was *$b^h rk$-. 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'. The latter word is often thought to be a borrowing from an Indo-European substrate language, in view of the semantically attractive comparison with derivatives from PIE *$b^h erǵ^h$- 'to rise', e.g. G. *Burg* 'fortress', Av. *bərəz-* 'elevation'. On the other hand, since chance resemblances can never be excluded, πύργος and φύρκος could also be Pre-Greek words, with a typical fluctuation in the stops (thus Beekes *EDG* s.v.). Therefore, these glosses are better left aside from our evaluation of φράσσω.

[1055] Cf. φράξαντο δὲ νῆας ἔρκεϊ χαλκείῳ "they fortified the ships with a wall of bronze" (*Il.* 15.566).

[1056] *LSJ* (s.v. φράσσω): I. *Fence in, hedge round*, hence with the collat. notion of defence, *secure, fortify* (…), *strengthen one's fortifications*; *to be embanked* (of the Nile); πεφραγμένος *armed, prepared for defence*; II. To put up as a fence, III. *Stop up, block* a road, etc., (…) *bar*.

[1057] This nautical meaning is found already in Homer (φράξε δέ μιν ῥίπεσσι διαμπερὲς οἰσυΐνῃσι, κύματος εἶλαρ ἔμεν, *Od.* 5.256-7), and also in Alc. fr. 6.7 (on which see below) and A. *Sept.* 62-4 and 795-8.

[1058] In Puhvel's words, the root "expresses strength combined with elevation, as in the root noun itself which yields Avestan *bṛz*, Farsi *burz*, Old Irish *brī*, OHG *burg* 'hilltop, stronghold, fortress'. (…) Beside natural fastnesses, there is reference to man-made raised defenses. Skt. *bṛṁháti* means 'fasten, strengthen', German *bergen* is 'shelter, salvage', Russian *béreg* is 'embankment, barrier, shore', even as we speak of 'shoring up defenses'."

[1059] This account is followed, with some hesitation, by the *LIV*². The absence of traces of Grassmann's Law in Greek is not surprising, because the root is followed by another consonant in all attested formations (ἄφρακτος, πεφραγμένος, etc.). Therefore, the root-final consonant may have been subject to regressive assimilation prior to the operation of Grassmann, cf. θράσσω from *$d^h reh_2 g^h$- 'to irritate' beside the Homeric perfect τέτρηχα.

Although I find Puhvel's root etymology very attractive, I disagree with him about the exact derivation of the Greek verb. Let us first discuss the likelyhood of an inherited PIE present *$b^h r̥ǵ^h$-$i̯e/o$-. The primary root meaning of PIE *$b^h erǵ^h$- seems to have been telic and intransitive 'to rise', as reflected in the Hitt. middle impv. *parktaru* 'may it rise up!' and Toch. B *pärk-^{ā}* 'to rise' (of celestial bodies).[1060] Hitt. *parki̯a-* 'to raise' can be analyzed as a factitive beside the primary formation *parktaru*.[1061] 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. *parki̯a-* need 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 is obviously connected with its factitive semantics. In fact, Ionic φράσσω is attested only once in Herodotus,[1062] and Attic φράττω first appears in Xenophon and Plato. On the other hand, Thucydides, Sophocles and Aristophanes do not use φράσσω, but only attest φράγνυμι as a present.[1063] The earlier date of these authors implies that the older form of the present stem in Attic was φράγνυμι. Thus, nothing speaks in favor of the view that the *formation* of φράσσω is inherited, as Puhvel assumed.

It is now necessary to consider the Greek attestations more closely. Combining the Ionic evidence from Homer and Herodotus, we arrive at a regular paradigm pres. φράσσω, aor. φράξαι, aor. pass. φραχθῆναι, pf. mid. πέφρακται. However, it is difficult to use any of these forms as evidence for *$r̥$ > -ρα-, because a considerable number of forms with -αρ- is attested in Attic and other dialects. The evidence from literary sources is as follows:

- φαρξώμεθ' (Alc. fr. 6.7 = *POxy.* 1789)[1064]
- πεφαργμένος ἀντὶ τοῦ πεφραγμένος καὶ ἐφάρξαντο ἀντὶ τοῦ ἐφράξαντο καὶ φαρκτὸν φρακτόν (*EM* 667.22, referring to the treatise περὶ παθῶν ascribed to Herodian)
- ἄφαρκτος· ἀφύλακτος 'unguarded, undefended' (Hsch. α 8564)
- φάργμα· φραγμός 'fence' (Hsch. φ 164)
- φάρκτου· φυλακὴν σκεύαζε 'prepare the guard' (Hsch. φ 176)

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

[1060] The creation of various adjectival formations like Hitt. *parku-*, Arm. *barjr* 'high' < *$b^h érǵ^h$-u-, *$b^h r̥ǵ^h$-$éu$-, Toch. B *pärkare* 'long' < *$b^h r̥ǵ^h$-$ró$- can be understood if the verbal root was originally intransitive. Ved. *br̥hánt-* 'elevated, lofty, strong' < PIE *$b^h r̥ǵ^h$-$ént$- (cf. OIr. *Brigit*, OHG *Purgunt*) may then represent a more archaic formation, if it was coined when the participle suffix -*ént*- when this still had non-agentive meaning.

[1061] As for Hittite, cf. Kloekhorst (*EDHIL* s.v. *parki̯e/a-^{zi}*-): "Alt[h]ough the bulk of the attestations inflect according to the -*i̯e/a*-class, there are a few unextended forms. In the oldest texts (OH/MS), we find 3s. pret. act. *parki̯at* vs. 3s. impv. mid. *parktaru*. These forms point to an original situation in which the stem *parki̯e/a*- is used in the active only and the unextended stem *park*- in the middle (…)".

[1062] In the specialized meaning 'to reinforce a dyke': ὁ ἀγκὼν οὗτος τοῦ Νείλου (…) ἐν φυλακῇσι μεγάλῃσι ἔχεται, φρασσόμενος ἀνὰ πᾶν ἔτος (Hdt. 2.99).

[1063] εὖ γε στοχάζῃ κἀποφράγνυσαι κύκλῳ τὸ πρᾶγμα. (S. *Ant.* 241), αἱ γυναῖκες τὴν δορίαλλον φράγνυνται 'the women bar their vagina' (Ar. fr. 367 Edmonds), τάς τε ὁδοὺς … ἀπεφράγνυσαν 'they blocked the roads' (Th. 7.74.2). Note that there are no attestations of the present φράσσω in these authors. It is possible that φράγνυμι was analogically formed after semantically close verbs like πήγνυμι (aor. πῆξαι) 'to fix, attach', or especially the opposite ῥήγνυμι 'to break through' (in Hdt. also of a dam). However, φράττω was certainly of secondary origin in Attic (analogical, or due to influence of Ionic?), and there is no reason either to consider Ionic φράσσω (as attested in Hdt.) archaic.

[1064] The form is discussed by Bowie (1981: 126-27). In his analysis of aorist subjunctive forms in the two Lesbian poets, he concludes that the long vowel subjunctive is a strong indicator of Ionic or Epic origin. This allows us to explain the aberrant reflex -αρ- < *$r̥$ in a Lesbian word. The question then remains whether φαρξ- is an old form in comparison with Homeric φραξ-.

- 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 BC)
- διαφαρχσαντι τα μετακιονια τετταρα οντα τα προς το πανδροσειο κομονι (Attic, *IG* I² 373.251, 409/8-407/6 BC).
- φαρξις ναου (*IG* IV²(1) 102.75, building records from Epidauros, 4th c. BC) glossed as "Vergitterung (des Tempels)" by the *IG* editor.
- φαρχματα (same inscr., 253)
- φαργμα (*Del.*³ 89.8, Argos, 3rd c. BC)
- διαφαργματων (Epidauros, *IAEpid.* 52, A.10).

Thus, there is independent evidence for the vocalization *$\mathring{r}$ > -αρ- in three dialects: Attic, Argolic, and the Ionic variety from which Alcaeus borrowed φαρξώμεθ'. Especially the epigraphic evidence deserves to be taken seriously.

The question then remains how the forms with -ρα- can be explained, especially since all manuscript evidence, in Ionic-Attic prose and poetry alike and beginning with Homer, has forms with -ρα-. It is interesting that many editions of the tragedians and of Thucydides print forms with -αρ-, based on the observation that Attic inscriptions start to show forms with -ρα- only in the fourth century.[1065] While emendating the unanimous evidence of manuscripts is a rather debatable editorial practice, the fact remains that the two oldest epigraphic attestations of the verb in Attic have the aorist φαρχσαι.

The traditional approach to this problem has been to regard -αρ- as old in the aorist, and to assume that -ρα- is old in the present φράσσω. Indeed, among the epigraphic evidence for -αρ-, there is no single instance of the present stem. Moreover, it is remarkable that Herodian (as quoted by the *EM*, see above) mentions the middle perfect πεφαργμένος, the aorist ἐφάρξαντο, and the participle φαρκτόν, but no present form with -αρ-. For these reasons, Meisterhans & Schwyzer (1900: 181) set up the following distribution: "φράττω bildet im Altattischen den Aorist ἔφαρξα; später in Übereinstimmung mit dem Präsensstamme: ἔφραξα".[1066]

But is it likely that -ρα- was introduced from the present into the other stems? Such influence of the present stem is not very common in Greek generally. Moreover, the aorist was much more widely used, in agreement with the factitive semantics of the root. A final, chronological problem is that the spead of -ρα- would have to have taken place much earlier in the variety of Ionic underlying Homer, where all instances already have -ρα-. This is not very attractive if one accepts that φαρξώμεθα in Alcaeus was a borrowing from pre-classical Ionic or from Epic Greek. In this connection, it is important that -ρα- is not metrically secured in any of the five Homeric attestations (-αρ- may be substituted without metrical damage). The same holds for the only attestation in Pindar,[1067] and for all instances in the tragedians. Thus, the situation is at least consistent with the view that -ρα- was introduced into the manuscript traditions of these authors at some point. The same assumption may then be made for Thucydides.

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 the present φράττω or φράγνυμι and the oldest aorist form φάρξαι came into being. Let me stress again that this distribution would be left unexplained if we follow Puhvel's view that

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[1065] Already for 19th century editors like Dindorf, it was common practice to restore forms like ἄφαρκτος for attested ἄφρακτος. Cf. the comment in *LSJ* (s.v. ἄφαρκτος): "ἄφαρκτος, Old Attic ἄφαρκτος (although this form has generally been altered by the copyists)".

[1066] This explanation was retained in Threatte (1980: 477). However, note that the oldest Attic present was not φράττω, but φράγνυμι (see above).

[1067] ἔρνεσι φράξαι (Pi. *Isthm.* 1.66), where ἔρνεσι scans as a dactyl.

Proto-Greek had a present $*b^h r̥ǵ^h$-ie/o- beside an aorist $*b^h r̥ǵ^h$-s-.[1068] The only conceivable phonological solution seems to be that the present stem contained a vocalized nasal, i.e. that the underlying formation was PIE $*b^h r̥nǵ^h$-e/o-.[1069] However, such a reconstruction is not without problems. If $*b^h r̥nǵ^h$-e/o- > PGr. $*p^h rak^h e/o$- was reshaped, why wasn't the new formation based on the productive and more frequent aorist stem $*p^h rks$-? Furthermore, the nasal presents built on this root in other IE languages are unlikely to be old. Armenian has a nasal present *baṙnam* 'raises', but this was probably secondarily formed beside the aorists *ebarj* 'raised', *barjaw* 'rose'.[1070] And Ved. *pári br̥ṃhati* 'fortifies' (ŚB+) is likely to have replaced the older causative present *barháyati* 'strengthens' (RV+) under influence of *dr̥ṃhati* 'fixes' (RV+).[1071]

Thus, 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 compounded forms like PGr. $*n̥$-$p^h r̥k^h$-to-.[1072] Such a scenario is paralleled by the origin of other factitive verbs. First of all, Tucker (1990: 297-306, esp. 305) has shown that denominative verbs in -όω that were derived from substantives belong to the "instrumentative type": πυργόω = 'to provide with a πύργος'.[1073] Like φράσσω, such verbs are rare in the present stem and often occur as an aorist (with factitive meaning) or a middle perfect indicative or participle ('provided with walls'). Moreover, they often pair with negated adjectives (Hom. ἀπύργωτος 'without fortifications'). Tucker concludes that the type πυργόω originated as a factitive denominative based on pairs of the type πεπυργωμένος : ἀπύργωτος.

This type of pairing is widespread within Greek (see Meillet 1929), and already attested in Mycenaean.[1074] From Homer onwards, we find pairs like τετελεσμένος : ἀτέλεστος and κεχαρισμένος : ἀχάριστος which have an archaic appearance. A nice example is found in Hdt. 5.6: 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." 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").[1075] In a similar way, φράσσω 'to fortify, strengthen one's defenses' may be viewed as a denominative factitive based on the pair πεφραγμένος 'fortified, with raised defenses' beside ἄφρακτος 'without fortifications, unarmed'.

