CHAPTER 1

The Greek Reflexes of *r̥ and *l̥

Introduction

The main aim of this book is to establish the regular reflexes of the syllabic liq-
uids *r̥ and *l̥ in all Ancient Greek dialects, including Mycenaean. These sounds
were inherited by Proto-Greek from Proto-Indo-European as allophones of /r/ and /l/
in a number of phonological environments. All first millennium Greek
dialects have lost *r̥ and *l̥, as did most other Indo-European languages upon
their first attestation. However, Proto-Greek must have retained them because
the alphabetic dialects show various different reflexes of *r̥ and *l̥. For example,
the Proto-Greek thematic aorist *amr̥t-e/o‑ ‘to miss, fail’ is continued in Ionic-
Attic as ἥμαρτον, inf. ἀμαρτέιν, but in Lesbian as inf. ἀμβροτην (epigraphically)2
and ind. ἄμβροτε (Sapph.). Proto-Greek *trepidía ‘table’ is reflected as to-pe-za
in Mycenaean, but as τράπεζα in alphabetic Greek from Homer onwards.

Questions that a historical linguist may ask regarding such forms are: what
conditioned the difference between the reflexes -αρ‑ (ἁμαρτεῖν) and -ρα‑ (τρά-
πεζα)? What does the Mycenaean form to-pe-za represent phonologically and
phonetically? Why does Lesbian have a reflex -ρο‑ in ἄμβροτε, but -αρ‑ or -ρα‑ in
several other forms? Is the o-reflex, in those dialects where we find it, subject
to phonological conditioning or is it found across the board?

The bibliography on the syllabic liquids in Greek is large, and not every
previous treatment of the topic will receive equal attention in this book. In
section 1.1, where I discuss a selection of previous scholarship, the main aim
is to illustrate the different issues that are at stake. Once these issues have been
presented, the scope of this investigation will be delimited more precisely.

1.1 The Problem and Its Relevance

Determining the regular reflexes of *r̥ and *l̥ is not just an issue of Greek his-
torical phonology. The problem is intimately connected with two other, much-

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1 The PIE phonological system with both syllabic liquids and syllabic nasals is placed in a typo-
logical perspective by Cooper (2013).
2 Throughout this book, accent marks and breathing signs will not be added to alphabetic
Greek forms as attested in inscriptions.
debated questions that are of considerable importance for reconstructions of the prehistory of the Greek language and literary traditions. First, how and when did the four main dialect groups of alphabetic Greek originate? And secondly, how and when did the artificial language of the epic tradition, in the form familiar to us from Homer onwards, come into being? Once the regular reflexes of the syllabic liquids and the chronology of their developments have been established, more definite answers to these questions may be given.

1.1.1 A Concise Summary of Some Previous Accounts

Although scholars disagree on many smaller issues, in essence there have been three basic views on the development of the syllabic liquids. I will associate these views with the names of Ruijgh, Tichy, and Heubeck.

C.J. Ruijgh has written about the syllabic liquids in Greek for almost his entire scholarly career. Since he usually presents his views and their consequences with great clarity, his work is a good place to start. Ruijgh’s two main contentions are:

1. The syllabic liquids were eliminated from all Greek dialects already in the mid-second millennium. This resulted in a split between dialects with o-vocalism (Aeolic, ’Achaean’ and dialects with a-vocalism (Ionic-Attic, West Greek).

2. The metrical behavior of certain Homeric formulae containing a reflex of *r̥ proves that epic composition in hexameter verse (more or less in the form known from Homer) existed as early as the mid-second millennium.

Concerning point 1, it is traditionally accepted that a regular o-colored reflex of the syllabic liquids is found only in the Aeolic dialects (Lesbian, Thessalian, Boeotian) and in Arcado-Cyprian. From the viewpoint of Classical Ionic-Attic, this reflex was considered so characteristic that Aeolic and Arcado-Cyprian were occasionally lumped together, in the first half of the previous century, as a special subgroup. After the decipherment of Linear B, however, most scholars have come to agree that the fundamental division is between what Risch (1955) called North Greek and South Greek. The two most important isoglosses sepa-

3 See, for instance, Ruijgh (1961; 1967; 1985; 1995; 1997).
4 ’Achaean’ is the conventional name for the hypothetical dialect group comprising Mycenaean, Arcadian and Cypriot.
5 See e.g. Buck (1955: 23); Lejeune (1972: 197).
6 North Greek comprises the later West Greek and Aeolic groups, and Proto-South Greek is the ancestor of ’Achaean’ and Proto-Ionic. The idea was already proposed before the decipherment of Linear B: see Risch (1949) and Porzig (1954). For a history of early research on the possible relations between Mycenaean and the precursors of the alphabetic dialect groups, see Cowgill (1966).
rating these two groups are the South Greek assimilation *t(h)i > si and the South Greek development of intervocalic *t(h)i- through *-ts- to -ss- (later > Ion.-Att. and Arc. -σ-). The phonologically more conservative North Greek dialects initially retained t(h)i and *ts.7

In discussions of early Greek subgrouping the reflexes of *ᵣ have played an important role, especially when the decipherment of Linear B seemed to prove an early date for its vocalization. Mycenaean forms like to-pe-za and qe-to-ro-po-pi, which derive from PGr. *ᵣ-ped-ja and *kwetᵣ-pod-phᵣ, are usually thought to represent /torpeddja/8 and /kwetropophᵣ/, respectively. These examples seem to prove that the vocalization had been accomplished already in the early 14th c. BCE (the earliest attestations of Linear B) in the ‘Achaean’ dialects of South Greek, and perhaps even earlier.

A much-cited argument in this connection is the development of an epenthetic -d- between a coda nasal and an onset liquid.9 This phenomenon is attested already in Mycenaean10 and also in the Homeric form ἀνδροτῆτα ‘vigour’, which is usually taken to reflect PGr. *anᵣtāt-. Since the insertion of -d- in ἀνδροτῆτα presupposes the vocalization of *ᵣ to -ro-, and since the same reflex appears to be found in Myc. qe-to-ro-po-pi, most scholars have concluded that both developments, the vocalization of *ᵣ and d-epenthesis, took place in this word prior to the attestation of Linear B. By extension, it was assumed that the other dialects vocalized *ᵣ (and *ᵩ) around the same time, even if these dialects are first attested at a much later date than Mycenaean.11

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7 Cf. Myc. di-do-si /didonsi/ ‘they give’ (Ion.-Att. 3sg. δίδωσι), and Myc. to-so /to(s)son/ ‘so much’ (Ion.-Att. τόσος), Myc. me-sa-to /me(s)sato-/ (Ion.-Att. Arc. μέσος ‘middle’). The ambiguous spelling of Linear B does not allow us to determine whether Mycenaean had already undergone the development *-ss- > -s-. The Boeotian and Cretan reflexes presuppose that the affricate reflecting intervocalic PGr. *-ti- was preserved in Proto-Aeolic and Proto-West Greek, respectively.

8 I write /ddj/ for the outcome of the palatalized stops *di̯ and *g(w)i̯ in Mycenaean, following the arguments advanced by e.g. Risch (1979b) and Crespo (1985). Of course, my argument concerning the syllabic liquids does not depend on this; the reader who wishes to read e.g. a geminated affricate /ʣ:/ instead may feel free to do so.

9 Apart from Ruijgh (in most of the publications cited in n. 2), cf. e.g. Hackstein (2002: 6); Barnes (2011: 2).

10 In a-di-ri-ja-te /andriotē/ (ins. sg.) ‘with a man’s figure’, the PN a-re-ka-sa-da-ra /Aleksandра/, and perhaps in the PN a-da-ra-ko /Andrankhos/. However, these forms do not contain the reflex of *ᵣ but of its prevocalic consonantal allophone, i.e. *anᵣV. See section 7.3.1.

11 Apart from Ruijgh, see also Cowgill 1966: 92–93. However, this view is certainly not shared universally: among the scholars defending a pre-Mycenaean origin of Epic Greek, West (1988: 156–157: “in the Mycenaean tablets that stage is already past; that dialect at least [emphasis LvB] has moved irrevocably towards or or ro”) and Wathelet (1970: 172: “un fait
Starting from these assumptions, Ruijgh concludes that the developments represented in Table 1 took place in the mid-second millennium, resulting in a split into four dialect groups.12

Note that the argument for a mid-second millennium split into four dialect groups depends also on morphological criteria, but the outcome of *r is the only phonological criterion used in this connection. There are no other phonological developments that are demonstrably early and where the first millennium dialect groups have different reflexes.13 It does not come as a surprise, then, that alternatives to Ruijgh’s scenario have been put forward. Risch (1955) maintained that there were no significant differences between ‘Achaean’ and Proto-Ionic in the Mycenaean period, and denies that the reflexes of *r can be used as a reliable criterion.14 Heubeck (1972) argued that *r was preserved in Mycenaean, and he was followed by García Ramón (1975), who claimed in addition that Proto-Aeolic retained *r until a relatively late date.

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12 This is specifically Ruijgh’s view (e.g. 1985: 162–163, 1992: 84–87, 1996: 117). Similarly, Cowgill (1966: 94–95).

13 For a summary overview of morphological criteria (the athematic inf. act. in -ναι, -μεν, or -μεναι, or adverbs of the type ὅτε, ὅτα, ὅκα ‘when’) and lexical criteria (e.g. βούλομαι, βόλομαι vs. δήλομαι, βέλλομαι), see the classic study by Risch (1955), especially the table on p. 75, and also Cowgill (1966). The most important question is always whether a feature shared by two dialect groups can be proven to be a common innovation, or whether we may be dealing with shared archaisms or independent innovations.