Since the "instrumentative" factitives in -όω were derived from a substantival base form, it is attractive to assume that $*$-$b^h r̥ǵ^h$-to- was based on the root noun PIE $*b^h erǵ^h$-,

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[1068] The assumption that -αρ- was regular only in front of a stop plus -*s*- (O'Neil 1971) is phonetically unmotivated and completely *ad hoc*.

[1069] One could theoretically assume that the original paradigm had an aorist stem *φερξ- beside a present or middle pf. stem with φραΚ-, and a subsequent leveling to φαρξ- : φραΚ-, then to φραξ- : φραΚ-. But this seems rather far-fetched, and the zero grade aorist is better explained as an innovation of Greek: see below.

[1070] See the discussion in *LIV²* (s.v. $*b^h erǵ^h$-).

[1071] See Gotō (1987: 215).

[1072] Other such compounds in Classical Greek are ναύφρακτος 'ship-fenced' (on which see Taillardat 1965), κατάφρακτος 'with raised deckboards', and probably, with *r*-dissimilation, δρύφακτος 'latticed fence in a lawcourt'.

[1073] πυργόω 'to provide with fortifications' has almost the same meaning as φράσσω in Homer.

[1074] Cf. *ka-ko de-de-me-no* /kʰalkōi dedemeno-/ 'bound with copper' : *ka-ko-de-to* /kʰalko-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 with 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'.

[1075] ἁρμόζω 'to join' and τελέω 'to fulfil' may originally have been factitive verbs, too, but this would require a more detailed argumentation than can be given here.

*$b^h\!r\acute{g}^h$- 'elevation, stronghold'.[1076] In other words, *-$b^h\!r\acute{g}^h$-to- would be of the type Lat. *barbātus* 'bearded', rather than an original verbal adjective. The antiquity of *-$b^h\!r\acute{g}^h$-to- seems corroborated by Lat. *fortis* 'strong', which could be derived from the same pre-form in view of OLat. *forctus* (attested in Festus).[1077] Moreover, the same formation is attested in Vedic. The only Vedic verbal forms with the meaning 'to strengthen' are the hapax *pári ... babṛhāṇá-* 'strengthened, fortified', of rock (*ádri-*) functioning as a stronghold (RV 5.41.12), and *pári bṛṃhati* 'fortifies', *pari-bṛḍhá-* 'fortified' (both ŚB).[1078] Like πεφραγμένος and ἄφρακτος in Greek, they point to pre-forms *$b^h e$-$b^h\!r\acute{g}^h$-mh_1no- and *-$b^h\!r\acute{g}^h$-to-, and the semantic match is perfect.

Thus, a compounded adjective *η-$b^h\!r\acute{g}^h$-to- of PIE origin formed the basis of a factitive verb meaning 'to fortify'. In Proto-Greek, this verb formed an aorist *$p^h\!rk^h$-s- (> Att. φάρξαι) and a middle perfect ptc. *$p^h e$-$p^h\!rk^h$-méno-.[1079] Disregarding their problematic -ρα-, the presents φράγνυμι and φράσσω may have been added to the paradigm following productive patterns. This derivational scenario not only elucidates why φράσσω has factitive semantics, but also explains why all stems contain a zero grade root allomorph, and why no primary verbal formations are attested.

Thus, I do not think that the present stem (whether φράγνυμι or φράσσω) may have caused the introduction of -ρα- in the rest of the paradigm. Let us therefore consider a second possible way to explain the variation between -αρ- and -ρα-. As we have seen, Homer only attests forms with -ρα-. Is it possible to assume that the Homeric forms contain the reflex of Epic *r, and that the early Ionic and Attic vernaculars had -αρ- throughout the paradigm? The introduction of -ρα- in the Koine would then have to be due to Homeric influence, and the elimination of -αρ- in the manuscript tradition of Classical authors could be due to Koine influence.

Problematic for such an assumption, however, is that the reconstructed early Ionic vernacular forms with -αρ- were not introduced into Epic Greek, as one would expect on the basis of the scenario proposed in chapter 6. Still, a possible motive for the retention of forms with Epic *r would exist if there was an original semantic difference with the vernacular forms. Indeed, the Epic forms have a specialized military or nautical meaning ('to fortify, strengthen one's defenses', 'to provide with deckboards'), whereas the normal and most frequent meaning in Classical Greek is 'to block, bar'. One would then have to assume that the use of φράξαι in the meaning 'to fortify, raise one's defenses' in Classical authors is an epicism. A parallel case of an epicism with a restricted military meaning is στρατός 'army' (section 6.7.7).

But although it is conceivable that a semantic difference was perceived between the Epic and vernacular forms, this assumption is not evident at all. Without a doubt, the nautical meaning 'to provide with deckboards' belongs to a technical jargon of spoken Ionic, but whereas Alcaeus attests the form with -αρ-, Homer did not replace φράξε in the same

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[1076] There is ample evidence for a PIE root noun *$b^h er\acute{g}^h$-, *$b^h\!r\acute{g}^h$-: Av. *barš* 'mountain' (Ns., either zero grade or full grade), MIr. *brí* 'hill', Goth. *baurgs* 'town', OHG *burg* 'stronghold' < *$b^h\!r\acute{g}^h$-, ON *bjarg*, OHG *berg* 'hill, mountain' < *$b^h er\acute{g}^h$-. Thus, *η-$b^h\!r\acute{g}^h$-to- 'without fortification' may have been formed already within PIE, or within Greek as long as the continuant of the root noun *$b^h er\acute{g}^h$-, *$b^h\!r\acute{g}^h$- was still around.

[1077] Although the meaning of *fortis* in Classical Latin is generally 'strong, brave', especially of men, it is quite conceivable that the older meaning was 'strong, well-defended'. The comparison with Skt. *-bṛḍhá-* was already suggested by Brugmann on several occasions. I do not understand de Vaan's comment (*EDL* s.v.) that this etymology "does not explain the meaning of *fortis*".

[1078] The Indo-Aryan root *barh-* 'to strengthen' is certainly derived from 'to be high', because formations like *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.

[1079] Note the use of an instrumental dative in cases like Hdt. 7.142, ἡ γὰρ ἀκρόπολις τὸ πάλαι τῶν Ἀθηναίων ῥηχῷ ἐπέφρακτο "the Athenian acropolis used to be fortified with a palissade". 'to enclose, defend (with fortifications)'.

meaning at *Od*. 5.256. Moreover, the meaning 'to provide with a fence', attested in the epigraphic Attic forms with -αρ-, is very close to Homer's φράξαντο 'provided with a defense wall' (*Il*. 15.566). A final objection is that the expected outcome of Epic *$\mathring{r}$ after a labial consonant is -ρο-. This problem could perhaps be mended by assuming that the vernacular α-vocalism was generalized, but then it remains unclear why the vernacular form with -αρ- was not introduced.

In conclusion, I propose that the verbal paradigm of φράσσω, with its factitive semantics, originated as a denominative beside compounded *to*-adjectives like *$\mathring{n}$-$p^hr k^h$-*to*- 'un-walled, without defense'. The creation of *$p^h e$-$p^h \mathring{r} k^h$-*méno*- 'fortified' and an aorist *$p^h \mathring{r} k^h$-*s*- 'to provide with a defence wall' followed productive patterns in early Proto-Greek. The regular outcome of *$p^h \mathring{r} k^h$-*s*- is preserved in Old Attic, Alcaeus, and Argolic as φαρξ-, but its stem was replaced in later Attic and the Koine with φραξ-. Although the precise origin of this latter form remains unclear, influence of the present φράγνυμι or φράσσω on all the other forms seems highly unlikely to me.

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 *$\mathring{r}$ > -ρα-. From a phonological perspective, it is possible to analyze δράσσομαι and γράφω as older nasal infix presents. Note that βλάβομαι (chapter 10) and γράω (section 9.1) favor the idea of a regular vocalization *$CL\mathring{n}C > CLaC$. The reconstruction *$dr\mathring{n}g^h$-*ie/o*- of δράσσομαι is favored by the Avestan cognate *dražaite* 'holds', and in the case of γράφω, *$gr\mathring{n}b^h$-*e/o*- is the most obvious way to explain the appearance of γραφ- in dialects with *o*-colored reflexes of *$\mathring{r}$. Finally, even if the origin of -ρα- in φράσσω remains unclear, an older form with *$\mathring{r}$ > -αρ- is probably retained in the Attic aorist φάρξαι.

From a morphological perspective, it may be asked whether it is legitimate to assume an older nasal infix present in γράφω, because there is no obvious cognate formation. In Greek, there are hardly any nasal presents of the type Ved. *yunákti* (athematic), Lat. *iungō* (thematic), but there is one probable instance: λάμπω 'to glow, shine'. A nasalless root *leh_2p- is attested in Hitt. *lāpta* 'flashed' < *leh_2p-*t*, Lith. *lópė* 'light', OPr. *lopis* 'flame', and perhaps in OIr. *lassar* 'flame', W. *llachar* 'shining, brilliant' < PCelt. *lapsaro*-. Greek may have preserved the outcome of the nasal infix formation *lh_2np- because the root had been reanalyzed as atelic λαμπ-: cf. the presence of the nasal λαμπρός 'brilliant' which replaces the outcome of an older *lh_2p-*ró*-.

9.3 Word-final *-$\mathring{r}$

As we have seen in section 1.2.3, it has been proposed that a Proto-Greek word-final *-$\mathring{r}$ developed to -αρ at an early date in all Greek dialects, including Aeolic, Arcado-Cyprian, and Mycenaean. In the traditional framework, this development to -αρ was noteworthy because it differed from the regular word-internal outcome -ρα-. In combination with the parallels from Indo-Iranian and Celtic, this different development led to the idea that *-$\mathring{r}$ > -αρ was chronologically prior to word-internal *-$\mathring{r}$- > -ρα-. But given the evidence for word-internal *$\mathring{r}$ > -αρ- in Ionic-Attic, the chronological argument ceases to be cogent. In this section, I will therefore focus on the following two questions:

(1) did all dialect groups undergo a change *-$\mathring{r}$ > -αρ, with *a*-vocalism?
(2) Is there any evidence for the chronological priority of the word-final vocalization?

Let us start with the evidence from dialects with an *o*-coloring word-internal reflex. In chapter 3, we have seen that Lesbian poetry, just like Ionic-Attic, only attests forms in -αρ, -ατος. However, it is hard to exclude in general that literary Lesbian forms are epicisms, so that their

probative value is reduced considerably. Moreover, -αρ, -ατος could be due to a leveling of *-ορ, -ατος.

In section 1.3.2, we have discussed Ruijgh's opinion that the regular Mycenaean development was *-r̥ > -ορ. Ruijgh made this assumption mainly in order to explain the cases of *o*-vocalism in Mycenaean neuter *n*-stems and heteroclitics. But his scenario appeared to be rather doubtful, and it must be stressed that there is no direct evidence for heteroclitics in /-or/ in Mycenaean. In fact, García Ramón (1985: 212-16) has collected a number of Arcado-Cyprian and Mycenaean cases of word-final *-ar* < *-r̥*, of which the following are quite suggestive:[1080]

- Arcadian παρ 'by' < PIE *pr̥
- Myc. *a-mo-ra-ma* /āmōr-āmar/ 'day by day', Cypr. *āmar* 'day'
- Cypr. *autar* (= Hom. αὐτάρ)
- Myc. *A-RE-PA* /aleipʰar/ 'unguent'.[1081]

Even if we leave aside the two heteroclitics *āmar* and *A-RE-PA*, Arc. παρ and Cypr. *autar* still seem to speak in favor of an early word-final outcome *-ar* in the Achaean dialects.[1082] I am therefore inclined to agree with García Ramón on this point, but some caution is necessary in view of the limited amount of evidence.

There is, however, one potential problem with a pan-Greek outcome *-r̥ > -αρ: the Homeric neuters ἦτορ 'heart' and ἄορ 'sword'.[1083] Theoretically, these words could be vestiges of a dialect which had an *o*-colored reflex of word-final *-r̥ – but which dialect? If a change *-r̥ > -ar in Achaean dialects is accepted on account of the forms cited by García Ramón, one would have to assume that ἦτορ and ἄορ originated in an Aeolic dialect. But does -ορ in these forms really derive from *-r̥ in the first place?

9.3.1 ἄορ and ἦτορ

In Homer, ἄορ is attested in the NAs. (10x) and the Ds. ἄορι (12x, mostly as a dactyl with metrical lengthening).[1084] In most instances, the NAs. ἄορ is followed by another consonant, so that we could envisage to assume an older form *ἄωρ (cf. τέκμωρ). However, the colon ἄορ ὀξύ (3x) shows that the short suffixal vowel in the NAs. is real.

The etymology of ἄορ is unclear. The traditional derivation from ἀείρω as 'hanger' (Frisk, q.v.) is formally unattractive: a neuter zero grade root noun, with the semantics of an agent noun, would be unparalleled. Moreover, a pre-form with *-w-* is phonologically impossible if the Mycenaean PN *a-o-ri-me-ne* /ahori-menēs/ is related. The reconstruction *n̥s-r̥, based on the comparison with Lat. *ēnsis* 'sword', Skt. *así-* 'knife', and Palaic ḫasira-

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[1080] García Ramón (o.c. 215) actually speaks of a "morphonological shift", and assumes a rather complicated scenario involving sandhi phenomena. But whatever the underlying phonological processes, it seems clear that word-end was a conditioning factor for the outcome *-ar*.

[1081] In principle, *āmar* and the form /aleipʰar/ underlying *A-RE-PA* could owe their *-ar* to a generalization of the *a*-vowel in the oblique cases of neuter heteroclitics. But it should be taken into account that *A-RE-PA* (with underlying Ns. form) is a ligature, which probably came into being at a rather early date (García Ramón 1985: 212 with n. 62). It is therefore possible, though not certain, that *A-RE-PA* contains *-ar* as the regular outcome of *-r̥*.

[1082] Thus, it is incorrect that the only examples for the development of word-final *-r̥ are found among heteroclitic neuters of the type ἦμαρ, -ατος, as stated by Haug (2002: 51). If we derive Arc. παρ from *pr̥ by an early word-final vocalization, we have to assume that the preverb remained *pr̥- for a longer time, in view of Hom. προκείμενα < *pr̥-keimena (see section 7.2.6).

[1083] See e.g. Ruijgh (1961, 1985). García Ramón (1985: 214) suggests that their vocalism is secondary after the compounds in -ήτωρ, -άωρ. I doubt whether this can be correct, because the supposed analogy would have led to the introduction of a novel type (neuters in -αρ were a well-established category).

[1084] The hapax Ap. ἄορας (*Od.* 17.222), which is irreconcilable with an old neuter, must be a later deformation.

'dagger', is not much better: the different suffixation of the Greek word would remain unexplained, and the Sanskrit and Anatolian words remain problematic on their own account.[1085] Ruijgh's (1985: 153ff.) morphosemantic analysis of this pre-form *n̥s-r̥ as 'life-saver', from the root of νέομαι 'to return', seems rather far-fetched. Since we are dealing with an item of material culture, a borrowing seems the most likely possibility. This could at the same time explain the aberrant morphology and inflection of ἄορ. For these reasons, I will refrain from using ἄορ in this discussion.

This leaves us with the isolated ἦτορ, which only occurs in the NAs. in Homer (95x, mostly verse-final).[1086] Both the Classical prose form ἦτρον 'abdomen' < *ēt-r-o- and the outer-Greek cognates OIr. *inathar* 'entrails, bowels', OHG. *ādara* (f.) 'vein' contain the *r*-suffix, and point to a PIE stem *h₁eh₁t-r-. It is reasonable, then, to assume that the Epic form ἦτορ continues a pre-form PGr. *ētr̥. However, given that Epic forms with -ρο- like βροτός need no longer be explained as Aeolicisms (see chapter 7), I do not consider an Aeolic origin of ἦτορ to be very likely. Since we are dealing with a unique example for the alleged development *-r̥ > -ορ, I will not base any conclusions on ἦτορ.

The *a*-coloring of Cypr. *autar*, Arc. παρ, and possibly Myc. *āmōr-āmar*, *A-RE-PA* is opposed to the evidence for *o*-vocalism (or lack of evidence for *a*-vocalism) in word-internal position in these dialects. It therefore seems to follow that the vocalization in word-final position was earlier in this dialect group.

9.3.2 *-r̥ > -αρ in Ionic: chronology

Let us now turn to our second, chronological question: is it possible to assume that the vocalization of *-r̥ was a Pan-Greek development? As we have seen (section 1.2.3), García Ramón (1985: 212-3) argued that ἔαρ (Gs. ἔαρος) 'spring' < PGr. *wesr̥ proves the chronological priority of *-r̥ > -αρ over the intervocalic lenition *-s- > -h-. But Haug (2002: 51) rightly remarked that a development PGr. *wesr̥ > *wehr̥, with a later vocalization of *-r̥, cannot be excluded. The example does prove that *-r̥ vocalized before the loss of intervocalic *h. But if τραυλός does indeed derive from *trahuló- < *tr̥suló- (see section 9.1), this conclusion does not help us to chronologically distinguish the word-final and word-internal developments of *r̥.

Let us now consider the Homeric reflexes of the etymon *wesr̥. In fact, the evidence seems to presuppose that -αρ- had been generalized in the oblique cases at a rather early date. It is usually assumed that the PIE ancestor of ἔαρ was a heteroclitic neuter *ues-r, *ues-n-, but no individual IE language attests such a paradigm. Ved. *vasar°* (in *vasarhā́-*, of unclear meaning) and *básri* 'in the morning', *vāsará-* 'matutinal', Av. *vaŋri* 'in spring', Lat. *vēr*, ON *vár*, Arm. *garown*, all 'spring', simply point to a plain *r*-stem. An *-n-* is attested only in Slavic (e.g. OCS *vesna* 'spring'),[1087] but given that the *-r-* also appears in Lith. *vãsara* 'summer', one might rather assume that the Slavic *-n-* was taken from another lexeme, e.g. 'autumn' (OCS *esenь*, OPr. *assanis*). In my view, the pervasiveness of the *-r-* in derivatives, especially the locatives Ved. *básri*, Av. *vaŋri*, as opposed to e.g. Ved. *áhani* to *áhar* 'day', forbids us to reconstruct an oblique stem with *-n-. This leads to the following reconstruction of an acrostatic neuter *r*-stem in PIE:

> Ns. *ués-r   (ἔαρ, ON *vár*, Ved. *vasar°*)[1088]
> Ls. *ués-r-i 'in spring'   (Ved. *básri*, Av. *vaŋri*)
>   → *uesri-nó- 'spring-' (Lat. *vernus*, Hom. εἰαρινός).[1089]

[1085] For criticism, see de Vaan (*EDL* s.v. *ēnsis*, with refs.).
[1086] The Ds. ἦτορι is found only once in Pindar (fr. 52f.12) and is clearly secondary.
[1087] Ved. *vasantá-* 'spring' contains a different suffix.
[1088] For the derivation of ON *vár* from PIE *ués-r, see Gąsiorowski (2012).

The appearance of εἰαρινός in Homer shows that the generalization of -αρ- was early: there is no trace of the expected outcome ⁺⁺εἰρινός in Epic Greek, even if a putative |ᴮ ⁺⁺εἰρινὸς ὥρη 'spring season' would have yielded a convenient formula. Instead, we find |ᴮ εἴαρο[ς ὥρη 'in spring' (Hes. fr. 70.13), |ᴮ ἦαρος ὥρη (*h. Dem.* 174), and Homer only uses the first hemistich ὥρη ἐν εἰαρινῇ (4x), probably replacing earlier *ὥρη (ϝ)εἰαρινῇ (cf. Chantraine 1942: 128). All these formulae show a metrically lengthened form of the root. It seems to follow that *εἰρινός did not exist even in the earliest stages of the Epic tradition, and that *wehar, *weharinó- had been generalized already before Proto-Ionic. In view of the ample evidence for the prolonged retention of word-internal *r̥ in Epic Greek when this sound vocalized in the Proto-Ionic vernacular, this suggests that the vocalization of word-final *r̥ preceded that of word-internal *r̥.

Most of the further Homeric evidence for word-final -αρ consists of neuter heteroclitics, such as ὄνειαρ 'boon, refreshment', plur. ὀνείατα. In such paradigms, the ending -αρ may theoretically have introduced the vowel of the oblique suffix -ατ-. But in a number of other neuters which are only attested in the NAs. in -αρ, it is less easy to assume such analogical influence: εἶλαρ 'defense wall' < *wel-wr̥, ἄλκαρ 'defense', ὕπαρ 'waking vision', πῖαρ 'fat', ὄναρ 'bad dream'.[1090] It is not evident that all these forms were originally heteroclitic, or that their heteroclitic inflection was preserved long enough to influence the outcome -αρ. While ὕπαρ and ὄναρ remain in use in Classical prose, the forms εἶλαρ, ἄλκαρ, and πῖαρ are poetic and quite possibly Epic words. In Homer, εἶλαρ is formulaic, and a substitution of Epic *r̥ for -αρ is metrically impossible in any of its five instances. There is no trace of the supposed heteroclitic inflection in θέναρ 'palm of the hand' (in Homer only Gs. θέναρος *Il.* 5.339; the NAs. is attested in Pindar).[1091] Thus, these forms confirm the conclusion drawn on the basis of ἔαρ, ἔαρος: the vocalization to -αρ seems to have been earlier than that in word-internal position.

Finally, it deserves attention that the following adverbs or particles in -αρ are attested in Homer, and uncommon in later poetry:

εἶθαρ 'straightaway, forthwith' < PGr. *i̯eutʰ-r̥ (only 9x *Il.*, always with -αρ in the arsis in front of δέ).[1092]

ἄφαρ 'straightaway, forthwith; suddenly, swiftly' (34x, often in front of δέ).[1093]

αὐτάρ (particle) 'on the other hand' < PGr. *au-tr̥.

Their rarity in post-Homeric Greek suggests that these particles were traditionally limited to Epic Greek. However, there is no trace of Epic *r̥ in word-final position in these particles. This again suggests that the word-final vocalization *r̥ > -αρ had already taken place when Epic *r̥ arose as a consequence of the vernacular vocalization of word-internal *r̥.

9.3.3 ὑπόδρα and other instances of -ρα

Let us now return to Hoenigswald's idea (section 1.2.3) that ἄρουρα, τόφρα, and ὑπόδρα have the regular outcome of *-r̥ after a light syllable.[1094] Hoenigswald (1988: 201-02) noted that

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[1089] The Class. form ἠρινός is a contraction of *ἐαρινός.

[1090] Note, however, that ὄναρ has a plural ὀνείρατα, traditionally interpreted as a contamination between ὄνειρος and earlier *ὄνατα (Chantraine 1933: 218; Frisk, q.v.).

[1091] Cf. Risch (1974: 62). The word has to be compared primarily with OHG *tenar* 'id.'. But if Lat. *femur, -inis* 'thigh' is related, the word was originally a heteroclitic. A stem in -αρ- was also generalized in post-Homeric κύαρ, -αρος 'eye of a needle, orifice' (Hp.+).

[1092] For the etymology, see Willi (2002).

[1093] Nothing can be based on the derivative ἀφάρτερος 'swifter', of horses (*Il.* 23.311), which looks like a nonce formation.

[1094] Forssman (1980: 192 n. 63) speculated that δεῦρο 'hither, here' could be reconstructed as *de-wr̥t "hergewendet, turned hither". For the formation, he compares Avestan *fraorə̄t* 'willing' (< "turned forward"),

most instances of word-final -αρ have a heavy penultimate syllable, e.g. ἦμαρ 'day', φρεῖαρ 'source', ὄνειαρ 'benefit' (all Hom.+) < PGr. *āmr̥, *pʰrēwr̥, *onāwr̥. He remarked that all such examples have the heteroclitic suffix *-wr̥, and proposed that ἄρουρα 'farmland' also originally contained this suffix. Thus, ἄρουρα would derive from a PGr. neuter *aro-wr̥ (with the root of ἄροτρον 'plow', ἀρόω), and is supposed to show a conditioned development *-r̥ > -ρα after a light syllable.[1095] Hoenigswald adduced two other examples for this rule: ὑπόδρα '(looking) sternly' < PIE *upo-dr̥ḱ, and τόφρα 'up to that point, that long', which was reconstructed by Hamp (1983) as PIE *to-bʰr̥-t, literally "carrying that".[1096]

   We have already remarked that nothing can be based on Hoenigswald's scenario for ἄρουρα 'cultivated land', the reconstruction of which is much-debated. The Old Irish Ns. *arbar*, Gs. *arbe* 'grain, corn' < PCelt. *arawr̥, *arwens does indeed presuppose an original heteroclitic paradigm, but the most commonly accepted reconstruction of ἄρουρα is *h₂rh₃-ur-ih₂.[1097] Finally, if one assumes that ἄρουρα is an older collective, a thematicized derivative PGr. *aro-wr-o- cannot be excluded.[1098]

   Concerning τόφρα as the direct outcome of PGr. *topʰr̥: Hamp's reconstruction PIE *to-bʰr̥t is merely a possibility. Even if it is correct, one could assume that the final -α was taken over from another temporal adverb or conjunction after the loss of *-t, for instance from ἔνθα 'then; when', μίνυνθα 'a short while' or ἔπειτα 'then'. Alternatively, τόφρα could be the old neuter plural of a thematic formation *to-bʰr-o-. Finally, a regular -ρα < *-r̥ in τόφρα would be at odds with the reflex -αρ in adverbs like ἄφαρ and ἀτάρ.

   This leaves us only with ὑπόδρα: its reflex -ρα must be accounted for. Hoenigswald's explanation for the different treatment of ὑπόδρα and φρεῖαρ is ingenious, but it can hardly be correct. First of all, his scenario does not adequately explain the outcomes of word-internal *r̥ (see section 1.4.4). A further problem is the existence of counterexamples. Hoenigswald assumes that ἔαρ 'spring' < PIE *wes-r̥ introduced -αρ from other heteroclitic neuters. But as we have just seen, ἔαρ does not have heteroclitic inflection in Greek, and even the existence of a heteroclitic PIE avatar is doubtful.[1099] There are more counterexamples: the particles ἄφαρ and ἀτάρ (assuming that they derive from a pre-form in *-r̥), and notably δέλεαρ 'bait' (E., X., Pl.) < PGr. *gʷéle-wr̥ 'pierced (piece of meat)'.[1100] This word is synchronically isolated: it preserves the old meaning 'to pierce' of the PIE root *gʷelh₁- continued in βάλλω 'to throw, hit', and for this reason did not restore the labiovelar outcome δε- (as opposed to β- in βέλος, βέλεμνα).