14 This view is maintained also in Risch 1979a. However, Risch’s views on the syllabic sonorants are idiosyncratic in at least two respects. First, he views the vocalization of syllabic liquids and nasals as part of the same development (which is implausible: see section 1.3.3). Secondly, he seems to have held that the o-vocalic outcome in Aeolic and Arcado-Cyprian is an archaism, i.e. that it can be viewed as a pre-stage of the a-colored reflex in Ionic-Attic, which is untenable (cf. the criticism in Cowgill 1966: 80 and 82).
Let us now turn to the second issue: the prehistory of Epic Greek and the hexameter. The history of scholarship on this question in the second half of the 20th century is well summarized by Hajnal (2003). The debate was initiated by Mühlestein (1958) in an article about Mycenaean names starting with a-no-\. He interpreted this as representing the lexical element /anor-/ < *anr̥- ‘man’, corresponding to Class. ἀνδρο‑ < *anro-. Moreover, he connected the Mycenaean names with a long-standing metrical problem from Homeric Greek. The verse-final coordinated noun phrase ἀνδροτῆτα καὶ ἥβην ‘vigor and youth’ and the noun-epithet formula Ἐνυαλίῳ ἀνδρείφόντη ‘to man-slaying Enyalios’, which both seem to be old elements of epic diction, are unmetrical as they appear in our Homeric text. This remains so if we replace the morphologically opaque form ἀνδρείφόντη by a pre-form with *ἀνδρο-. Moreover, using a formulaic phrase like ἀσπίδος ἀμφιβρότης ‘man-covering shield’ in the epic hexameter requires that plosive plus liquid (PL) onsets can be realized as tautosyllabic. Of course, muta cum liquida scansion is a well-known license in many varieties of Greek poetry, but in Homer this phenomenon is relatively rare, and highly uncommon with word-internal PL-clusters. These metrical irregularities disappear if *r̥ is substituted for its Homeric outcome ‑ρο‑, i.e. in the reconstructed pre-forms *anr̥tāta, *anr̥khontāi, and *amphr̥mtās. Hence, it is attractive to assume that the phrases in question were coined before *r̥ was eliminated from the dialect in which they were composed. Now, if it is true that the change *r̥ > -or-, -ro- had been completed in Mycenaean already before our attestations of Linear B, as many scholars assume (see above), and if we also believe that pre-forms of ἀμφιβρότης and ἀνδροτῆτα (with their reflex -ρο-) entered the epic tradition from this direct ancestor of Mycenaean, it would follow that the formulae in question were coined by poets speaking this pre-form of Mycenaean, approximately in the mid-second millennium BCE.16

This account of ἀνδροτῆτα and related forms was widely shared in the 1980’s and early 1990’s, but in the meantime, it had also become the topic of a controversy initiated by Tichy (1981).17 Tichy’s main objection to the account just

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15 See chapter 6.
16 Mühlestein (1958: 224): ‘Demnach muss schon vor der Mitte des zweiten Jahrtausends in griechischen Hexametern von Mannheit gesungen worden sein’. See also Ruig (as above), Wathelet (1966: 171–172), West (1988: 156–157). However, Mühlestein (1958: 226, Nachtrag) also argued that “der Weg zur homerischen Sprache (…) nicht durchs Mykenische hindurch, sondern am Mykenischen vorbei [geht]” in view of the abstract a-no-qa-si-ja which he interpreted as /anorkwhasiā-/, excluding -ro- as a regular reflex. For further evaluation of these arguments, see section 7.3.3.
17 Hackstein (2002: 6) speaks of “ein beständiger Zankapfel zwischen der Philologie und der
sketched was that the unchanging existence of the Homeric hexameter for such a long period is a premise that cannot be relied upon. She argued, instead, that phrases like ἀσπίδος ἀμφιβρότης and Ἐνυαλίῳ ἀνδρεῖφόντῃ could be relatively recent creations. Moreover, she maintained that ἀνδροτῆτα καὶ ἥβην does not provide evidence for a phonological pre-stage, but for an older shape of the verse form: she explains it by taking recourse to the proto-hexameter framework proposed by Berg (1978). In Tichy’s view, the aberrant Homeric scansion of the form ἀνδροτῆτα was regular at a pre-stage of epic verse when a trochaic fourth foot was still allowed. This scenario, or at least its possibility, has gained an increasing number of proponents among Indo-European scholars. At any rate, the preservation of metrically irregular formulae over a period of seven centuries is implausible. Finally, it has been claimed that the formula ἀνδροτῆτα καὶ ἥβην, in its Homeric form, cannot have existed in (pre-)Mycenaean epic because the conjunction καὶ is unattested in Mycenaean.

The idea of an early split into -coloring and -coloring dialects has also been challenged in various different ways. First of all, the Mycenaean situation cannot be automatically projected onto the other dialect groups with -colored reflexes: there is no cogent reason to assume a development shared by Mycenaean with Proto-Aeolic. A fortiori, we must remain agnostic about the date of vocalization of *r̥ and *l̥ in the other non-'Achaean' dialect groups. Moreover, the assumption that an -vocalic reflex of *r̥ and *l̥ was the only regular treatment in Aeolic and 'Achaean' has occasionally been challenged, most notably by Morpurgo Davies (1968), and more recently by Thompson (2010). Finally, Heubeck (1972) has argued that Mycenaean, as attested in the Linear B tablets, even preserves *r. He proposed that the epic language and its meter first

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18 E.g. Haug (2002), Hackstein (2002; 2010), Hajnal (2003). However, note that Tichy’s monograph on the subject (2010) has been severely criticized by West (2011) in his review of it.
19 Cf. Haug (2002: 63–64), whose arguments concerning Ἐνυαλίῳ ἀνδρεῖφόντῃ will be further discussed in section 7.3.2.
20 Cf. e.g. Hackstein (2002: 6). The absence of καὶ in Mycenaean caused Ruijgh to modify his views on ἀνδροτῆτα καὶ ἥβην in his later publications (e.g. Ruijgh 1997: 42–44); as a consequence, he then placed more emphasis on Ἐνυαλίῳ ἀνδρεῖφόντῃ as the main piece of evidence for the assumed pre-Mycenaean origins of epic verse.
21 Cf. Risch (1955: 72 and 1979a: 109) and Heubeck (1972). According to Wathelet (1970: 172–173) the vocalization "constitue un fait relativement récent en mycénien et, sans doute aussi, dans l’ensemble du grec."
22 See section 3.4.
originated in the early Dark Ages, when stories about the ‘heroic’ age of the Mycenaean started to be told.

To conclude this introductory discussion, there is still no consensus about the following points:
- The exact reflexes of *r̥ in Aeoic and Arcado-Cyprian;
- The date of its vocalization in the various dialect groups;
- The origin of metrically aberrant forms with -ρο- in Homer.23

Regarding the last two points there are three main positions. Scholars like Ruijgh argue for an early vocalization of *r̥ in all dialect groups, and think that certain metrically anomalous forms in Homeric Greek were adopted by the epic tradition at this early time in a form with *r. Tichy and her followers agree about the early date of the vocalization of *r̥, but for them the idea of reflexes of *r̥ in Homeric meter is anathema (cf. section 1.5.3). Finally, scholars like Heubeck consider a late vocalization of *r̥ possible and consequently have less problems in viewing metrically aberrant verses in Homer as preserving traces of *r̥. Concerning the date of vocalization, the mainstream view still sides with Ruijgh and Tichy,24 but as we will see the arguments on which this view is based are not strong. As for the possibility to distinguish metrical traces of *r̥ in Homeric meter, many scholars these days have yielded to Tichy’s arguments against this.25 In chapters 6 and 7, I will plead for a reappraisal of the views held by Wathelet and Heubeck, and reinforce their case with new arguments.

1.1.2 Research Questions and Hypotheses

The attempt to disentangle this web of questions and proposed solutions must start with a thorough investigation of the evidence for each dialect, as attested in epigraphic material, in glosses and grammarians, and in literary sources. The first main goal of this book is, therefore, to review the entire evidence for *r̥ and *l̥ and to establish the regular development(s) per individual dialect group. An evaluation of the etymological evidence for *r̥ in Mycenaean and the alphabetic dialects apart from Ionic-Attic will be given in chapters 2 and

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23 For instance, Cowgill (1966) is cited with approval by Parker (2008), and Heubeck (1972) has been accepted by García Ramón (explicitly in 1975, implicit in many later works). Rix (1992: 65) is more reserved about the o-colored outcome in Mycenaean and Arcado-Cyprian. Lejeune (1972: 197–198) assumes a stronger “preference” for the o-colored outcome in Mycenaean and the Aeolic dialects.

24 Apart from Wathelet (1970) and West (1988), this thesis is accepted by scholars like Sihler (1995: 92), Haug (2002: 59), Hackstein (2002: 5–7), Hajnal (2003). Meier-Brügger (1992b: 288) and Barnes (2011: 2 with n. 6) use the form ὑπόδρα as an argument for an early vocalization, but as I will show in chapter 9, this is unfounded.

25 Cf. Haug (2002); Hackstein (2002); Hajnal (2003).
3, respectively. The much more extensive evidence for *ᵣ from (literary) Ionic-Attic, including the oldest attestations in Epic Greek, is the subject of chapters 4 to 9. The development of *ᵣ in all dialects is discussed separately in chapter 10, because *ᵣ and *ᵢ may have had different reflexes.

The main focus of my attention will be on the regular place of the anaptyctic vowel. In this respect, the present work differs from most previous treatments of the problem. Shorthand formulations like “PGr. *ᵣ > Ion.-Att. αᵣ/ᵣα, Myc. or/ᵢo” are commonplace in the scholarly literature. However, if such statements are taken at face value, the assumed variation would violate the principle of Ausnahmslosigkeit. Since sound changes normally do not have a dual outcome, we must ask, for each individual Greek dialect: was the regular reflex -ᵣο-, -ᵢᵣ-, -ᵣα-, or -ᵢᵢα-? The evidence for various dialects within the West Greek group is rather limited, but for the two dialect groups with an o-colored reflex we will reach a remarkable conclusion: the regular treatment in Aeolic dialects is *ᵣ > -ᵣο- (chapter 3), but such a development can be excluded for Mycenaean (chapter 2).

The most complicated question concerns the regular outcome of *ᵣ in Ionic-Attic: was it -ᵢᵢα- or -ᵢᵣα-? The existence of pairs like κᵢᵢάτις ~ κᵢᵢατίς and κᵢᵣᵢάτος ~ κᵢᵢᵢάτος forms a long-standing problem to which various solutions have been suggested since the late nineteenth century. As we will see in section 1.4, none of these attempts has been particularly successful. Therefore, many scholars have resigned to the view that the original distribution cannot be fully recovered. At the same time, it is still widely believed that *ᵣ > ρα was the regular development in Ionic-Attic—in spite of various unresolved problems.26

In my view, this conclusion is unwarranted, and the problematic ‘double reflex’ in Ionic-Attic must be tackled from a completely different angle. I posit a regular development *ᵣ > -ᵢᵢα- in Proto-Ionic (i.e. the latest common ancestor of Attic and all varieties of Ionic), and propose to explain a considerable number of instances of -ᵢᵢα- by a development taking place in Epic Greek, which affected those forms with *ᵣ that were retained longer within the epic tradition. I will briefly introduce the reasons for proposing such a scenario in section 1.5, and elaborate the details in chapters 6 to 8. Thus, the second objective of this book is to make explicit the various mechanisms by which forms with an original *ᵣ were treated in Epic Greek.

As we have seen, the reflexes of *ᵣ have played an important role in previous discussions about the genesis of the four main Greek dialect groups. The reader may have noticed my skepticism concerning the alleged mid-second

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26 See e.g. Lejeune 1972: 197.
millennium date of the vocalization. Indeed, on the basis of the new proposals made in this book, the value of the vocalization of *r̥ as an isogloss must be reconsidered. This is the third main objective of this book. An important realization is that Aeolic and ‘Achaean’ have different outcomes of *r̥, in spite of the fact that they appear to share an o-colored reflex. This conclusion deprives the idea of an early vocalization of all justification: there is no longer any reason to view these two dialectal developments as part of the same isogloss. For reasons that will become clear later, I think that the vocalization of *r̥ must be pushed forward in time as far as possible towards our first attestations. In this context, a particularly important question is whether Mycenaean still preserves *r̥, as Heubeck (1972) argued. This thesis has been widely criticized and, as we will see in chapter 2, the issue is indeed difficult to resolve on the basis of the Mycenaean evidence alone. However, as will become clear from the scenario proposed here for the development of *r̥ in Epic Greek, there are various aberrant word-forms and/or scansion in Homer that probably entered the tradition in a shape with *r̥ in a Mycenaean context. In my view, such forms make the retention of *r̥ in the palatial period, and the existence of a precursor of the epic tradition at that stage, likely.

Before examining previous proposals to solve to the vexed issue of the ‘double reflex’ in section 1.4, I will first of all delimit the phonological environments where the Greek dialects did not diverge in their treatment of *r̥ and *l̥. These environments with a Pan-Greek or Proto-Greek vocalization to /ar, al/ (or /ər, əl/) are discussed in section 1.2, and will only play a marginal role in the remainder of this book. After that, various issues related to o-colored and alleged u-colored reflexes of *r̥ will be treated in section 1.3: in which dialects do we find o-vocalism, and under which conditions? Is there any evidence for a u-colored reflex in labial environments? And, finally: is there any connection between the o-colored reflex of the syllabic liquids and that of the syllabic nasals?

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27 Since the evidence for *l̥ is too limited, I will focus on the vocalization of *r̥ as far as chronological issues are concerned. It cannot be excluded on forehand that *l̥ vocalized earlier than *r̥.

28 García Ramón (1975) assumes a post-Mycenaean vocalization to -ro-, -oρ- in Proto-Aeolic, basing himself on Heubeck’s idea of retained *r̥ in Mycenaean. However, there is no principled reason to conclude, from the non-occurrence of a change in one (South Greek) dialect, that the change did not occur in a different (North Greek) dialect.

29 In this respect, I agree with Heubeck (1972).
1.2 Environments with a Common Greek or Proto-Greek Reflex αρ, αλ

In Proto-Indo-European, *r̥ and *l̥ were allophones of /r/ and /l/, occurring whenever these phonemes served as a syllabic nucleus. This would usually be a consequence of ablaut, which left /r/ or /l/ between two consonants (including laryngeals), or at word end after a consonant. Examples are:
- *C̣L: τρέπω ‘to turn’ < *trekw-oH, aor. ἔτραπον < *e-trek-w-om
- *C̣LHC: βορά ‘food’ < *gʷorh₃-éh₂, βρωτόν ‘meat’ < *gʷrh₃-tóm (root PIE *gʷerh₃-)
- *C̣LHV: ἀρήν ‘lamb’ < *u̯r̥h₁-ën, πολύρρηνος ‘rich in lambs’ < *polh₁u-u̯r̥h₃-n-os
- *-CL: ἦμαρ ‘day’ < *h₂eh₁-mr̥, Myc. a-mo-ra-ma /āmōr-āmēr/ (1st cm *h₂eh₁-mör).

It is sometimes assumed that *r̥ and *l̥ could occur as a consequence of Sievers’ Law, in words where a suffix like *-ro- or *-lo- followed a heavy syllable, e.g. ἀγκάλη ‘bent arm’ < PIE *h₂énk-leh₂, ὀμφαλός ‘navel’ < PIE *h₃nbh-lós. However, it remains uncertain whether Sievers’ Law was really a productive phonological rule at any stage of the prehistory of Greek. Moreover, even if Sievers’ Law was operative, it is not quite clear whether it makes sense to distinguish e.g. *h₃nbh₃lós as an intermediate stage, rather than assuming a direct vowel anaptyxis (PGr. *ompʰ₃lós > *ompʰ₃lós) that was at some point phonemizated. In other words, in such examples *l̥ is nothing more than a notation indicating that anaptyxis took place. The same point applies to alleged cases of Lindeman’s Law in Greek, such as nom.-acc. sg. κάρη ‘head’ < *kərā < PGr. *kɾā. I will not be dealing structurally with alleged cases of prevocalic *r̥ or *l̥.

While *r̥ and *l̥ were originally allophonic variants of /r/ and /l/, they may have functioned as distinct phonemes (be it marginal ones) at certain stages of the prehistory of Greek. In Proto-Greek, the loss of intervocalic laryngeals led to a phonemization of the glides *i and *u, as opposed to the vowels i and u. Thus, in PIE *medhio- > PGr. *metʰío- ‘middle’, the sequence *-io- had become phonologically distinct from e.g. the suffix PGr. *-i(ɨ)o- < PIE *-iH-o- (continued as Gr. -iος). At this time, a marginal phonemic difference between consonantal /r/ /l/ and syllabic /r̥/ /l̥/ may also have come into existence: the sequence -ur- between two consonants (e.g. in the borrowing πυργός ‘fortification’) may have been realized differently from -ur- in the same position (e.g. in PGr. *τύρκες ‘pieces of meat’ > σάρκες). However, it is also possible that πυργός was borrowed...
into Greek only after the syllabic liquid in \( ^*\text{-}u\text{-} \) had been eliminated. In any case, instances like \( \pi\upsilon\rho\gamma\gamma\varsigma \) versus \( ^*\text{t}y\text{r}k^- \) would have remained marginal.

In other cases, syllabic liquids were eliminated early on (but after PIE) by conditioned phonological developments. This certainly included the environments PIE \(^*\text{CRHV}\) and \(^*\text{CRHC}\).\(^{32}\) An early vocalization has also been envisaged for three other environments: word-initial and word-final position (cf. Schwyzter 1939: 342), and the positions before a glide (\(^*\text{CL}/\mu\text{-}\) and a nasal (\(^*\text{CLNV}\)). I will now discuss these environments in succession.

1.2.1 PIE \(^*\text{CRHV}\) and \(^*\text{CRHC}\)

In PIE sequences of the structure \(^*\text{CRHV}\), an anaptyctic vowel had developed in Proto-Greek before the sonorant: \(^*\text{C}r\text{HV}\). When the laryngeals were eliminated, the anaptyctic vowels were phonemized, meaning that the syllabic liquid was ‘vocalized’: \(^*\text{C}ə\text{RV}\). This subsequently yielded Greek /CaRV-/, e.g.:

- βάρυς ‘heavy’ < \(^*\text{gwr}H-u\text{-}\) (cf. Ved. gurú-, Goth. kaurus, etc.)
- πάρος ‘before’ < \(^*\text{pr}H\text{o}s\) (cf. Ved. puráḥ ‘in front’)
- ἀρήν ‘lamb’ < \(^*\text{u}r\text{h}_1\text{-}ēn\) (cf. Ved. úran- f. ‘id.’)
- τανάὸς ‘thin’ < \(^*\text{t}n\text{h}_2\text{-}e\text{μo}-\).

Two points deserve attention. First, the development \(^*\text{CRHV}\) \(>\) \(^*\text{C}ə\text{RV}\) shows that all Greek dialects developed an anaptyctic vowel before the liquid or nasal, and secondly, the development is identical for liquids and nasals. This contrasts with the development in most environments not involving laryngeals, in which case an anaptyctic vowel developed after the liquid in some dialects (yielding \(-\rho\text{- or } -\rho\text{α}-\)), but before the liquid in others (yielding \(-\rho\text{φ- or } -\rho\text{α}-\)). This means that the development \(^*\text{CRHV}\) \(>\) \(^*\text{C}ə\text{RV}\) preceded the vocalization of the syllabic liquids (and nasals) before consonants other than laryngeals.

It is likely that the anaptyctic shwa in \(^*\text{C}ə\text{RV}\) merged with /a/, the reflex of interconsonantal \(^*\text{h}_2\) and \(^*\text{h}_2\text{e}\), at an early stage. The main argument for this claim is that all Greek dialects appear to have this reflex.\(^ {33}\) Some scholars have proposed a special development \(^*\text{CRHV}\) \(>\) \(^*\text{CoRV}\) for Lesbian, but the evidence consists of just two forms in Alcaeus:

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32 Note the following notations: \( R = \) any sonorant (= liquid or nasal), \( L = \) any liquid, \( N = \) any nasal.

33 Beekes (1969) at first defended the idea that the anaptyctic vowel before the sonorant in the sequence \(^*\text{C}r\text{HV}\) could be colored by the laryngeal following it (“laryngeal umlaut”). He gave up this idea soon afterwards in view of \( \dot{α}\rho\text{φ} \text{‘lamb’ beside Ved. } \dot{u}\text{r}\text{ān-} \) and \( \dot{α}\lambda\text{λωναι ‘to get caught’} < ^*\text{u}l\text{h}_3\text{-}e\text{h}_1\text{-} \). Ruijgh kept defending the idea of “laryngeal umlaut” in various publications. For further arguments against it, see Peters (1980: 27–31 n. 19).