   Let us now consider the actual attestations of ὑπόδρα. It only occurs in one single Epic formula ὑπόδρα ἰδών |ₚ 'looking sternly' (26x Hom., further only ὑπόδρα ἰδοῦσ' *Scut.* 445),

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Vedic adverbs in -vr̥t (*án-apā-vr̥t*), and Proto-Celtic *writ- 'against' < *wrt-(V). But since δεῦρο is also a normal Ionic-Attic prose word, I do not think that the *o*-colored outcome of *r̥ can be accounted for.

[1095] With a secondary transition to the feminine gender.

[1096] The -*t*-extension in composition was a regular addition to roots ending in a resonant or glide already in PIE: see the Vedic compounds in -*kr̥t-*, -*vr̥t-*, and especially *bhāra-bhr̥t* 'carrying a burden'.

[1097] Cf. Peters (1980: 143ff. and 198ff., following Solmsen), and see Widmer (2004: 45f.) on the semantic difference between Celtic 'grain' and Greek 'cultivated land'.

[1098] Beside Hom. ἀλείατα, Arm. *aliwr* 'flour' < *alēwr̥ < PIE *h₂leh₁-ur, we find ἄλευρον, plur. ἄλευρα 'flour' < *aleur-o-, as well as Myc. *me-re-u-ro* 'id.' < *mele-wr-o- "ground stuff". For such a thematicization, cf. νεῦρον, νευρά 'sinew, bowstring' < PIE *snéh₁-ur-o-m, *-éh₂-, where Greek does not preserve the older heteroclitic found in Av. *snāuuarə* < PIE *snéh₁-ur.

[1099] Moreover, if ἔαρ were an original heteroclitic, it would remain unclear, in Hoenigswald's scenario, why its treatment was different from that of ἄρουρα. An alternative suggestion of Hoenigswald's is a pre-form *wēs-r̥ (l.c., n. 15), but it would be *ad hoc* to assume a lengthened grade formation on the sole basis of Greek, given that the Homeric forms with εἰαρ- can be adequately explained by metrical lengthening in a tribrachic sequence.

[1100] Of course, it cannot be excluded that δέλεαρ was re-created beside the oblique stem δελέατ-. However, the fact that the oblique δελέατ- is first attested in post-Classical times does not render this option very attractive.

which recovers *upodra widōn.[1101] Since all other forms with etymological word-final *-r̥ ended up with -αρ already in Homer, it would be attractive to ascribe the different outcome in ὑπόδρα to the lost word-final consonant. It is impossible, however, to insert the original word-final stop *-k in this formula. For this reason, I propose that ὑπόδρα is the product of a form with Epic *r̥ in word-final position: *upodr̥k did not join the early vocalization of *-r̥, then developed to *upodr̥, and preserved in this form until it entered Epic Greek as part of the syntactic unit *upodr̥ widōn. This means that we have to assume the following chronology:

1. word-final vocalization *-r̥ > -αρ   (*upodr̥k)
2. loss of word-final consonants   (*upodr̥)
3. creation of the Epic formula   (*upodr̥ widōn)[1102]
4. vocalization of all remaining *r̥ > αρ in the vernacular,
       but preservation of the formula *upodr̥ widōn with Epic *r̥
5. vocalization of Epic *r̥   (ὑπόδρα (ϝ)ἰδών)

There is one complication with the reconstructed colon *upodr̥ widōn |ₚ: with its sequence of four light syllables, it would not fit the Epic hexameter. This means that we have to assume an old metrical lengthening. This may seem like an *ad hoc* assumption, but in fact, a rather similar case is provided by the pair ἀπειρέσιος ~ ἀπερείσιος 'countless, unlimited'. Both forms are adaptations of a pre-form *n̥-per-eto- "which cannot be traversed"[1103], which did not fit in the hexameter:

- ἀπειρέσιος 4x, of which 3x before |ₚ
- ἀπερείσιος 13x, only |ₕ ἀπερείσι' ἄποινα and |ₕ ἀπερείσια ἔδνα 'immense dowry'.

It is true that ἀπειρέσιος |ₚ is one single word, whereas ὑπόδρα ἰδών |ₚ is a syntagm, but metrical lengthening could be applied to syntagms too: in Στυγὸς ὕδατος, Στυγὸς ὕδωρ (used between |ₚ and |ᵦ), the forms ὕδωρ and ὕδατος would not require metrical lengthening on their own account. If we accept that *upodr̥ widōn could be treated as a single unit for metrical purposes, metrical lengthening of the second syllable was the only way to use this syntagm in the Epic hexameter. Apart from ἀπειρέσιος, we could then compare other cases of seemingly old metrical lengthening in the second arsis:

- ἠγάθεος |ₚ (11x, always in this position, traditional epithet of Pylos)
- ὥρῃ ἐν εἰαρινῇ |ₚ (4x, beside 2x verse-final |ᵦ εἰαρινῇσιν, -οῖσιν)
- νύκτα δι' ἀμβροσίην |ₚ (5x, but also frequent in other positions, see section 7.2.3).

Thus, I tentatively suggest to explain ὑπόδρα ἰδών as containing the reflex of Epic *r̥ in a syntagm.[1104] As far as I am able to see, this is the only way to account for the outcome -ρα < *-r̥T in ὑπόδρα, as opposed to -αρ < *-r̥ in all other examples (and word-internal -αρ- in the vernacular). The loss of word-final stops was very early (it has left no prosodic or

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[1101] The Hellenistic poets Callimachus and Nicander attest the secondary reshaping ὑποδράξ 'id.'.
[1102] For semantic reasons, one could assume that the original shape of the formula was *upodr̥ dr̥kōn (see section 8.3.1 on the semantics of the root δερκ-).
[1103] For this semantic interpretation and the deverbal derivation of ἀπειρέσιος, ἀπερείσιος, see Vine (1998: 26ff.).
[1104] It is not possible to explain τόφρα in the same way as ὑπόδρα. Given that the adverb is almost exclusively verse-initial in Homer, a supposed *topʰr̥ would scan regularly in an acephalic verse, as attested for verse-initial ἐπεί (Il. 23.2, Od. 4.13, 8.452, 21.25, 24.482, in all these cases followed by δή). But the acephalic use of ἐπεί (745x) is clearly incidental, whereas τόφρα is exclusively verse-initial. Moreover, we expect the outcome of Epic *r̥ to be colored by a preceding labial stop (cf. πρόσω, Ἀφροδίτη). It is better to regard the etymology and precise reconstruction of τόφρα as uncertain.

phonological traces in Epic Greek),[1105] and if the above scenario for ὑπόδρα is accepted, it furnishes a strong piece of evidence for a still earlier, Pan-Greek vocalization of word-final *-r̥.[1106] It also seems likely that initial digamma was still in place when Epic *r̥ vocalized: one would expect a *upodr̥ idōn to have vocalized as ⁺⁺ὑπόδαρ ἰδών. This part of the chronology is corroborated by the o-coloring of Epic *r̥ in Hom. ῥοδόεντ- < *wr̥dowent-.

9.4 Uncertain evidence for -αρ- and -ρα-

The forms in this section can be left aside from the compelling evidence for the development of *r̥. In most cases, previous authors have proposed a pre-form with *r̥. Etymologies with an obvious weakness are not discussed separately;[1107] neither are forms which can be due to secondary ablaut.[1108] I will first discuss forms that are too ambiguous to serve as evidence, and then discuss etymologies that are in my view untenable. The material is treated in alphabetical order.

9.4.1 Ambiguous or uncompelling evidence

Vine (1998: 81-2) has derived the nominal form **ἅρπαξ** 'rapacity; rapacious, robber' (Hes.+) and the denominative verb ἁρπάζω 'to rob, seize, plunder' (Il.+, plus further derivatives) from a compound *sr̥-ph₂g-. He proposes (o.c. 48-9) to connect *sr̥- with αἱρέω 'to take, seize', which in his view can be reconstructed as *sr̥-i̯e/o- which was influenced by ἀγρέω 'to seize'.[1109] But since Vine leaves open the analysis of the second element *-ph₂g- of this compound, we have to exclude ἅρπαξ from the evidence.

The substantive **ἀτραπός ~ ἀταρπός** 'trail, footpath' has no clear etymology. Chantraine (DELG s.v. ἀτραπός) remarks that the connection with τρέπω 'to direct, turn towards', ἀτραπός denoting a "chemin qui ne tourne pas", is folk-etymological. Both Frisk and DELG (s.v. ἀτραπός) assume that the word consists of copulative ἀ- and the root of τραπέω 'to tread grapes', in which case the original meaning would be "trodden path". It is problematic, however, that copulative ἀ- is normally used to form possessive compounds of the type ἄλοχος 'spouse' < *"having the same bed". Apart from this, the passive meaning 'trodden' would require a formation in *-tr̥p-tó-, because τραπέω is a transitive verb. Beekes (EDG s.v. ἀτραπός) suggests that the variation ἀτραπός ~ ἀταρπός is a substrate phenomenon, but his comparison of Ru. tropá 'path' is nothing more than a guess.

Previous treatments of this word have left the variation -ρα- ~ -αρ- unexplained. The prose form was clearly ἀτραπός (25x up to Plato in the online TLG), while the variant ἀταρπός (even less common: 5x) is limited to poetic authors.[1110] With one exception, ἀταρπός

[1105] It has been supposed that the adverbs in -δαπός contain a trace of of word-final stops (cf. Beekes EDG s.v. ἀλλοδαπός), assuming that -δ- would have originated in the neuter pronoun PGr. *ali̯od. But as long as the origin of the suffix -δαπός itself remains obscure, the idea remains unprovable.

[1106] On the basis of ὑπόδρα, Barnes (2011: 2 with n. 6) recently claimed that the word-internal development *r̥ > -ρα- pre-dated the loss of word-final stops: "the resolution of syllabic r̥ is quite early within the relative chronology of Common Greek sound changes: it must precede, for example, the loss of final consonants, which have disappeared without any prosodic trace." But this argument depends on two crucial premises: (1) that the word-internal development was *r̥ > -ρα-, and (2) that word-final *-r̥ > -αρ is part of the same development. Both assumptions are incorrect.

[1107] I mean words such as (1) πάρνοψ 'grasshopper', Lesb. Boeot. πόρνοψ. This word clearly belongs to the substrate in view of its suffix, its meaning, and because of the variants with initial κ- (cf. Beekes EDG s.v.). This means that -αρ- / -ορ- is not necessarily due to a different vocalization 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 ὀρόδαμνος (Thphr., Call., Nic.).

[1108] Such as δαρτός beside δέρω 'to flay', σπαρτός beside σπείρω 'to sow', etc.

[1109] Itself, ἀγρέω can be analyzed as a denominative verb which was derived from compounds in *-agro- 'seizing', from the root of ἀγείρω 'to gather' (cf. Tucker 1990: 168).

[1110] Hom. (Il. 17.743, Od. 14.1), Alcm. (fr. 102), Parm. (fr. 2) and Empedocles (fr. 112).

is found in verse-final position of a hexameter. The same variation appears in ἀταρπιτός 'id.' (only *Il.* 18.565, *Od.* 17.234, *h. Ap.* 227, Parm. fr. 20) beside ἀτραπιτός (only *Od.* 13.395). These forms are based on the more usual word ἀμαξιτός (adj.) 'traversible by wagons', (subst.) 'carriage-road' (*Il.*+, qualifies ὁδός in Pi. *Nem.* 6.54, X. *Anab.* 1.2.22). Again, the normal epic form has -αρ-, while the hapax ἀτραπιτός can be considered a nonce formation, created under the influence of the vernacular form ἀτραπός. If ἀτραπός contained the older vocalization, it is not evident why it would be shunned by hexameter poets. *DELG* remarks that ἀταρπός is preferred for metrical reasons, but a dactylic form ἀτραπός would not be inconvenient by definition. We may therefore conclude that ἀταρπός is the older Ionic form. But if so, how did ἀτραπός come into being?

I propose that ἀτραπός was originally an adjective of the type ἄγραφος 'unwritten' with privative ἀ-, and to reconstruct a pre-form *n̥-tr̥p-o- 'untrodden' where *tr̥p- would be the old zero grade of τραπέω 'to tread (grapes)'. Departing from collocations like ἄτραπος ὁδός or ἄτραπος κέλευθος 'untrodden path', the oxytone accent of ἀτραπός can be ascribed to its substantivization. The meaning 'untrodden' excellently suits the attestations of the word. In Herodotus and Thucydides, ἀτραπός exclusively refers to the shortcut at Thermopylae by means of which the Persians take the corridor. This ἀτραπός was probably more like a trail than a path. In Homer, we find κατὰ παιπαλόεσσαν ἀταρπόν 'along a rugged path' and τρηχεῖαν ἀταρπόν 'rough path'. The Epic forms ἀταρπός and ἀταρπιτός would then contain the regular Proto-Ionic development of a pre-form *n̥-tr̥p-o-, whereas the prose form ἀτραπός would have to be due to influence of the verb τραπέω.[1111] In τραπέω itself, -ρα- would have to be due to an unattested full grade *trep-. It must be admitted, however, that the assumed influence of τραπέω on the lexicalized item ἀταρπός remains rather hypothetical. It is therefore better not to base any conclusions on ἀτραπός ~ ἀταρπός.

The root vowel slot of **εἵμαρτο** 'obtained by lot or fate' (Hom.+) could in principle be secondary after μείρομαι and ἔμμορε 'id.' (both Hom.).[1112] The same analogy can be invoked for the Aeolic pendant ἐμμόρμενον (Alc.), which may be a replacement of the regular Aeolic reflex with -μ(β)ρο-, or a more direct reshaping of the active ἔμμορε. But it would be attractive, in view of the reflex of compensatory lengthening and the initial aspiration in εἵμαρτο, to assume that this form represents the regular outcome of *hehm̥rto.

In lexicographical sources, two variants with a sequence -μβρα- are attested: ἐμβραμένα· εἱμαρμένα (*EM* 334.10 = Sophr. fr. 119) and ἔμβραται· εἵμαρται (Hsch.).[1113] Both are quoted as Doric in Frisk, because they are ascribed to Sophron, a writer of prose dialogues in a Sicilian Doric dialect (Syracuse, a colony of Corinth). The independent evidence of two glosses cannot be lightly dismissed. However, since they are of non-Ionic origin, they are of no consequence for the present thesis that the Ionic outcome is -αρ-. It is not easy to evaluate the evidence of the Doric dialects of Magna Graeca generally: there is some evidence for both -ρα- and -αρ- (see section 3.3).

καρπός 'wrist' (Hom.+) has been etymologically connected with the Germanic strong verb *hwerban- 'to turn' (Goth. *ƕairban* 'to move around, dwell', ON *hverfa* 'to turn around; disappear', OE *hweorfan* 'to turn, travel, move around, change', etc.).[1114] The phonological side of this equation is unproblematic (*k^w … p dissimilated to κ … π in Greek, whether *k^w derives from PIE *k^w- or from *$ḱm̥$-),[1115] but the semantic connection is not extremely

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[1111] In poetry, ἀτραπός is attested in Semonides (fr. 14), Pindar (fr. 52k about a shaded, dark path), Empedocles (fr. 24), and in Aristophanes (5x). Furthermore, a denominative verb ἀτραπίζω occurs once in Pherecrates (fr. 26 Kock).

[1112] In Hom. εἵμαρτο occurs 3x in an almost identical line: νῦν δέ με λευγαλέῳ θανάτῳ εἵμαρτο ἁλῶναι (*Il., Od.*), and νῦν δ' ἄρα σ' οἰκτίστῳ θανάτῳ εἵμαρτο ἁλῶναι (*Od.*)

[1113] The gloss βεβραμένων, cited in the etymological dictionaries, is not retained in Latte's edition of Hsch.

[1114] For the connection, see Pokorny s.v.

[1115] See section 10.4.4 and Schwyzer (1939: 302) for the evidence.

compelling. For this reason, καρπός 'wrist' is at best a possible example of the vocalization to -αρ-.

The Epic adjective **καρπάλιμος** 'agile, swift' contains a suffix -άλιμος which, like -αλέος, is synchronically one of the secondary Caland suffixes (see Risch 1974: 105).[1116] Even if the origin of -άλιμος is unclear, it could be suspected that Epic Greek once had an adjective $*k^werp$-u-, $*k^w\mathring{r}p$-$éw$-, to be compared with ON *hverfr* 'quick'. While the connection is semantically plausible, the lack of a direct formal counterpart suffices to eliminate καρπάλιμος from our compelling evidence. Moreover, the vowel slot of the reconstructed root $*k^werp$- is identical to that of καρπάλιμος, so that the reflex -αρ- may have been analogically restored in the assumed ablauting *u*-stem adjective (see section 4.1.1).

The present **κάρφω** 'to dry up, wither, wrinkle', especially of the skin, is first found in Hesiod (*Op*. 7 and 575); its sigmatic stems are attested in the *Odyssey* (13.398 and 430), and the verb remains current only in poetry. Derivatives are κάρφος (n.) 'arid stalk, twig, chip of wood, halm, hay' (Ion.-Att.), καρφηρός 'made of dry straws' (E. *Ion* 172), κάρφη 'hay' (X.), and notably καρφαλέος 'arid' (*Il*. 13.409, *Od*. 5.369) which clearly influenced αὐαλέος and ἀυσταλέος 'id.'.[1117] Chantraine (1933: 253f.) suggests that καρφαλέος was derived from κάρφος, but given the concrete lexicalized meanings of κάρφος, this is not evident. One might therefore speculate that καρφαλέος replaces an older *u*-stem adjective, which could also underlie the gloss καρφύνεσθαι· ξηραίνεσθαι, φθείρεσθαι 'to dry up, wither' (Hsch.).

Letoublon & de Lamberterie (1980) compare κάρφω with Lith. *skrẽbinti* (tr.) 'to dry, parch' (and many other meanings like 'to crackle'), *skrèbti* (intr.) 'to dry up, become parched or roasted, develop a crust'.[1118] This comparison is excellent both semantically and formally, except that it would entail, in their reconstruction $*kreb^h$-, a PIE root with a voiceless and an aspirated stop. Given that the root has *s*-mobile, this problem may be solved by positing $*(s)g^hreb^h$-, with Grassmann's Law in Greek. Clear cognates of the Baltic verbs are found in Germanic: ON *skarpr* 'shriveled' and *skorpinn* 'wrinkled', from a root which acquired its -*p*- by degemination from $*$-pp-, which developed from $*$-b^hn- by Kluge's Law. In his recent study of the Germanic *n*-stems, Kroonen (2011: 108) compares Lith. 1s. *skrembù* directly with OE *scrimman* 'to shrivel', MHG *schrimpfen*, *schrumpfen* 'to shrink' < $*skremb$-, $*skrump^p$-, and reconstructs a nasal present $*skr\mathring{m}b^h$-$n(é)h_2$-.

Since the reconstructed root $*(s)g^hreb^h$- would have a full grade II, this etymology could furnish additional evidence for a regular vocalization $*\mathring{r} > $ -αρ- in Ionic. There are, however, several problems of detail. First of all, the etymology would entail the reconstruction of a zero grade thematic present $*g^h\mathring{r}b^h$-e/o-, for which there is only limited evidence in Greek.[1119] Furthermore, if we reconstruct an older *u*-stem adjective $*$καρφύς, this

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[1116] In Homer mostly adverbial καρπαλίμως, which often accompanies verbs denoting an action involving the hands or feet. The adjective only occurs in the Dp. with ποσί or πόδεσσι.

[1117] The neuter καρφος is also attested in Cyrenaean, a descendant of Laconian. See section 3.3.1 for further possible evidence for αρ < $*\mathring{r}$ in this dialect.

[1118] "lit. *skrèbti* (*skrembù*, *skrebaũ*) 'eine dünne Kruste ansetzen, sich mit einer solchen überziehen; steif werden, gefrieren; (von Braten, Gebackenem) geröstet, braun werden, sich bräunen, anbrennen, brenzlig werden' *skrẽbinti* 'trocknen, dörren; bräunen, rösten; zum Knistern, Rascheln, Klappern bringen; (intr.) rasseln, klappern, rascheln, knistern' *skrebìnis* 'etwas Raschelndes' (…)", Fraenkel (*LEW* s.v. *skrebéti*, 'rauschen, rasseln, knistern'). Further possible relatives are Lith. *skir̃bti*, 1s. *skirbstù* 'to become sour, shrink, become lean' and *skur̃bti*, 1s. *skurbstù* 'to become poor, become lean, shrink'.

[1119] According to Letoublon & de 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 τρέφω, as also happened in cases like δείκνυμι (beside δεῖξαι, cf. Cret. δικνυμι), ἔρδω (beside ἔρξαι, cf. Myc. *wo-ze*). It can be objected, however, that there is not much evidence for the so-called *tudáti*-type in Greek, and that a case like τρέχω 'to run' cannot have taken its vocalism from the aorist. See the discussion in section 3.2.

can hardly be the outcome of a $*\acute{g}^h r\acute{e}b^h\text{-}u\text{-}$, $*\acute{g}^h\rho b^h\text{-}\acute{e}u\text{-}$ because such a paradigm would be expected to yield $^{++}$κραφύς after leveling of the full grade slot (see section 4.4). Perhaps, then, the reconstructed *καρφύς is best derived from the intransitive middle κάρφομαι 'to dry up' (Archil.+), in which case the active κάρφω would be a secondary oppositional transitive. Since the oldest Greek situation is hard to reconstruct, it is better not to base any conclusions on κάρφω and καρφαλέος.

The neuter **κράνος** 'helmet' (Hdt., Att.) is the usual word for 'helmet' in Classical Greek, where it replaced the various Homeric terms (see *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 $*\acute{k}\rho\text{-}n\text{-}es\text{-}$ or $*\acute{k}\rho\text{-}ne\text{-}s\text{-}$ *'horn' > *'crest' > 'helmet'.[1120] 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 suffix -n-es-). In combination with the absence from Homer, all details point in the direction of a borrowing.

κρήνη 'source, well' (non-Ionic κράνα) has no clear outer-Greek comparanda. Within Greek, κρήνη could be connected with the poetic word κρουνός 'source, stream', but only if we depart from pre-forms $*k\rho sn\bar{a}\text{-} > *krahn\bar{a} > $ κρήνη and $*krosno\text{-} > $ κρουνός (both with 1st Compensatory Lengthening).[1121] The form κρουνός could then be compared with a Germanic word for 'wave, flood', ON *hrǫnn*, OE *hræn* < PGm. $*hrazn\H{o}\text{-}$ (see Frisk s.v.). However, Lobeck (see *DELG* s.v. κρουνός) already pointed at the possibility that κρήνη reflects a pre-form $*kr\bar{a}hn\bar{a} < *\acute{k}rh_2s\text{-}n\text{-}$ 'head'. For the semantics, he compared Lat. *caput fontis* and Gr. κεφαλή in the meaning 'fountain'. Indeed, Hesychius also attests a gloss κράνα· κεφαλή. Although Lobeck's proposal would preclude the connection with κρουνός, it could well be correct.[1122]

The PIE root $*per\acute{k}\text{-}$ furnishes a case of -ρα- in the gloss **πρακνόν**· μέλανα (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. *Cyneg.* 5.22). The underlying formation can be compared with Ved. *pŕ́śni-* 'speckled' and OHG *forh(a)na* 'trout', both of which continue PIE $*pr\acute{k}\text{-}n\text{-}$, and it seems attractive to reconstruct πρακνόν as $*pr\acute{k}\text{-}n\acute{o}\text{-}$. 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- < $*\rho$ in the Ionic-Attic vernacular, because the origin of the gloss is unknown. It is possible, for instance, that πρακνόν was taken from a West-Greek dialect which had -ρα- as the regular reflex. Furthermore, the full grade II attested in another gloss, πρεκνόν· ποικιλόχροον. ἐλαφρόν (Hsch., perhaps to be corrected to ἔλαφον 'deer'), deserves to be mentioned.

We further have to discuss the somewhat more obscure gloss **πράκες**· (…) ἔλαφοι 'deer' (Hsch.). Schindler (1972: 34, 36) compared πράκες with the rare word πρόξ, -κός 'deer' and reconstructed an ablauting root noun $*por\acute{k}\text{-}$, $*pr\acute{k}\text{-}$ that would have been leveled,

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[1120] Nussbaum also discusses the gloss κάρνος· φθείρ 'louse', βόσκημα, πρόβατον 'piece of cattle' (Hsch.), which may derive from $*\acute{k}\rho\text{-}no\text{-}$ and offers a much more likely continuant of the 'horn'-word. Its formation can be reconciled with the *n*-stems attested elsewhere, and the meaning 'cattle' fits quite well (cf. OHG *hrind* 'cow'). Still, as a gloss, this cannot be included among the primary evidence either.

[1121] This reconstruction is compatible with the Aeolic form κράννα (Alcaeus *fr.* 150.5 LP), but the interpretation of the context is unclear, so that the meaning of κράννα cannot be ascertained. Moreover, κράννα is also compatible with a pre-form PGr. $*kr\bar{a}hn\bar{a}$.