34 For this point, see e.g. García Ramón (1985) and Rix (1992: 74).
Concerning τόμοντες, I agree with Francis (1974: 23–24 with n. 30, followed by Peters 1980: 28) that the form may well be a hyper-Lesbianism. Alternatively, τόμοντες could have an analogical o-vowel of the root if we assume that this became productive in the thematic aorist in Lesbian, starting from forms with a vocalized zero grade *CrC- > /CroC-/, such as ἔτροπον, ἔδρομον. As for χόλαισι beside χαλάω, in spite of Francis (1974: 24 n. 32) and Peters (l.c.) it would be hazardous to conclude anything on the sole basis of this form, as its root has no clear Indo-European etymology. Moreover, accepting the above analysis of χόλαισι would imply that all other instances of the reflex *CRHV- > /CaRV-/ in Lesbian were borrowed from Ionic, which seems unlikely.\(^{35}\)

In sequences of the structure *CRHC, an anaptyctic vowel developed after the sonorant: *CR,H,C. This vowel was subsequently colored by the following laryngeal, yielding the well-known long-vocalic triple reflex *CRēC, *CRāC, *CRōC: cf. γνητός ‘born’ < *ǵnh₁-tó-, Att. πρᾶτός ‘sold, for sale’ < *prh₂-tó-, and χλωρός ‘bay, pale; green’ < *ǵhlh₃-ró-. This means that *CR,H,C merged with *CRēHC. Again, all Greek dialects have the same reflexes,\(^{36}\) and in fact Greek probably shared this development with Phrygian, witness χλωρός beside Phryg. γλουρεός ‘golden’ (cf. now Obrador Cursach 2019: 234).

A more difficult problem is the existence of disyllabic reflexes of *CRHC. This issue will not be treated in detail in this book, and it would merit an extensive treatment of its own.\(^{37}\) I will limit myself to a few basic observations concerning two questions: what evidence is there for a disyllabic reflex, and how was this reflex conditioned?

In my view, two of the most clear-cut pieces of evidence are the following.

– ταράσσω ‘to stir’ has a disyllabic reflex of zero grade *dhr₂gh₂-, while τράχυς ‘rough’ < *dhr₂gh₂-ú- shows the reflex with a long vowel. The alternative

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\(^{35}\) For χόλαισι beside χαλάω, one might compare other Lesbian forms with o for α where this interchange has nothing to do with the development of *CRHV, e.g. κάθαρος for καθαρός ‘pure, clean’ (see section 9.7.2).

\(^{36}\) The only apparent exception is West Greek πρᾶτος ‘first’ corresponding to πρῶτος in the other dialects (cf. Beekes 1969: 214–216). Peters (1988: 376) admits a special development of *CRHC in West Greek, but the difference πρᾶτος vs. πρῶτος can be explained in other ways. It has been argued that πρῶτος has the regular reflex of *prh₂-tó-, and that the vowel color of πρῶτος was influenced by that of πρότερος ‘earlier, before’ (Rix 1992: 73, Cowgill 1966: 149); for another explanation, see Waanders 1992: 378.

\(^{37}\) Concerning this issue, cf. the informative recent discussion by Höfler 2016/17.
form of the present θράσσω ‘to stir’ and the perfect τέτρηχε ‘is stirred up’ may reflect either *dʰr̥h₂gʰ- or full grade *dʰreh₂gʰ-.

– παλάσσω ‘to soil, spatter’ is etymologically related to πλήσσω ‘to strike, blow’ (from a root *pleh₂g-, *plh₂g-), as argued in Van Beek 2013b.

These examples (and various other alleged cases) concern *h₂, but what happened to the other two laryngeals? It has been suggested (e.g. Rix 1992: 73) that the disyllabic reflex was also threefold /eRe aRa oRo/, parallel to the long vowel reflexes, an alleged example being γένεσις ‘origin’ < *ǵn̥h₁-ti-. This development has been questioned by Peters (1980: 29). A form like γένεσις could ultimately reflect a full-grade form *ǵen̥h₁- of the root (whether this was originally present in the paradigm or analogically introduced from elsewhere). The same holds for the aorist γένετο. Peters draws attention to φαρέτρη ‘quiver’, which could reflect *bhr̥h₁-treh₂- “means of carrying”, closely resembling Ved. bharītra-. However, the Vedic form is a hapax, its meaning is not quite clear (possibly ‘finger’ or ‘arm’), and it could be a nonce formation based on carītra- ‘leg’ (cf. EWΑia s.v.). Thus, it is uncertain whether φαρέτρη may reflect *bhr̥h₁treh₂- (with an extended root *bherh₁- ‘to carry’); whether *CRHC had a threefold disyllabic reflex remains an open issue.38

As for the factor conditioning the twofold reflex of *CRHC, it is widely believed that the disyllabic treatment was regular only in words with a secondarily retracted accentuation (e.g. Rix 1992: 73, Harðarson 1993). However, as Rix remarks, this requires that we assume a later accent shift in cases with an accented long vowel reflex such as κράατος, κράατα < *kr̥h₂sn̥-t- ‘head’. This is conceivable, but not evident; excellent discussions of previous hypotheses and the problems involved can be found in Vine 1998: 66–69 and Probert 2006: 233–236. In my view (cf. Van Beek 2021b), the conditioning factor for the disyllabic reflex may have been the number of following consonants (i.e. disyllabic reflex in *CRHCC, long vowel reflex in *CRHCV), but this point will not be further pursued here.

1.2.2 *ᵣ and *ᵱ before a Glide

It is widely acknowledged that between a PGr. consonant and prevocalic glide, all Greek dialects regularly developed an a-vowel before liquids: *ᵣ, *ᵱ > αρ, αλ | *Cᵣᵱ V.39 The main pieces of evidence are the verbs in -αίρω, which never turn up with o-vocalism (*-οίρω) in any dialect, and feminine forms in -αιρα such as ἰοχέαιρα ‘who holds an arrow in her hand’ (epithet of Artemis), probably

38 For two other possible instances of a disyllabic reflex /aRe/, see Höfler 2016/17.
39 Cf. e.g. Haug (2002: 53) following García Ramón (1985: 206–208).
reflecting PGr. *isuo-kʰesr̥-ja.⁴⁰ As with *CRHV, the development of the syllabic nasals is identical to that of the liquids: cf. ὀνομαίνω ‘to name’ < *onomanje/o- < *onomm-je/o-. Thus, most scholars are inclined to posit a Common Greek development *CRi̯V > *Cᵣᵣ̥i̯V > *CaRi̯V.

There are, however, some potential obstacles. First of all, there is the possible testimony of dialectal *‑ori̯‑ < *‑r̥i̯‑ in Aeol. ὄνοιρος ‘dream’ (Sapph.). However, this form does not force us to reconstruct an old *onr̥i̯o‑, as it might rather be a reshaping of PGr. *oneri̯o‑ (as reflected in Class. ὄνειρος) under the influence of *ǭνoφ, assuming that this was the regular Aeolic reflex of *onr̥ (>).⁴¹

Secondly, it is hard to find instances of *‑l̥i̯‑ and *‑r̥i̯‑ that are demonstrably of Proto-Greek date. A possible example for *‑l̥i̯‑ is ἀλλομαι ‘to jump’, if this derives from *sl̥-i̯e/o‑ and is to be directly compared with Lat. saliō ‘id.’. However, the a-vocalism of the Latin verb is difficult to obtain from a root *sel‑, and may rather point to a root *sh2el‑ (see EDL s.v.).⁴² As for *‑r̥i̯‑, many verbs in -αίρω can be analyzed as inner-Greek denominatives to stems in -αφ, such as τεκμαίρομαι ‘to conjecture’ beside τέκμαρ ‘sign’. Likewise, a number of feminines in -αιρα stand beside forms containing -αρ‑, such as χίμαιρα ‘she-goat’ beside χίμαρος ‘he-goat’. In such cases, the a-vocalism could have arisen first as a result of the word-final development *‑r‑ > -αφ.

Notwithstanding these doubts, certain isolated formations strongly speak in favor of a Pan-Greek development to *‑r‑ > -αφ before yod. The present stem formation of χαίρω ‘to feel good’ seems to have been inherited from earlier PIE *ǵhr̥-i̯e/o‑, if we consider the cognate verbs Ved. háryati ‘id.’, Lat. horior ‘to encourage’, U. heriiei ‘wishes’.⁴³ Another example of considerable antiquity

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⁴⁰ Peters 1980: 223–228 argues that ἰοχέαιρα contains the word for ‘hand’, but doubts whether the form can reflect PGr. *isuo-kʰesr̥-ja; for this reason, he envisages a reconstruction *‑ǵheserih₂ (analogous to the motional feminine πίειρα, Ved. pivarī́) or *‑ǵhesrih₂, and argues that an outcome *iţχειρα would be expected in both cases. In the end, he asks whether verse-final ἰόχειρα may be a Homeric Streckform which secondarily obtained its suffix -αιρα from elsewhere. I find it much more likely that the form directly reflects *isuo-kʰesr̥-ja, but the issue will not be further pursued here.

⁴¹ See Peters 1980: 198 and section 9.5. Aeol. ὄνοιρος has also been compared to Arm. amař ‘dream’ < *onőri̯o-, a pre-form which would yield ὄνοιρος directly by Osthoff’s Law, but again, positing two pre-forms *onőri̯o- beside *oneri̯o- would be unparalleled from a morphological (or derivational) perspective.

⁴² Moreover, ἀλλομαι may have been influenced by the Hom. root aorist ἀλτο (*‑ álto). Examples like ἄλλω ‘to hew’ and σφάλλω ‘to stumble’ can be derived from older nasal presents, and in any case their root does not undergo ablaut; they are therefore irrelevant for the present discussion.

⁴³ Cf. García Ramón (1985: 207). The reflex in Ved. háryati differs from that in mriyáte ‘to die’, which must contain the regular Indo-Aryan reflex of PIE *Cr‑ie/o‑ (cf. Lat. morior <
could be μεγαίρω ‘to begrudge’, cognate with Arm. mecarem ‘to hold in esteem’, which probably continues the same pre-form and illustrates an intermediary stage of the semantic development leading from μέγα ‘big’ to μεγαίρω.