[1122] If κρήνη indeed derives from $*krahn\bar{a} < *k\rho sn\bar{a}\text{-}$, it could provide further evidence for an early, pan-Greek vocalization of the syllabic liquids before a tautosyllabic consonant. In this connection, note the following remark by Beekes (*EDG* s.v. κρήνη) about the reconstructed pre-form $*k\rho sn\bar{a}\text{-}$: "but note that all dialects have the vocalization *-ra-*, so the etymon probably did not have vocalic $*\rho$. Therefore, the explanation remains uncertain."

after the vocalization of the weak stem, to *prok-, *prak-, and later to non-ablauting πρόξ. However, the assumed analogy is questionable: one wonders why the vocalized weak stem *prak- was not leveled to *park- on the model of the strong stem *pork-. If we consider the attestations more closely, it appears that before the end of the Classical period, πρόξ is a hapax in Homer (ἠδὲ πρόκας ἠδὲ λαγωούς 'deer and hares', *Od.* 17.295), and the same applies to the derivative άδ-stem προκάς, which only appears in προκάδων ἀκόρητοι 'whose desire for deer cannot be satisfied' (*h. Aphr.* 71). It is attractive to assume that both πρόξ and προκάδ- are the regular outcomes of pre-forms with *pr̥k- in Epic Greek, with -ρο- conditioned by the preceding labial stop. The retention of Epic *r̥ in *pr̥k- can be motivated, because the normal word for 'deer' in Ionic-Attic was ἔλαφος. Within this framework, the origin of πράκες must remain obscure, but again, it cannot be excluded that the word is of non-Ionic-Attic origin. Similarly, the gloss πόρκας· ἐλάφους (Hsch.) does not prove the presence of *o*-vocalism in the root noun, because it may stem from an Achaean or Aeolic dialect (from the latter if we assume analogical leveling of the full grade slot).

πραπίδες 'midriff', whence 'heart, soul' is attested in Homeric formulae like |$_T$ ἰδυίῃσι πραπίδεσσι and ἧπαρ ὑπὸ πραπίδων |$_P$. The word remained without an etymology for a long time,[1123] but a recent proposal by Balles (2002) deserves close consideration. She 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 to derive "lexikalisierte Konkreta" (e.g. νυκτερίδ- 'bat', "nightly creature" ← νύκτερος 'of the night', νεβρίδ- 'fawnskin' ← νεβρός 'fawn', or παρηΐδ- 'cheekpiece' ← παρειαί 'cheeks'). Therefore, a singular *πραπίς would have to denote an individual, concrete item pertaining to (made from, located in) the rib-cage. Balles' further argument is too complicated to be repeated here in sufficient detail. In my view, the simplest scenario would be that the singular *πραπίς denoted some specific organ located in the chest, the identity of which cannot be recovered anymore. The πραπίδες may have denoted the collection of such organs, and thence also the 'chest' or 'rib-cage' as a whole.

This *πραπό- can be compared to Ved. *párśu-* 'rib, sickle' (AV+), *pārśvá-* 'flank or side of an animal' (RV+, cf. Oss. *fars* 'side, flank'), Av. *parəsu.masah-* 'having the size of a rib', *parəsui-* 'rib; area of the ribs', which presuppose a PIE substantive *perḱ-u-. A derivative *pr̥ḱ-u-ó- 'consisting of ribs' (cf. the Vedic *vr̥ddhi*-derivation *pārśvá-*) would now immediately yield the required pre-form *πραπό-, provided that *-ḱu̯- resulted in a non-geminated -π-. As Balles points out, there is only one relatively secure instance of the geminate treatment -ππ-: ἵππος 'horse' < *h₁eḱu̯o-. But in view of the well-known problems with ἵππος (e.g. the *i*-vocalism, dialectal forms with -κκ-), she argues that the outcome of intervocalic *-ḱu̯- in Greek may have been -π- after all. Alternatively, she suggests that a pre-form *πραππό- may have been reduced to *πραπό- as a result of dissimilation.

Although Balles' attempts to solve the problem of -π- < *-ḱu̯- are in my view not entirely satisfactory, her etymology is semantically attractive and has to be taken seriously. As an alternative solution, one could think that *-ḱu̯- was retained longer intervocalically (in

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[1123] Cf. Frisk's judgment (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. *kr̥p-* 'shape, appearance'), if these derive from a pre-form *kʷrep- at all, it may be objected that a labiovelar dissimilation *kʷ...p- > *k...p- would be expected in first millennium Greek (see Schwyzer 1939: 302).

ἵππος) than after *r̥ (in πραπίδες). There are more environments where *r̥ did not behave like a normal vowel (cf. the reduction of *-tw- to -t- only before *r̥, section 2.5). Thus, it would be conceivable that a pre-form PIE *pr̥ḱṷ-ó- 'consisting of ribs, rib-cage' would yield pre-alphabetic *pr̥kʷó-, whence *pr̥kʷíd-es. Since πραπίδες only occurs in poetry and in particular in Epic Greek, a pre-form with Epic *r̥ could be considered. It is problematic, however, that we do not find an o-colored outcome of Epic *r̥ after a labial consonant (see chapter 7). It is also somewhat problematic that πραπίδες generates a heavy scansion of a preceding short vowel when it is preceded by a preposition (ὑπὸ πραπίδων, ἀπὸ πραπίδων). Thus, in view of the large number of problems involved, it is better not to base any conclusions on πραπίδες.

The verb τρώγω 'to gnaw, graze, eat' has an aorist **τραγεῖν** which is attested only a few times in Attic comedians, mostly as a prefixed form (ἔντραγε, also with παρα-, δια-, κατα-). The relation between the vocalism of present and aorist stem cannot be understood in Indo-European terms. We could assume that τραγεῖν was influenced by the aorist φαγεῖν 'to eat', which also occurs with prefix κατα- and is an inherited formation (Ved. *bhaj-* 'to distribute, share food').[1124] The relation between τραγεῖν and τράγος 'he-goat' is unclear.

9.4.2 Irrelevant words; untenable and doubtful etymologies

The etymology of στεροπή, **ἀστραπή** 'lightning', ἀστράπτω 'to flash' and related forms has been discussed by Beekes (1987). He reaches the conclusion that the word cannot be Indo-European, in view of the interchange ἀ- ~ Ø, which cannot be explained in Indo-European terms. It is found in ἀστεροπή ~ στεροπή (both Hom.) and more marginally in ἀστράπτω (general Ion.-Att.) ~ στράπτω (only S., A. R.). Beekes convincingly argues against the earlier reconstruction as PIE *h₂ster-h₃okʷ-eh₂ 'star-eye', which is semantically not evident and leads to phonological problems.

Even if the word is a borrowing from e.g. Pre-Greek, one could think that it was borrowed in a form with *r̥. In that case, (ἀ)στεροπή may be left aside, and the following dialectal forms may be compared: ἀστραπή, the glosses στροπά· ἀστραπή. Πάφιοι (Hsch., Ael. Herod.), στορπάν· τὴν ἀστραπήν (Hsch., Ael. Herod., without dialect indication), and epigraphic Arcadian Gs. Διος Στορπαο (IG V(2) 64, 5th c.). But this remains mere speculation.

It has been assumed that **ἄτρακτος** 'spindle; arrow' (general Ion.-Att.) contains the reflex of a zero grade root *tr̥k-, which is also supposed to underlie ἀτρεκής 'precise' (Hom.+), see Frisk s.v. ἄτρακτος. Apart from the fact that such a root is not attested anywhere (as Frisk admits), it cannot be used as evidence here for various reasons. First, there is no good outer-Greek comparandum for ἄτρακτος. 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 *terkʷ-, which contained a labiovelar.[1125] Secondly, there is a variant ἄδρακτος (Hsch.), which could point to Pre-Greek origin (thus Beekes, EDG s.v. ἄτρακτος). Finally, the word-formation is unclear: copulative ἀ- makes no sense. Given that the word denotes a concrete object, for which the various IE languages have different names, a substrate word seems most probable.

Since Prellwitz, the gloss **βράκανα** 'wild herbs or vegetables' (Pherecr., Hsch.) has been compared with Germanic and Slavic words for 'root, carrot' (OHG *moraha*, G. *Möhre* < PGm. *murh-, PSl. *mъrky). Note, however, that the Greek meaning is quite different from that of both Northern European words, that the formation of βράκανα is different, and that it is very weakly attested. If the comparison is correct at all, we could be dealing with a European substrate word. Beekes further mentions Furnée's (1972: 330) assumption of a Pre-

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[1124] The *LIV²* reconstructs a PIE root a root *trh₃g- 'zernagen' on the basis of Hackstein's (1995) comparison with Toch. B *treṣṣäṃ* 'chews'.

[1125] Chantraine (1933: 301, cf. also *DELG* s.v.) rightly judges the etymology to be "douteux".

Greek word (he compared βάκανον 'cabbage'), and *DELG* (s.v.) only remarks that there is no established etymology.

The adjective **ἐπικάρσιος** 'transverse, crosswise, at a right angle' (*Od.* 9.70, of ships; further Hdt.+) can hardly be derived from a phrase ἐπὶ καρσί (as per Bechtel 1914: s.v.). As stated by *DELG* (s.v. ἐπικάρσιος), it is better derived from the root **ker(t)-* 'to cut'. The semantic motivation is obvious: cutting is done at a transverse angle with regard to the object to be cut. Semantic parallels derived from the same root are Lith. *skeȓsas* 'crosswise', Ru. *čérez* 'across'. Since the suffix -ιος must be a later addition, ἐπικάρσιος implies the existence of a pre-form **-καρτ(ο)-* < **-k̥rt-(o-)* or **-k̥r-t(o)-*. The verbal root κερ- is attested in Greek (κείρω 'to shave', διακέρσαι 'to cross'). It is therefore possible that -αρ- contains the restored vowel slot of the verb, so that ἐπικάρσιος cannot be used as evidence for the regular development.

Although the formation of **εὐτράπελος** 'witty' is not entirely perspicuous (cf. a similar suffix in εὐπέμπελος and εὐτρόχαλος), the semantic interpretation as "sich leicht wendend" (Frisk, based on the German translation 'gewandt') and the derivation from the thematic aorist stem τραπε/ο- 'to turn, direct' (Chantraine 1933: 243) are acceptable. Therefore, the form does not provide direct evidence for the regular outcome of **r̥*.

The adjective **καθαρός** frequently means 'pure, clean, proper'. It has a dialectal variant κοθαρός, attested in Lesbian (Alc. fr. 38) and in various West Greek dialects.[1126] Trying to revive Brugmann's old connection with Vedic *śithirá-* 'loose', Peters (1993a: 95-101) reconstructs a PIE pre-form **k̑r̥th₂r̥-ó-* (sic, with prevocalic *r̥*).[1127] He further assumes an inherited present **k̑roth₂r-i̯é/ó-* on the basis of a comparison between the hapax *śratharyáti* (RV 10.77.4, of the earth) and Gr. καθαίρω 'to purify, clean'. He explains the Lesbian and West Greek variant κοθαρός from a different pre-form PGr. **k̑roth₂-ro-* > Pan-Greek κοθαρός, 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.

I have severe problems with almost every assumption made by Peters. Let me first address some issues of reconstruction. First, a pre-form **k̑r̥th₂r̥-ó-*, which according to Peters (o.c. 97) was built on an abstract noun **k̑r̥th₂r̥* 'Lösung', is untenable: PIE did not have a separate phoneme **r̥*, and certainly not in prevocalic position.[1128] The hapax *śratharyáti*, the only reason to reconstruct an inherited *yod*-present, occurs right after *vithuryáti* 'totters, shakes' in the previous *pāda* and is therefore best analyzed as a nonce formation. Vowel assimilations are never a real solution for phonological problems in Greek, and mostly boil down to an *ad hoc* hypothesis.[1129]

On the other hand, there are grave semantic objections. Peters assumes that 'loose', 'to loosen' are the original meanings of καθαρός and καθαίρω, leading via 'to dissolve' to 'to clean, rinse'. For this shift of meaning, he compares Hom. λῦμα 'dirt', which is supposed to be related to λύω 'to loosen'. However, Homer uses καθαρός three times as a substantive in the meaning 'open or cleared space'.[1130] For example, *Il.* 8.490-1:

νόσφι νεῶν ἀγαγὼν ποταμῷ ἔπι δινήεντι,

[1126] The variant κοθαρος is attested epigraphically in κοθάρσι τελείαι 'with complete purification' (Olympia, *IvO* 7.2), ἔρχομαι ἐκ κοθαρ<ῶν> κοθαρά (*IG* XIV 641, Thurii, 4th c. BC), χοὶ μεστὼς τὼς χοῦς κριθᾶς κοθαρᾶς δοκίμας, hοίας κα hα γᾶ φέρει (*Tab. Heracl.* [= *IG* XIV 645] I, 103) and ἀνκοθαρίοντι (ibid. I, 132).

[1127] Mayrhofer (*KEWA*) rejects the comparison with καθαρός, but in *EWAia* retains the comparison with Gmc. **hreddan-* 'save' (OE *hreddan*, G. *retten*) as a possibility.

[1128] It would be much more natural to assume a pre-form **k̑r̥th₂-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 his view, **-th₂V-* would yield -θV-, while **-th₂C-* would result in -ταC-.

[1129] See van Beek (2011a) for a discussion of a number of frequently cited examples of the phenomenon.

[1130] "clear of objects, free", "open space" (*LSJ*, mg. 3, suggesting that the omitted head noun was τόπος).