Another issue concerns the relation between the outcome *-arj- (in the verbal formations just discussed) and the different syllabification found in forms like gen. pl. τριῶν ‘three’ or the feminine agent nouns in -τρια (already in Myc. -ti-ri-ja, -ti-ra2 < PGr. *-tria, *-triā- < PIE *-tr-ī(e)h2-. According to Ruijgh (1992: 78 ff.), the outcome in τριῶν and -τρια is regular, and the development to *-aRj- (in presents in -ie/o- and motional feminines in -ja) occurred whenever *j was analogically re-introduced, as a result of which the syllabic sonorant developed secondarily. However, the converse could also be defended: the syllabification reflected in τριῶν could be analogical after the dat. τρισί or acc. *trins, and the feminine agent nouns in *-tr-ih2- also contain a morpheme boundary.44 In this connection, the form πότνια ‘lady’ (Myc. po-ti-ni-ja) is of prime importance. Since no base form with the stem *potn- existed, πότνια (rather than πόταινα*) must display the regular reflex of *potni̯a (ultimately from PIE *potnih2). But even this is not the end of the story: Peters (1980) has argued that in the forms *-trja and *potnja (reflected in -τρια and πότνια), the morpheme *-ja may have been restored, and that the sole example of a regular reflex of *-Cri̯a would be ἀρουρα ‘arable land’ (Myc. a-ro-u-ra) < *aro-yr-ja, with regular loss of yod in this environment.

Although these issues certainly merit a more detailed discussion, the exact scenario need not concern us here: the main point is that Greek furnishes no evidence for a prolonged retention of syllabic liquids before *j. Whenever *-trj-arose in Proto-Greek, it seems to end up with an anaptyctic -a- before the liquid in all Greek dialects. In this connection, the development of the syllabic nasals in the same environment is also relevant:45 in the inherited present stems βαίνω ‘to walk’ < *γw̥njo- (cf. Lat. veniō ‘to come’) and μαίνομαι ‘to rage’ < *mn̥i̯o- (cf. Ved. máñyate ‘thinks’), we are clearly dealing with an early development *n (including original *m) > *an before a glide, and analogical restoration is unlikely. There is every reason to think that cases like χαίρω, with a-vocalism before the liquid, arose as part of the same development.

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44 For a recent discussion of these questions of syllabification in an optimality theory framework, see Cooper 2014, chapters 6 to 10.

45 Cf. García Ramón (1985: 207).
As for the outcome of the syllabic liquids in the environment PGr. *C̣_{u̯}V, it is difficult to cite a convincing example. The problem can be illustrated by an example containing a nasal: μανός 'thin, sparse'. This adjective has ἀ once in Empedocles (fr. 75.2 DK), but ῥ generally in Attic, and it therefore presupposes a pre-form *manu̯ó-. However, this *manu̯ó- probably does not reflect PGr. *mn̥-u̯o-, because the gloss μανύ (Hsch.) suggests that the form is due to the thematicization of an older u-stem, *mnH-u-.46 Such a proto-form is corroborated by Arm. manr 'small' (gen. manu).47 The same type of formation may underlie Ion. καλός, Att. καλός, Boeot. καλφός, if my idea that the underlying root ended in a laryngeal (section 10.5.3) is correct.48 Finally, the neuter φάρος 'cloth' (Hom.+, Myc. pa-we-₂) has been compared in previous scholarship with Lith. būrva 'color, colored garment' and būrė 'sail', but according to Fraenkel (lew s.vv.), the former was probably borrowed from Polish barwa, itself from MHG varwe (MoHG Farbe 'color'), and the latter is considered to be a loan from Finno-Ugric. Thus, since the etymology of *pharu̯os remains uncertain, it is unknown whether this word contains a reflex of *l.49

1.2.3 Word-Initial *r̥‑ and *l ̥‑
A number of discussions of the development of the syllabic liquids in Greek distinguish a special Common Greek outcome ἀρ‑ in word-initial position.50 However, if the phonotactics of PIE did not allow a word-initial onset *r‑, as seems likely, it is doubtful that syllabic *r‑ existed in this position.51 Furthermore, it has become clear that many apparent cases of ἀρ‑ can or must be derived from a pre-form with PIE *h₂r‑.52 In word-initial *HLC‑, an epenthetic vowel developed in early proto-Greek; in the ensuing *H₂LC- the shwa was sub-

46 Cf. Lamberterie (1990: 187–194).
47 Lamberterie (1990: 192–193) proposes that *mnH-u- 'sparse, rare, thin' contains the verbal root of Lith. mìnti 'to tread, break flax'; if so, we might assume that an older meaning of the adjective was 'broken into pieces'.
48 In section 10.5.3, I argue that καλός reflects a thematicization of PGr. *kålū‑ < PIE *klH-u-, containing the root of Lith. kilti 'to rise, emerge', Lat. -cellō 'to stand out, excel'.
49 García Ramón (1985: 210) also remarks that there is no good evidence for the reflex of *Cr̥u̯V, but makes a possible reservation concerning Hom. φάρος and Myc. pa-we-₂. Since he also accepts that φάρος could be a loanword, I do not understand on which basis he concludes that "the Common Greek form must be reconstructed as *pʰwrwos > *pharwos".
50 Thus already Schwyzzer (1939: 342): "ἀρ erscheint im Anlaut und Auslaut, vor einstigem Halbvokal und vor Vokal". Cf. also Morpurgo Davies (1968) and García Ramón (1985).
51 Cf. Ruigh (1992: 86 n. 31).
52 Cf. Haug (2002: 50).
sequently colored by the neighboring laryngeal. For instance, the following words may reflect full grade *h₂r̥C- or zero grade *h₂rC-:

- ἀρκέω ‘to ward off, protect; be sufficient’ beside Hitt. ḫar(k)-zi ‘to hold; keep’, Lat. arceō ‘to enclose; debar, keep away; protect’;
- ἀρτύω ‘to arrange, prepare’ (cf. ἀρτύς· σύνταξις ‘arrangement, ordering’ Hsch.) beside Lat. artus ‘joint’, Ved. ṛtú- m. ‘order, fixed time’.

Moreover, instances of ἀ‑ may reflect *u̯r̥C‑ and, in forms with psilosis or Grassmann’s Law, *sr̥C‑. A possible case of *sr̥C‑ is ἄρχω ‘to be first; rule’. The etymology of this verb has been variously interpreted: *h₂r̥-ske/o‑ with the root *h₂er‑ ‘to fit’ (Klingenschmitt 1974: 274 n. 1; accepted by Le Feuvre 2015: 506–507), or *ṛgʰ-e/o‑ to a root PIE *regʰ- as reflected in MHG pret. rac ‘arose, protruded’ and regen ‘to incite’ (Tichy apud LIV² s.v. *regʰ). In the latter analysis, it would be an instance of word-initial *r-. In my view, ἄρχω rather reflects PIE *sr̥ǵh-e/o‑ or perhaps rather *sr̥ǵh-ske/o‑ ‘to stand out’, to the PIE root *sr̥ǵh‑ reflected in Hitt. sarku‑, sargau‑ adj. ‘pre-eminent, powerful’ < *sr̥ǵh(e)u‑, sarkiske/a‑zi ‘to be eminent’ and Toch. B šärk‑ ‘to surpass’. This new proposal establishes ἄρχω as an instance of the treatment of word-internal *r in Ionic-Attic. For further details, see section 9.6.2.

The only potential (though uncertain) piece of evidence for initial *r‑ in Proto-Greek is ἄρσην ‘male’ (Att. ἄρρην, Thess. ορσεν, Arc. ορεν, τορρεντερον), but there the place of the anaptyctic vowel may have been influenced by the variant ἔρσην. This complicated example will receive further discussion in section 9.1.7.

There was no phonological constraint against word-initial *l‑, but there are no examples for its reflex in Greek. For instance, the root underlying ἄλκη ‘mar-

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53 This phenomenon is generally known as “Lex Rix” (Rix 1970) and mostly thought to apply to both liquids and nasals. On “HLC,” see also Vine (2005).
54 The comparison of the particle ἄρα ‘then, therefore’, Hom. ἄρ with the Baltic conjunction Lith. iñ, Latv. īr ‘and, also; even’ and/or with the question particle Lith. ař, Latv. ar, has been taken to point to a reconstruction *r. This is based, essentially, on the identification of ἄρα with Homeric ἄρ, ῥα (cf. Hoenigswald 1953: 289–290, with a review of older literature). Upon this view, ἄρα arose as a conflation of ἄρ and ῥα, which are both supposed to be outcomes of a pre-form *r. Haug (2002: 52) accepts the reconstruction *r for the Greek forms, but admits that all kinds of special accidents may have taken place in a monosyllabic clitic, and therefore does not use ἄρα, ἄρ, ῥα as evidence. I agree with this conclusion, but since the origin of the variation ἄρ ~ ῥα remains obscure, I am not so sure about the reconstruction *r. It is possible to connect ἄρ with the Baltic forms if we reconstruct a particle *h₂r, *h₂ér (EDG s.v. ἄρα, cf. also DELG), but this would leave the origin of ῥα unaccounted for. Another option is to reconstruct ἄρ, ῥα as *ṛ; this would explain the existence of a Mycenaean particle -a₂ (in o-da-a₂, o-de-qa-a₂) but it does not yield a meaningful etymology.
tial courage’ was *h₂lḱ- with an initial laryngeal, as shown by the related ἀλέξω ‘to ward off’ < *h₂leḵ-s-. In various words with initial λα-, this sequence may reflect *lh₂C-, *sl- or *u̯l- (see chapter 10). Ruijgh (1992: 86 n. 31) draws attention to λεπτός ‘delicate, small’, a verbal adjective in -to- to λέπω ‘to peel, scale’ that is attested already in Myc. re-po-to. As one would expect a pre-form *lptó- with zero grade root in this type of formation, roots of the structure *leC- apparently generalized the full grade at an early date.