ἐν καθαρῷ ὅθι δὴ νεκύων διεφαίνετο χῶρος

"[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." (Wyatt).

As *DELG* remarks, 'clearing, open space' is the only meaning attested in the *Iliad*. Surprisingly, this crucial fact is completely ignored not only by Peters, but also by Frisk and most other previous treatments of the word. This specific meaning continues to be found after Homer, e.g. in Pindar, in a passage which treats the foundation of the Olympian games by Heracles (*Ol.* 10.43-49):

ὁ δ' ἄρ' ἐν Πίσᾳ ἔλσαις ὅλον τε στρατόν
λᾴαν τε πᾶσαν Διὸς ἄλκιμος
υἱὸς σταθμᾶτο ζάθεον ἄλσος πατρὶ μεγίστῳ·
　　περὶ δὲ πάξαις Ἄλτιν μὲν ὅγ' ἐν καθαρῷ
διέκρινε, τὸ δὲ κύκλῳ πέδον
ἔθηκε δόρπου λύσιν,
τιμάσαις πόρον Ἀλφεοῦ
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 (ἐν καθαρῷ διέκρινε), and he made the surrounding plain a resting-place for banqueting, and honored the stream of Alpheos along with the twelve ruling gods." (transl. Race).

A surprising number of uses of καθαρός is clarified once we depart from an original meaning 'cleared, open': κελεύθῳ τ' ἐν καθαρᾷ, κέλευθον ἂν καθαράν (Pi.) denotes a 'clear path' (without obstacles) or a 'cleared path' (not overgrown). *LSJ* also points at ἐν καθαρῷ βῆναι 'to leave the way clear' (S. *OC* 1575). Herodotus attests ἐς χῶρον καθαρὸν ἀγαγὼν τὸ κτῆνος 'having led the cattle to a clearing' (1.132), and reports that one of the arms of the river Araxis ῥέει διὰ καθαροῦ, 'flows through open land', to the Caspian sea (1.202). Last but not least, this meaning is found in the Heraclean Tables, where ἀνκοθαρίοντι … τὰ πὰρ τὰ αὐτῶν χωρία ῥέοντα means 'to clear [of rubbish] the gullies beside their own plots of land', in order to avoid inundations.[1131]

We may conclude that the original meaning of καθαρός was not 'loose', but 'cleared'. Peters' idea can therefore be safely rejected. In view of the problems to reconstruct a proto-Greek form, Beekes (*EDG* s.v.) has recently assumed that the interchange καθαρός ~ κοθαρός points to a substrate word. As long as good alternatives are lacking, this seems the best option by comparison.

The epic 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 *r̥ has been seen in the isolated forms μεμάποιεν (*Scut.* 252) and μαπέειν (*Scut.* 231, 304), which would contain a metrical reflex of this phoneme (see Beckwith 1996: 105-6). Before this speculative possibility is further investigated, the problems with the reconstruction and etymology of μάρπτω must be addressed.

[1131] *IG* XIV 645, I, 130-33: τὰς δὲ τράφως τὰς διὰ τῶν χώρων ῥεώσας καὶ τὼς ῥόως οὐ κατασκαψόντι οὐδὲ διασκαψόντι τῶι ὕδατι οὐδὲ ἐφερξόντι τὸ ὕδωρ οὐδ' ἀφερξόντι, ἀνκοθαρίοντι δὲ ὁσσάκις κα δεώνται τὰ πὰρ τὰ αὐτῶν χωρία ῥέοντα οὐδὲ τὰς ὁδὼς τὰς ἀποδεδειγμένας ἀρασόντι οὐδὲ συνhερξόντι οὐδὲ κωλυσόντι πορεύεσθαι· (…).

The dialectal origin of μάρπτω is not clear. The aorist ἔμαρψεν is ascribed to Cyprian by the *glôssai kata poleis* (cf. Ruijgh 1957: 166), and 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. θηρεῦσαι.
> βράπτειν· ἐσθίειν. κρύπτειν, ἀφανίζειν. τῷ στόματι ἕλκειν. ἢ στενάζειν.
> ἔβραψεν· ἔκρυψεν. ἔπιεν. κατέφαγεν.
> ἔβραπτεν· ἔκρυπτεν. ἐλάφυξεν.

It is not easy to obtain a clear picture from these glosses. From the interpretation of βράψαι as συλλαβεῖν 'to grasp', θηρεῦσαι 'to hunt down', a relation between this gloss and μάρπτω 'to catch' could be tentatively assumed. But in that case, the connection with other glossed meanings like κρύπτειν or ἀφανίζειν remains unclear. It is suspicious, too, that another root shape βρακ- is attested in the glosses βρακεῖν· συνιέναι and βράξαι· συλλαβεῖν, δακεῖν, καταπιεῖν (both Hsch.). The interchange of root-final velar with labiovelar could point in the direction of substrate origin (Beekes, *EDG*, *Introd.* section 5.6). Yet another gloss has βρόξαι in the meaning ῥοφῆσαι 'to slurp, gulp down' (Hsch.), a verb which is attested with preverbs in similar meanings already in Homer.[1132] Again, the variation in root vowel between βρόξαι and βράξαι may point to Pre-Greek origin (thus Beekes *EDG* s.v.). This could be further confirmed by βρόγχος 'windpipe, throat' (if this has the typical Pre-Greek pre-nasalization) or by βρόχθος 'id.' (if due to different adaptations of a cluster of stops). The variation in root vocalism is perhaps also found in βράγχος (m.) 'hoarseness, angina' beside βρόγχος (see Beekes *EDG* s.vv.). In view of the numerous problems with the reconstruction of μάρπτω and the lack of a good etymology, it is completely uncertain whether this verb ever contained a syllabic liquid. The situation may be compared to ἀστραπή beside Arc. στορπαο (see above).

The substantive **μάρτυς**, Gs. μάρτυρος 'witness' has no good etymology. The main problem is posed by its morphological analysis: the surface form of the suffix -(t)ur- is unparalleled in Greek. Frisk proposes to depart from an abstract noun **már-tu-* 'testimony', which he recognizes as the original form in As. μάρτυν (Simon. *fr.* 11.1), Dp. μάρτυσι. This abstract then would have secondarily changed its stem to attested *mártur-* under influence of **mártu-ro-*, perhaps starting from the Gp. μαρτύρων. Several steps in this reasoning need special pleading, as is stressed both by *DELG* and by Beekes (*EDG*, assuming a substrate word following Furnée 1972: 296).[1133] The connection with a root **smer-* 'to remember', which is further attested only in Indo-Iranian, is difficult for this reason.

Traditionally, **παρθένος** 'maiden' is a beloved object of etymological speculation. A fair number of scholars have embraced the etymology proposed by Klingenschmitt (1974): **pr̥-steno-* "with protruding breasts", "die Brüste hervor habend". However, apart from being rather sexist, this proposal does not explain the vocalization of *r̥* as -αρ-.[1134] Klingenschmitt has to assume that the preposition παρ- was reintroduced in the compound in view of the accent-conditioned development of **r̥* that he defends. In my view, the reconstructed starting point is semantically too uncertain. Alternatively, Hamp (1972) assumed a PIE formation **bʰr̥ǵʰ-uen-* 'having height' comparable to **bʰr̥ǵʰ-ént-* (Ved. br̥hánt- 'elevated') and **bʰr̥ǵʰ-nt-ih₂* (OIr. *Brigit*, Ved. br̥hatī-, epithet of Uṣas). This form would have been remodeled to PGr. **pʰr̥kʰ-wen-ó-* 'the Elevated one', which then developed to **pʰr̥kʷʰenó-* > παρθένος (accent retraction by Wheeler's Law). Semantically, this etymology is attractive because **bʰr̥ǵʰ-nt-ih₂* was the main epithet of the mythical maiden *par excellence*, PIE **h₂eus-os-*

[1132] καταβρόξειε (*Od.* 4.222), ἀναβρόξειε (*Od.* 12.240).
[1133] But I do not agree with Beekes that in **smrtu-* would have to vocalize as *⁺⁺smratu-*.
[1134] On Klingenschmitt's account, **r̥* in an unaccented initial syllable would have to yield -ρα-.

'Dawn'. However, the lack of good parallels for a suffix *-wen- in Greek renders it quite uncertain. No conclusions can therefore be based on this etymon.

For **πράμος**, a hapax in Aristophanes (*Thesm*. 50), Frisk 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' itself may well be a shortened form of πρόμαχος 'id.'.

The adjective **ῥαδινός** 'slender, tapeable', mostly of branches (Hom.+), Sapph. βράδινος 'id.', Hom. hapax ῥοδανός 'id.' (of reeds).[1135] The suffixation -ινός reminds of Caland formations like πυκινός 'dense', ἀδινός 'thick, full, rich' (*sh₂d-). However, the difference between ῥαδινός and ῥοδανός is difficult to explain within Greek. Even if ῥοδ- may be the Aeolic root shape, the difference in suffixation between both forms persists. Moreover, the root ῥαδ- has no clear-cut etymology, the connection with the Vedic hapax *avradanta* 'were weakened' (mentioned by Mayrhofer s.v. *VRAD*) being uncertain. 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 *wrak- if we follow the evidence of glosses with βρακ- (Hsch.). In view of its different meaning 'long-robed women's garment', the appurtenance of βράκεα (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. *vṛścánti* 'they hew, cut off' (defended by Mayrhofer s.v. *VRAŚC*) seems highly uncertain. Unless one wishes to follow the speculations discussed by Frisk (s.v. ῥάκος), there is no indication that the word is inherited.

The group of **στραβός** 'squinting', στρεβλός 'bent, twisted, curled, shrewd' (cf. στράβηλος 'wild olive tree') must primarily be compared with στρόβος 'whirl', στρόμβος 'id.'. Since the root has pre-nasalization, the etymon is most probably Pre-Greek (cf. Beekes *EDG*).

A gloss **τετάρπετο·** ἐτρέπετο (τρέπομαι 'to face, be directed') is attested in Hsch. It is now corrected, in Latte's edition, to τετάρπετο· ἐτέρπετο (τέρπομαι 'to enjoy'). Since the reduplicated aorist τετάρπεσθαι 'to enjoy' is a specific Homeric word, Latte's conjecture seems attractive.

The verb **τραπέω** 'to tread grapes' (*Od*.+) is derived from a PIE root *trep- 'to tread' by *LIV*². Beside τραπέω, the lemma contains only Balto-Slavic material meaning 'to beat, hit' (Slavic) and 'to transgress' (Old Prussian). The connection is possible, but not evidently correct. As the *LIV*² remarks, "die Semantik der Wurzel bedarf ebenfalls noch weiterer Klärung". Further, the semantic field of viticulture is known to contain many loanwords. If τραπέω is indeed an inherited word, τραπ- may also be a secondary zero grade beside τρεπ-. We have to assume, then, that a full grade *trep- was around late enough in Ionic-Attic to influence the vocalized zero grade *tarp-. See section 9.4.1 on ἀτραπός.

The substantive **τράχηλος** 'neck' has been connected with τρέχω 'to run, turn' (originally of a wheel, in Homer only present). Although the semantic development 'wheel, turner' > 'neck' is well-attested (cf. Lith. *kãklas* 'neck' < PIE *kʷekʷlo- 'wheel'), the formation of τράχηλος is unclear. Since τρεχ- is the full grade slot of the root, τραχ- may be a secondary zero grade allomorph. This weakens the evidential value of τράχηλος in any case. Beekes (*EDG* s.v.) follows Furnée (1972: 115 n. 5) in assuming a substrate word because of possible evidence for a Pre-Greek suffix -ηλο-.

[1135] It is uncertain that ῥάδαμνος 'branch' (cf. ὀρόδμανος) is related. If so, it would presuppose an earlier form *ῥάδανος, in which the ending was replaced by -αμνος after θάμνος 'thicket', ῥάμνος 'thorny shrub'.

9.5 The development of *r̥n

As we have seen in section 1.2.4, Haug suggested that *r̥ developed to -αρ- in front of a nasal in all Greek dialects. In what follows, I will consider whether there is evidence for (1) a Pan-Greek *a*-colored development of *r̥n, or for (2) a Pan-Greek development *r̥n > *-ərn-, with subsequent dialectal coloring, and (3) for *r̥n > -αρν- as the regular Ionic-Attic reflex.[1136]

Let us remark from the start that there is no good evidence for a reflex -ρα- in Ionic-Attic, the only possible example being Hom. κράνεια 'cornel cherry', Thphr. κράνον 'id.', Lat. *cornum* 'id.' < *kr̥no-.[1137] In nominal formations, there is hardly any evidence for -αρ-either.[1138] The gloss κάρνος· φθείρ, βόσκημα, πρόβατον 'louse; head of cattle' (Hsch.), in its second meaning, could be from PIE *ḱr̥no- 'horned animal' (see Nussbaum 1986: 6). But since there is no dialect indication, the form cannot be used in the present context. The adjective σπαρνός 'sparse, rare' (Class.) could be reconstructed as *spr̥-nó-, from the root of σπείρω 'to disseminate'. But the formation need not be old, and the suffixation may have been modelled on the opposites πυκνός or συχνός (cf. Frisk, q.v.). In view of its lexically isolated position, one could envisage to derive χάρμη 'battle lust' directly from PIE *ǵʰr̥-m(n)-éh₂- (cf. χάρμα, derived from the synchronic root of χαίρω), but then again, it cannot be excluded that the root χαρ- was reintroduced at some point.