1.2.4 Word-Final *r and *l
In word-final position, we only have evidence for *r; there are no clear examples of *l. I will postpone the discussion of word-final *r to chapter 9, when we will have obtained a clearer picture of the word-internal developments. For now, let me briefly mention the two main issues. First, various scholars have posited an early, Pan-Greek change *r > -αρ which took place prior to the vocalization of *r in word-internal position. Others assume that *r would develop to either -αρ or -ορ depending on the dialect, just as in word-internal position, and assume that only the place of the anaptyctic vowel (*ər rather than *rə) was different in this position. We will be in a better position to overview the arguments once we have treated the evidence for the reflex of word-internal *r in Mycenaean and the alphabetic dialects (in chapters 2 and 3). Secondly, a special issue is the outcome seen in ὑπόδρα ‘(looking) sternly’ < *upo-dr̥ḱ, which has been interpreted by Hoenigswald (1988) as evidence for *r > -ρα. Barnes (2011), however, has ascribed the different reflex in ὑπόδρα to relative chronology, assuming that word-internal *r was vocalized before the loss of word-final stops. Again, we will be able to evaluate this piece of evidence more effectively once we have treated the word-internal evidence.

1.2.5 *r and *l before Nasals
Haug (2002: 54) has tentatively proposed that *r and *l developed a-vocalism in all Greek dialects in the environment *C_NV. His evidence consists of Les-
bian and Thessalian στάλλα (Aeolic for στήλη ‘stele’) and the proper name Myc. wa-ni-ko. Although both examples mentioned by Haug have an outcome -al-, in his view the place of the anaptyctic vowel may have been either -aL- or -Lə-.

Most handbooks do not treat this issue, which could be taken as an indication that they reject a special development for *rn and *ln. Indeed, the items στάλλα and wa-ni-ko do not prove the claim made by Haug. First of all, the reconstruction he proposes for στήλη is not certain. The handbooks compare it with OHG stollo ‘support, post’ (m. n-stem) and related Germanic forms; this would presuppose a pre-form form with *stl-n-.

However, the alternative reconstruction of στήλη as *sth2-sleh2- by Risch (1974: 110; accepted also by Sihler 1995: 213) from the root *steh2 -‘stand’ cannot be excluded. Against the reconstruction *stl-n-eh2- it can be objected that a verbal root *stel- in the meaning ‘to stand’ may be found in Germanic, but it does not exist in Greek (στέλλω means ‘to equip’).

There are also phonological objections to a reconstruction *stl/nā- for στήλη, στάλλα. It is questionable whether a geminate resulting from *-ln- would have taken part in the first compensatory lengthening in Ionic-Attic (cf. section 10.5 on βάλλω, κάλλος and similar forms). Moreover, one expects *stl/nā- to develop o-vocalism in Aeolian dialects, even if there is no direct evidence for the outcome of *l in Lesbian (cf. sections 3.3.4 and 10.6). In view of these objections and of Risch’s alternative reconstruction, Aeolic στάλλα cannot be considered probative for Haug’s thesis.

As for Myc. wa-ni-ko, this is often interpreted as a diminutive reflecting *μυρ-isko- that would contain the stem of ἀρήν ‘lamb’. However, the root of ἀρήν must have been *μυρh1- in view of πολύρρην ‘rich in lambs’ and Ved. úran- ‘lamb’, with a vocalic onset reflecting the root-final laryngeal. Therefore, the oblique stem ἀρν- < *μυρn- must be analogical for earlier *μυρēn- < *μυρh1-n-, with *μαρ- taken from the nominative *μαρēn < *μυρh1-ēn. Thus, even if wa-ni-ko is to be connected with ‘lamb’ (which is uncertain), it cannot be used to determine the regular reflex of *rn.

In fact, there is ample further material for the development of *r, l in the environment *C_nV. Most of the evidence is found in nasal present formations, where the vowel always appears before the liquid. These forms will be discussed in sections 9.4 (*-rn-) and 10.5 (*-ln-). Anticipating my conclusions, the
evidence suggests that the vocalization of *-r̥n- and *-l̥n- took place in the individual dialect groups and cannot be ascribed to Proto-Greek.

1.2.6 Conclusions on Early Anaptyxis
- Cases like ἀρήν ‘lamb’ where a syllabic liquid allegedly stood before a vowel are in fact cases of the environment *C_lHV.
- Before semivowels, *r̥ was eliminated in Proto-Greek; it developed to -αρ- before *i, at least when the sequence *-r̥i̯- underwent morphological restoration. There is no secure evidence for *-l̥i̯-, *-l̥u̯- or *-r̥u̯-.
- The evidence formerly adduced for word-initial *r̥- > Common Greek ἀφ- is obsolete in the light of the laryngeal theory.
- The development of word-final *r̥ is still debated and will be discussed in section 9.4.

It is also important to distinguish chronological levels: the developments *C_lHV > *CαLV and *C_r̥i̯V > *Cαr̥i̯V took place at an early date, probably as early as Proto-Greek. In word-initial and word-final position, however, the dialect groups may have a diverging treatment. Nevertheless, as we shall see in section 9.5 there is strong evidence that word-final *-r̥ developed earlier than word-internal *-r̥-.

From now on, our main focus will be on the environments *C_lT (where *T is any occlusive or *s) and *C_lNV. Unless otherwise indicated, the debate about the “double reflex” αφ ~ ρα in Ionic-Attic concerns these environments.

1.3 The o- and u-Colored Reflexes of *r̥ and *l̥ in the Environment *C_T

In most dialects, the anaptyctic vowels in the reflexes of the syllabic liquids may appear with different qualities. For instance, in literary Lesbian we find both α (e.g. καρδία, ὄναρ) and ο (ἄμβροτε, στρότος). Differences of opinion exist on the cause of these different reflexes, especially concerning the o-colored reflex in Mycenaean, Arcado-Cyprian and the Aeolic dialects. It has been debated whether the o-reflex in these dialects was the unconditioned outcome of PGr. *r̥ and *l̥, or whether it occurred only in some sort of labial environment. In section 1.3.1, I will give only a brief introduction to this problem; the evidence will be discussed in full detail in chapters 2 and 3.

Secondly, a few remarks will be devoted to the relatively marginal evidence for u-vocalism in Ionic-Attic (section 1.3.2). A third problem concerns the relation between the vocalization of the syllabic liquids and that of the syllabic nasals in those dialects which attest o-colored reflexes of both. In section 1.3.3, I will argue that these two developments must be viewed independently.
1.3.1 Which Dialects Have a Regular o-Colored Reflex?
As is well-known, o-colored reflexes of *r̥ appear in Arcado-Cyprian and the Aeolic dialects, and Mycenaean also spells the outcome with signs of the o-series. The most important question is whether the o-colored reflexes are conditioned by their phonetic environment or, put differently, how serious the evidence for a-vocalism in these dialects really is. Since Morpurgo Davies (1968), it has been remarked time and again that the o-reflex frequently appears in a labial environment. Morpurgo Davies herself proposed a strict condition: only a preceding *u̯- would have conditioned the o-coloring in Arcado-Cyprian and Mycenaean, and the normal reflex of *r̥ in these dialects would be ra or ar. However, anticipating the conclusions of chapters 2 and 3, I have not found a compelling reason to doubt an unconditioned o-colored reflex in these dialect groups, with the possible exception of Mycenaean, which may have preserved *r̥.

Most scholars do not doubt that an unconditioned a-colored reflex is regular in Ionic-Attic and the West Greek dialects. A notable exception is Bader, but her suggestions have not been taken very seriously, probably because she did not try to establish a distribution between a- and o-colored reflexes, and resigned to the conclusion that both reflexes may appear in any dialect without further conditioning (Bader 1969: 57–58).

The potential instances of o-vocalism in Ionic-Attic will receive further discussion in chapter 9; for most of them alternative explanations are available. There is also one West Greek dialect that shows evidence for o-vocalism: as I will argue in chapter 3, in Cretan the development of *r̥ may have been conditioned by the preceding segment (labial versus non-labial).

1.3.2 The u-Colored Reflex
In various branches of Indo-European, the outcome of the syllabic liquids depended on surrounding consonants. In most cases where we find such a conditioned development, a preceding or following labial consonant colors the anaptyctic vowel to u. Thus, in Balto-Slavic the normal reflexes are ir, il, whereas convincing examples of ur, ul are found mostly after labiovelars. In Indo-Aryan, a similar conditioning determined the outcome of *l̥ before laryngeals: contrast e.g. Ved. tîrás ‘across’ < *tr̥h₂₂̣ns (cf. Lat. trâns ‘id.’) with purás ‘before;

62 Bader’s reference to the supposedly unconditioned double reflex of the syllabic sonorants in Balto-Slavic is erroneous, because the conditioning factor for -uR- was a preceding labiovelar stop: see below.
63 This was originally proposed by Vaillant, and has been reinforced by Kortlandt (2007 = 2009: 39–41).
in front’ < *prHós (cf. πάρος ‘before’). Phonetically, the anaptyctic vowel was rounded under influence of the preceding labialized stop.

It would not be surprising if similar effects were found in Greek. An extensive discussion of potential u-colored reflexes in Greek is Bernabé (1977: 275–283). However, most of his material concerns syllabic nasals and is therefore not directly relevant to our discussion, as these probably vocalized earlier than the syllabic liquids, and in a different way (cf. section 1.3.3 below). Words with u-vocalism that cannot be inherited must also be left out of consideration: well-known examples are πύργος ‘fortification’ (cf. Goth. baurgs ‘citadel’) and τύμβος ‘tumulus’ (cf. τάφος ‘burial’), which are usually considered to be borrowings from a different, unattested Indo-European language into Greek.

Other reconstructions mentioned by Bernabé do not strike me as particularly convincing, for instance:

- κύρτος ‘fishing net’ (Sapph.+) has been reconstructed as *kr̥to‑ and compared to Proto-Germanic *hurdi‑ ‘wickerwork (door)’ (Goth. haurds ‘latticed door’, OHG hurt ‘hurdle, grate, raling’ and other forms, cf. EDPG s.v.). However, the type of referents of these words renders any etymology open to doubt, and the Germanic words are more likely to be related to Lat. crātis ‘hurdle’ < *krh₂-ti‑, with a root that cannot account for the Greek form.
- φύλλον ‘leaf’ beside Lat. folium ‘id.’. The two must not be reconstructed as *bhl̥i̯o‑ (as per Bernabé 1977: 283) but may rather reflect *bh(o)lio‑, with a raising *o > υ before *‑li̯‑ as proposed by Vine (1999: 564–569).
- σκύλλω ‘to tear apart, snatch’ (A.+) and σκάλλω ‘to hoe; stir up’ (Hdt.+) are supposed to be vocalizations of *skl̥-i̯e/o‑ or *skl̥-i̯e/o‑ with a “reduced grade” by the etymological dictionaries. However, upon this account (accepted by Bernabé 1977: 277) it would be difficult to account for the two divergent reflexes. If there is indeed an etymological connection, one might follow Vine (1999: 566) in reconstructing a pre-form with o-grade for σκύλλω, with the same raising as in φύλλον.
- The comparison between σφῦρα ‘hammer’ and σφαῖρα ‘ball’ (Bernabé 1977: 283) does not seem cogent to me in view of the semantic divergence; there are no ascertained cognates outside of Greek.

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64 Cf. Beekes (2011: 151). A similar rule has been proposed for Latin by Meiser (1998: 63–64): *r would have yielded ur after labiovelars and after u̯. This rule is not widely accepted, however: cf. Zair (2017) for criticism. Frotscher (2012) has proposed that word-final *r in Proto-Italic developed to -ur after labials (Lat. femur ‘thigh’, iecur ‘liver’), but -er elsewhere (Lat. iter ‘road; über ‘udder’ < *oufr̥).

65 Cf. LIV² (s.v. ?2.*(s)kel‑).
Nevertheless, even if such cases are left aside, some interesting candidates to show an u-colored outcome remain. I will now first discuss two promising cases: λύκος ‘wolf’ and the adjective κυρτός ‘humped’.66

 Usually, λύκος is considered an instance of metathesis from PIE *u̯lkʷo-. However, when *u̯lkʷo- came to be realized as *u̯lκʷo-, it would be natural that the anaptyctic shwa was rounded due to the presence of labialized consonants on both sides, after which *u̯lukʷo- yielded λύκος. The chronology is unproblematic: the rounding may have taken place before [lə] developed into λα (the regular reflex, cf. chapter 10). The rounding of an anaptyctic vowel and subsequent delabialization is paralleled by γυνή ‘woman; wife’, which no doubt reflects *gʷnā. Moreover, compare the reflex of a syllabic nasal in πύξ adv. ‘with the fist’ < *pn̥kw‑s (van Brock 1972), with the root of ‘five’ and related to OE fyst ‘fist’, OCS ｐέστα ‘id.’ < *pn̥kw‑sti-.67 Not all anaptyctic vowels in the prehistory of Greek were rounded by neighboring labiovelars; the development is not found in early instances of anaptyxis preceding the loss of laryngeals (e.g. βαρύς < *gʷr¬u- < *gʷH‑u-). This means that the anaptyctic vowel in *gʷnā developed after *gʷar‑ had become *gʷar‑.68 A late date of *gʷnā > *gʷnā is corroborated by Boeot. βανά, where the anaptyctic shwa apparently developed after the elimination of the labiovelars. At any rate, explaining λύκος as a regular vocalization of *u̯lkʷo- would be an attractive alternative over assuming an irregular metathesis. Chronologically, this would place the anaptyxis after *l before the disappearance of labiovelars and before the reduction *u̯l‑ > λ-, i.e. in or before the Mycenaean period.

 A second case is the adjective κυρτός ‘bulging (of a wave); humped (of shoulders), hunchbacked’ (Il.+), later ‘convex’. Its root has been compared to that of Lat. curvus ‘curved, convex’, but as De Vaan (EDL s.v. curvus) remarks, *kur‑ is not an allowed PIE root structure, and there is no PIE root *kwer‑ meaning ‘turn; round’vel sim. However, whether or not the etymological connection with Lat. curvus is correct, root structure constraints do suggest a reconstruction

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66 Meier-Brügger (1990) proposed that κυλλός ‘crooked, club-footed’ reflects *kʷhó-, with the root *kʷer‑ ‘turn’. This is contradicted by the reflex of e.g. *gʷfr‑ in βάλλω (on which see section 9.5.1). I therefore hesitate to accept this etymology. To compare the pair κυλλός / βάλλω with γυνή beside Boeotian βανά, as done by Meier-Brügger (1990: 31 with n. 7), is not to the point: in the latter case we are clearly dealing with dialectally different treatments of the same word.

67 Compare also κύκλος which may reflect *kʷokʷlo-, *kʷkʷlo- or even *kʷekʷlo-. Cases of Cowgill’s Law (e.g. νύξ, ὄνυξ) are perhaps not directly comparable because their full vowel was colored by a contiguous labiovelar under more specific circumstances.

68 Incidentally, this proves that Lindeman’s Law in Greek is an inner-Greek affair, rather than an inheritance from PIE.
The root *kwr‑tó‑ for κυρτός. In fact, the root *kwr‑er‑ ‘to cut off, amputate, mutilate’ is an excellent candidate, as various of its derivatives denote corporeal defects, e.g. Ved. karná‑ ‘crop-eared’, CS khr̃ ‘mutilated (with ears slit or croppped)’, Sln. kın ‘maimed, mutilated’ (from Proto-Slavic *kъrnъ ‘maimed’). The meaning ‘humped; hunchbacked’ of κυρτός may easily have developed from ‘truncated, blunt’. Furthermore, it is attractive to compare κυρτός directly with Lat. curtus ‘mutilated’, equally from *kwr‑tó‑, and with Lith. kur̃čias ‘deaf’, kur̃tas ‘id.’ This provides κυρτός with a semantically attractive etymology which also explains its u-vocalism.

In addition to these two forms, three more potential (but rather complex) examples must be discussed:

– σύρξ ‘meat’, which is mentioned as the Aeolic and Doric form of σάρξ ‘id.’ (< PGr. *tu̯r̥-) in the Etymologicum Magnum, and as Aeolic in σύρκεσι· σαρξίν. Αἰολεῖς (Hsch.);
– σύρω ‘to draw, drag’ (Ion.-Att.), which is surely related to σαίρω ‘to sweep’ (S.+, also epigraphically in Cretan) < PGr. *tu̯r̥-i̯e/o‑;
– Τυρταῖος, which is often supposed to mean ‘born on the fourth day’, and therefore thought to derive from *τυρτή ‘fourth day’, which would continue a relic form of the ordinal PGr. *k*tu̯r̥tó‑ ‘fourth’.

Concerning Τυρταῖος, we must take into account that the first part of τράπεζα ‘table’ is usually thought to derive from *kwr‑ as well.

In all these examples we are faced with the problem of accounting for a double reflex of *u̯r̥: in part of the cases *r̥ appears to have undergone its normal vocalization, but in other cases there seems to have been a re-vocalization of *u̯r̥ to *ur. If that is indeed what happened, we should be able to indicate a phonetic factor that caused this re-vocalization. On the other hand, we must reckon with the possibility that υρ reflects not *u̯r̥, but something else. What follows now is an attempt to make sense of the data.

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69 Chantraine (DELG s.v.) also analyzes κυρ‑ as the u-colored reflex of a zero-grade root, but he does not explain how the vowel originated. There is no need to ascribe the u-vocalism to the allegedly expressive nature of this word, as per Bernabé (1977: 281).

70 Compare also Av. karəna‑ ‘deaf’, Latv. kūnš ‘id.’ (perhaps via *with defect ears’), and with a different suffix Ved. kr̥dhú‑ ‘maimed’.

71 Various Balto-Slavic words denoting corporeal defects are derived from the PIE root *kwr‑er‑. The consistent reflex (*u)r of the vocalized zero grade in these words confirms the idea of a conditioned rounded outcome of the syllabic sonorants in Balto-Slavic after labiovelars (Kortlandt 2007).

72 EM s.v. sarkāzō (Kallierges 708): Ετυμώτερον θε λέγουσιν οἱ Αἰολεῖς σύρκα, παρὰ τὸ ἀποσύρε‑ σθαι τὸ δέρμα ἀπ’ αὐτῆς· τὰς γὰρ σάρκας σύρκας οἱ Δωριεῖς λέγουσιν· παρὰ τὸ σύρω σύρξω, σύρξ καὶ σάρξ.
Starting with σάρξ beside σύρξ, the latter form may reflect an o-grade *tuɔrk-, with raising due to Vine’s version of Cowgill’s Law (Vine 1999: 570–572, elaborating a suggestion by Schindler 1972: 34), whereas σάρξ would contain the normal zero grade reflex. This possibility suffices to eliminate σύρξ from the compelling evidence for re-vocalization of *uṛ.

As for σύρω beside σαίρω, the evidence for a PIE root *tuer- ‘to sweep, rush’ includes at least the following forms:

- pres. *tuer-e/o- > PGmc. *pweran- (strong verb) > OE pweran ‘to twirl, stir’, OHG dweran ‘to stir up’, and also Ved. tvárate ‘to rush’.
- pres. *tuɾ-ie/o- reflected not only in σαίρω, but also in ON pylja ‘to sweep, rush’ (Kroonen, EDPG s.v. *purjan-).

Until the treatment by Vine (1999: 570), the twofold outcome of *tuɾ-ie/o- in Greek (σαίρω, σύρω) was usually left unexplained. As Vine remarks, however, the two reflexes cannot be ascribed to dialectal differences, as both verbs are attested in Ionic-Attic. If σαίρω reflects the regular treatment of *tuɾ-ie/o-, as seems likely (with an early, Common Greek vocalization *t-r- > -ar- before yod), what does σύρω reflect? I will discuss two options.

First, one could analyze σύρω as a secondary denominative based on nominal forms like *συρτός ‘stirred, in sweeping motion’ (cf. κολοσυρτός ‘sweeping motion, tumult’ ll., although the element κολο- remains enigmatic; cf. DELG s.v.). This *συρτός could be the regular outcome of *tuɾ-tó- if we assume (i) that *tuɾ- > *tuar- would have yielded συρ- before an occlusive, whereas (ii) before yod, *tuɾ- was vocalized as *tuar- > *tuar- at an earlier date. In other words, the development would be conditioned by the type of consonant that followed. However, the form σάρξ is left unaccounted for in this scenario, which predicts that *tuɾks would develop into σύρξ even in Ionic-Attic. One could surmise that the re-vocalization took place only in pretonic position, hence *tuɾtó- > *tutó- whereas *tuɾks was retained and later yielded σάρξ. However, for want of further examples, this is mere speculation, and one might also doubt the reconstruction *tuɾ-tó- underlying -συρτός altogether.