The following verbal forms which continue *-r̥n- have the vowel in front of the liquid:

- θόρνυμαι 'to mount' (Hdt.), θάρνυσθαι· ὀχεύειν, κυΐσκεσθαι 'to mount, get pregnant' (Hsch.) < PIE *dʰr̥-n-h₃-.
- μάρναμαι 'to battle' (Hom.+) < PIE *mr̥-n-h₂-, dissimilated βαρνάμενος (Att. and Corc. inscr.); also μορνάμενος· μαχόμενος 'fighting' (Hsch.).
- πορνάμεν· πωλεῖν 'to sell', πορνάμεναι· κεντούμεναι, πωλούμεναι (both Hsch.) < *pr̥-n-h₂-, beside Class. πέρνημι, with the root vocalism of aor. περάσαι.
- πτάρνυμαι 'to sneeze' (Class.), aor. ἔπταρον (*Od.*) < PIE *pstr̥-nu-.
- στόρνυμι 'to spread out', probably for *στάρνυμι < *str̥-n-h₃- with the root vocalism of aor. στορέσαι.

The question is whether any of these forms is compelling evidence for the regular, undisturbed outcome of *r̥n. The presents πτάρνυμαι and θάρνυμαι can be reconstructed as PGr. *ptr̥-nu- and PGr. *tʰr̥-nu- < PIE *dʰr̥-n-h₃-, respectively, and their vowel slot may theoretically have been influenced by the thematic aorists πταρεῖν and θορεῖν. This makes the evidential value of most such nasal presents for a Pan-Greek vocalization to -αρ- uncertain. Such influence is probable in the case of the gloss θάρνυσθαι, because θόρνυμαι (Hdt.) even adopted the *o*-coloring of the aorist θορεῖν; the same happened in στόρνυμι << *στάρνυμι.[1139]

[1136] The group *l̥n is treated in section 10.5. As we will see, there is one decisive piece of evidence against a Common Greek epenthesis in *ClNV-: the West Greek adverb αϝλανεōς 'all together' (Elis), also attested in the gloss ἀλανέως· ὁλοσχερῶς, Ταραντῖνοι (Hsch.), related to Hom. ἀολλέες 'thronged, gathered together' < PGr. *sm̥-wl̥n-es-, from the root of εἰλέω 'to press together'. The reflexes Hom. -ολ- and West Greek -λα- differ both in vowel color and in the place of the vowel.

[1137] On the difficulties concerning the reconstruction of this form, see section 6.8.3. The forms κράνος (n.) 'helmet' (Class.), κραναός 'rocky' (Hom.), ὀλιγο-δρανέων 'powerless' (Hom.) have no convincing etymology. The aorist δραμεῖν 'to run' < *dr̥m-e/o- is of no consequence, because it could be analogical after δέδρομε, δρόμος. Similarly, τέτραμος 'trembling' (Hp.+) may have been influenced by the full grade of τρέμω. Nothing can be based either on the reconstruction of τράμις 'perineum' (Archil.+) as *tr̥-mi-, which is accepted by Frisk but lacks further motivation.

[1138] I do not include the Gs. ἀρνός 'lamb': this must be analogical after the Ns. ἀρήν in view of the laryngeal reflex in πολύρρην and Ved. *úran-* 'lamb'.

[1139] For πτάρνυμαι one may doubt this scenario, because the νυ-present is probably inherited (in view of Lat. *sternuō*, cf. *LIV*² s.v. *pster-*), and the aor. ἔπταρον may have been based on this present within Greek. There is,

Two verbal formations in the above list, however, definitely speak against a Pan-Greek *a*-anaptyxis, because they show an *o*-coloring which cannot be analogical: πορνάμεν and μορνάμενος. Both are only attested as glosses, but there is no reason to doubt their authenticity. In πορνάμεν, the combination of *o*-vocalism with the infinitive ending -μεν suggests Thessalian origin.[1140] Although the vowel normally arises after the liquid in Aeolic dialects (-ρο-), the corresponding aorist may have played a role in a reshaping to -ορ-.[1141] In μορνάμενος and Ionic-Attic μάρναμαι, we are dealing with a defective paradigm without any other stems, so that both forms are probably the regular and unrestored outcome of PGr. *m̥rna-. There is no indication of dialect in the gloss μορνάμενος, but a reflex -ορ- would be regular in Arcadian, in Cretan (after a labial consonant), and possibly in Cyprian (see chapter 3). The two glosses prove that the vocalization of *C̥rnV- differed per dialect. This refutes Haug's thesis that *CLNV- yields Common Greek *CaLNV-.

The nasal present μάρναμαι 'to fight, contend' (Hom.+), with by-form βαρναμενος (inscr.), is the only formation of this root attested in Greek.[1142] The etymological identification of this nasal present with Ved. *mr̥ṇā́ti* 'to rob, grab' ("packt an"), as from PIE *mr̥-n-h₂-*, is likely.[1143] The Greek middle present, with reciprocal meaning, explains the semantic development ("try to catch one another", e.g. in a wrestling match).

It used to be assumed that the variation μάρναμαι ~ βαρναμενος is due to an original vocalization of *m̥rnamai > *mranamai > *branamai (e.g. Kuryłowicz 1968: 318). But this scenario can be ruled out, because there would have been no clear model to replace a putative *branamai or *mranamai with βάρναμαι or μάρναμαι, respectively. The reason is that there is no further trace of the assumed root *merh₂- in Greek, let alone of an ablauting full grade form.[1144] 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 *r̥n > -αρν-. In addition, the glosses πορνάμεν and μορνάμενος prove that the reflex of *r̥n underwent the *o*-coloring of other dialects (Aeolic, Arcado-Cyprian). μορνάμενος proves that some *o*-coloring dialect also had this vocalization slot, but unfortunately the gloss has no indication of dialect. On the basis of the evidence for *r̥n, it is not easy to exclude a Pan-Greek development *r̥n > *-ərn-, but on the other hand, there is no compelling reason whatsoever to make such an assumption. As we will see in section 10.6, a Pan-Greek development *l̥n > *-əln- can be excluded on account of Elean αϝλανεος.

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however, no reason to insist on this, because there is other, more convincing evidence for -αρ- as the regular reflex in a nasal present.

[1140] But West Greek origin cannot be entirely excluded, cf. section 3.2.2 on the Cretan evidence for *o*-vocalism.

[1141] In πέρνημι 'to sell', Ionic introduced the vowel of the aorist περάσαι, and in μάρναμαι (no aorist), it has the expected *a*-coloring.

[1142] The form βαρναμενος is attested three times: *IG* IX 1² 868 (Kerkyra, 6th c.); *IG* IX 1² 214.4 (Acharnania, 5th c.); *IG* I² 934.46 (Attic, 4th c.).

[1143] It is accepted by Mayrhofer (*EWAia* s.v. *marⁱ-²*), referring to Thieme for the distinction within Vedic from *marⁱ-* 'to crush'. The further comparison of Hitt. *marrii̯e/a-ᵗᵗᵃ⁽ʳⁱ⁾*, *marra-ᵗᵗᵃ* 'to melt down, boil (vel sim.)' (Oettinger 1979) is highly uncertain in view of the semantics: in the meaning 'to crush', Ved. *mr̥ṇā́ti* probably derives from a different root (*melh₁- 'to crush' ~ *meld- 'to weaken, soften').

[1144] Within Greek, the *LIV²* compares μαραίνω 'to quench', but it is not clear how the comparison with μάρναμαι works formally. The idea that μαραίνω is from "*mr̥nh₂-enti*" (*LIV²*), from the same paradigm as *mr̥-neh₂-ti*, can hardly be correct: *mrnh₂-enti (without the vocalization signs) would yield *mrananti (*CRh₂e- > CaRa-). It seems better to compare μαραίνω with *mer- 'to disappear' (with secondarily added suffix -αίνω, for which Frisk (s.v.) compares κηραίνω 'to destroy' and ἰαίνω 'to invigorate') or else to leave it without etymology.

9.6 Evidence for -αρ- < *r̥ in isolated nominal formations

In addition to the evidence for *r̥ > -αρ- accumulated in the preceding chapters, the following nominal forms are isolated within Greek and have not yet received a comprehensive treatment. Although some of these forms have been mentioned along the way in connection with various problems, it seems worthwhile to collect them in this section.

ἅρπη 'sickle' is related to Latv. *sirpis*, *sìrps* and Slav. *sьrpъ* (OCS *srъpъ*, Ru. *serp*), both with the same meaning.[1145] Perhaps, a verbal root is preserved in Lat. *sarpō*, *sarpiō* 'to prune'. If so, we are dealing with a zero grade root noun *srp̥- in the meaning 'pruner' which received an extension *-ā- in Greek. It has been assumed that Celtic *serrā 'sickle' (MIr. *serr*, OW *serr*) also belongs to this etymon as *serp-eh₂- (see Matasović *EDPC* s.v.),[1146] but this does not drastically change the picture. The form ἅρπη < PGr. *srp̥-ā- is isolated within Greek and has no ablaut. There is no indication either that an ablauting root noun still existed within Greek when the liquid was vocalized. I therefore conclude that ἅρπη contains the regular, unrestored vocalization of *r̥ in Ionic-Attic.[1147]

As argued in section 2.1, **καρπός** 'fruit, harvest' must be separated from Myc. *ka-po*. The assumption of a secondary zero grade *CaRT of the type advocated by Kuryłowicz (section 1.4.3) is unlikely. Within the framework of a regular change *r̥ > -αρ-, καρπός can be directly derived from an inherited pre-form *kr̥p-ó-. The word is also attested in many West Greek dialects, where it may either be the vernacular form, or due to epic influence.

Although the reconstruction of **σάρξ** < *tu̯r̥k̑- is made difficult by a number of complications involving the reduction of the cluster *-tw- in Greek, the solution proposed in section 2.5 avoids all the problems. I have argued that word-internal *-tw- was regularly reduced in front of *r̥ (as evidenced by τετρα-, τέτρασι, and τέταρτος ~ τέτρατος). Prior to this development, the word-initial *tw- presupposed by the cognates of σάρξ must have developed to *tˢ-, perhaps already to s-, after which *tˢr̥k- or *sr̥k- regularly yielded σαρκ-. The "Doric" and "Aeolic" glosses with συρκ- may be explained by assuming that North Greek preserved the syllable onset *tˢw- for a longer time than South Greek. North Greek solved the problem of vocalization posed by *tˢwr̥k- by reinterpreting the labial off-glide as a vowel, yielding *tˢurk-, but South Greek first underwent the reduction to *tˢr̥k-. Of course, it is not easy to exclude alternative solutions, but I conclude that σάρξ < Proto-South Greek *tˢr̥k- may well be an instance of the regular Ionic-Attic vocalization to -αρ-.

Ionic-Attic has several related words for 'rope, cord': **σπάρτον** (Hom., Hdt., Th. etc.), σπάρτη (Ar.), σπαρτίον (X.+). They must be connected within Greek to σπεῖρα 'anything wound or coiled', e.g. 'cord, belt, etc.' (class.), and perhaps also to σπεῖρον 'sail, cloth, burial shroud, etc.' (*Od.*+). Although these words have no clear IE cognates,[1148] the suffixes are characteristic for an inherited word. This means that σπάρτον may reflect a form with zero grade, i.e. *spr̥-to-. It cannot be entirely excluded that σπαρ- was influenced by the full grade

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[1145] See Frisk and *DELG* s.v. ἅρπη.

[1146] Alternatively, the Celtic words have been analyzed as borrowings from Lat. *serra* 'saw'. This has been judged semantically implausible, but this is not necessarily the case, given the side-by-side of Ved. *sr̥ṇī́-* 'sickle' and Khot. *harraa-* 'saw', NP *arrah* 'id.' < PIr. *hr̥na-ka-. The relation between these Indo-Iranian words and *srp- 'sickle' remains unclear.

[1147] For Beekes (p.c.), the fact that syllabic *r̥ would appear as -αρ- in ἅρπη was reason to discard the regular etymology in favor of the assumption of a European substrate word (Beekes *EDG* s.v.). But with the possibility that -αρ- is the regular reflex of *r̥, this objection disappears.

[1148] It is possible that the words derive from the same root as OLith. *spartas* 'tie', which belongs to Lith. *spìrti*. 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. As a speculative suggestion, could the semantic connection between σπάρτον, σπεῖρα and this root be that a rope 'binds down, puts to the ground' a thing or person?

slot *sper-* in the related words. However, given that the paradigms of σπάρτον (etc.) are non-ablauting, and that no corresponding verbal root is attested in Greek, and that the meanings are heavily lexicalized, there is no reason to assume that the vocalism of σπάρτον was influenced by a full grade form. In this respect, σπάρτον 'rope' is different from ἄσπαρτος 'unsown', which may have been influenced by the full grade of σπείρω and the zero grade of the intransitive aorist σπαρῆναι.