A second possibility to account for σύρω emerges when we consider that σύρξ could reflect an o-grade *tuɔrk- (cf. above) whereas σάρξ would contain the normal zero grade reflex. Vine leaves open the morphological motivation of the o-grade in σύρω, but I wonder whether -συρτός (in κολοσυρτός ‘sweeping

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73 Schindler’s argument for reconstructing an ablauting paradigm *tuork- beside *tuɾk- is that the expected outcome of *tuɾk- would be *tɾɔk- on account of τράπεζα < *tupediə. This cannot be upheld: see sections 2.5 and 2.6 for a full discussion of τράπεζα and related issues.
motion’) may reflect an o-grade action noun *tuór-to- of the type φόρτος.74 The assimilated form *tsuór-to- may have developed into *tsuúrito- by Cowgill’s Law, and then simplified to *tsurto-. This presupposes that the anaptyctic vowel in *tuór-je/o- (> σαίρω) had already developed into a before Cowgill’s Law affected the o-grade (otherwise, it would be difficult to understand why a shwa was not rounded in the same environment), but this is an unproblematic assumption. We would then arrive at the following relative chronology:

(1) *-r̥i̯- > *-ari̯- and assimilation *tu > *tsu, in either order (yielding *tsuárje/o- beside *tsuóritó-, *tsyrk- beside *tsyórk-);

(2) Cowgill’s Law operates in the context *tuor (perhaps more generally *TuôR, cf. Vine 1999), probably followed soon by a simplification *tu- > *ts- before u (yielding *tsúrito-, *tsúrk-);

(3a) Initial *tsu- > *ts- elsewhere, yielding *tsurje/o- (> σαίρω), *tsỹk- (> σάρξ);

(3b) Creation of denominative *tsuri̯e/o- (> σύρω).

Thus, it cannot be excluded that συρ- in the forms σύρξ and σύρω reflects pre-forms with an o-grade (*tsuórk- , *tsuór-).

Concerning Τυρταῖος, assuming that the derivation of this name from ‘fourth’ is correct, the expected vocalization of the ordinal would be *kwtu̯r̥tó-. In Proto-Greek, this would undergo simplification of the onset to yield *tyrtó-, and the absence of assimilation in this form could be accounted for with the assumption that *kwtu- was still intact when *tu- > *tsu-. Could it be that this *tyrtó- ‘fourth’ was re-vocalized as *turtó-? From a purely phonetic viewpoint this is conceivable, but the idea seems contradicted at least by σάρξ reflecting *tsỹrk-. Moreover, it must be taken into account that the first part of the word for ‘table’, attested as τράπεζα and Myc. to-pe-za, is usually reconstructed as *kwtu̯- as well. In that word, however, there is no trace of the putative *μ.75

To be sure, it would be possible to resolve these issues. The reconstruction of ‘table’ as referring to a four-legged object is not certain, as we will see in chapter 2. For the word for ‘meat’, one might assume that an earlier *turk- was reshaped as *tsyrk- under the influence of a full grade *tsórk-. This leaves us with Τυρταῖος, but it would not be prudent to base far-reaching conclusions on the interpretation of a personal name.

To conclude this section, κυρτός < *kwr̥tó- and λύκος < *ylkwo- may well display rounding of an anaptyctic shwa next to a labiovelar. One of these examples concerns *r, the other *l, so there is not much evidence to go by. The phonetic

74 In fact, this *tuór-to- could be identical to the pre-form required for the Avestan adj. ąhāa- ‘quick’ (on this word, cf. EWĀia s.v. TVAR).

75 Moreover, evidence for a simplification *tyugh > *tr under certain conditions must be taken into account: cf. section 2.7 on *kymetr- ‘four’ and *kymērto- ‘fourth’.
environment in *u̯lkʷo*- is highly specific: in this word, the syllabic liquid was flanked by two labialized sounds. Nevertheless, as far as I have seen there is no counterevidence against a development *Kʷr̥- > *Kur- (*Kʷ = any labiovelar), as the vocalism of βραδύς ‘slow’ from *gʷrd-û- may be analogical (see chapter 4).

1.3.3 The o-Colored Reflex of the Syllabic Nasals

The Greek vocalization of the syllabic liquids is often compared with that of the syllabic nasals.76 The rationale behind this comparison is that all syllabic sonorants may be reflected with either a- or o-vocalism, and that the Greek dialects which generally have o-colored reflexes of *r̥ also have instances of o-vocalism from *η or *η.

There are, however, also some important differences between the regular development of *r̥ and that of the syllabic nasals. The following brief discussion will not solve all problems concerning the syllabic nasal reflexes; the goal is merely to argue that the changes affecting the syllabic liquids were chronologically later, and therefore best considered independently.

First of all, we must note that the similarities between the two changes are only superficial. The unconditioned regular reflex of *r̥ is ‑ρο‑ in the Aeolic dialects, ‑ορ‑ in Arcadian (see chapter 3), and either r̥ or ‑or‑ in Mycenaean (chapter 2). However, there is no dialect which has ‑o‑ as the unconditioned reflex of the syllabic nasals: the normal reflex of *n̥, *m̥ in all Greek dialects, including Mycenaean, is a.77 This fact by itself suffices to show that we are dealing with two distinct developments. Furthermore, the phonetics underlying the two developments are different. The nasal feature completely disappeared when *n̥, *m̥ were vocalized, probably through an intermediary stage [_utf]. On the other hand, *r̥ and *l̥ were vocalized due to the phonemicization of an anaptyctic vowel; in this process the liquids were retained as independent segments.78

The main problem is to explain the conditioning of the reflex *n̥, *m̥ > o. Many scholars accept the thesis, first formulated for Mycenaean by Risch (1958: 160 n. 40) and taken up by Morpurgo Davies (1960), that the o-colored reflex is due to a neighboring labial consonant.79 The strongest examples for this devel-

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76 For instance in Risch (1955), Bader (1969).
77 Cf. Thompson (2010: 191), with a discussion of the most important Mycenaean material, citing a-ki-ti-to /aktiton/ ‘uncultivated’ < *γ- and dat. pl. te-ka-ta-si /taktasi/ ‘builders’ < *tektp-si.
78 Cf. Wathelet (1970: 175), who also remarks that an earlier vocalization of the syllabic nasals (as compared with the syllabic liquids) is paralleled in Indo-Iranian.
79 Thus, for Mycenaean, Lejeune (1972: 198), Leukart (1994: 110), Sihler (1995: 98). These three
opment are a-no-wo-to /ano\woto- ‘without handles’ < *an-ousn-to- (cf. Hom. ούκτα ‘ears’) and e-ne-wo* ‘nine-’ < PGr. *en(n)eμη (Class. ἐννέα).80 Conditioning by a neighboring labial consonant would also explain why Myc. has a-mo ‘wheel’ (also nom. pl. a-mo-ta, dat. pl. a-mo-si) corresponding to Hom. ἀρμα, ἀρματα ‘chariot’, and pe-mo ‘seed’ (if this represents /spermo/ rather than /spermôn/) beside alphabetic σπέρμα ‘id.’.81 It could also explain the Homeric forms ὀπατρος ‘of the same paternal ancestry’ < *sm̥-ph2tr-o‑ and οἰετέας ‘born in the same year’ < *sμ-yetes-, assuming that such forms are of Mycenaean origin.82 However, these forms with copulative ὀ- cannot carry too much weight: Ruijgh (1961: 201) explains them by an analogy that would have taken place in a psilotic dialect like Lesbian, where the preconsonantal variants ἁ‑ < *sm̥‑ and ἀ‑ < *n‑ had merged. This would have motivated the analogical creation of ὀ‑beside prevocalic ὀμ‑ (< *som(o)‑, ὁμ‑ before consonants) after the model of ἀ‑beside prevocalic ἀν‑.

There is, however, a severe problem with the idea of labials as a conditioning factor. A variation a ~ o is found in a small number of Mycenaean neuters. The forms with -a- are:

– pe-ma /sperma/, found also at Pylos, but only in one scribal hand and beside the much more frequent pe-mo;

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80 It has been repeatedly observed (e.g. Ruijgh 1961, Wathelet 1970) that much of the alleged evidence for *n, *m > o is found in the numerals. However, the analogical spread of o-vocalism through the numerals in certain dialects can in my view only be explained if there was a sufficient basis for the leveling. I agree with Thompson (1996–1997: 319) that it is difficult to explain Myc. e-ne-wo by analogy.

81 A less secure example is da-po-ta ‘lord’ < *dμ-pot-ā- beside da-ko-ro < *dμ-ko-ro- ‘temple servant’, both from Pylos. Myc. do-po-ta is the recipient of an offering, and therefore most probably a theonym (cf. δεσπότης). The reconstruction *dμ-pot-ā-, however, is by no means certain: an o-grade *dom‑ cannot be excluded. Myc. da-ko-ro is an occupational term, and usually compared with class. ζάκορος ‘temple servant’.

82 In οἰετέας, ο‑ spells (metrically lengthened) /ō/ before a following e. The third form with ‘copulative’ δ‑ in Homer is acc. pl. δερχες (II. 2.765). It could be argued that its δ‑ was taken over from οἰετέας, which directly follows it in the same line. Homeric δπατρός is clearly an archaic form, because it is attested twice in the verse end κασίγνητος καὶ ὀπατρός (II. 12.371; acc. sg. II. 11.257). Two other attestations of copulative δ‑ are found in Hsch.: δξυγες'-δμξυγες' and δγατωρ-δμγατωρ.
AREPA /aleipʰar/ ‘unguent’, dat. a-re-pa-te /aleipʰatei/; a-re-pa-zo-o /aleipʰa-ddjoho-/ ‘unguent boiler’ but also a-re-po-zo-o /aleipʰo-ddjoho-/;

- ins. sg. e-ka-ma-te /hekʰmatē/ and pl. e-ka-ma-pi /hekʰma(p)bi</*hekʰ- mεt- ‘with support(s)’ (part of a table), to be compared with Hom. ξιμα ‘support, prop’ (of a ship or a wall).

These forms constitute a well-known crux of Mycenaean studies. I will not attempt to review all previous solutions, but instead discuss Ruijgh’s solution in more detail, as it is well-known and directly related to his views on the syllabic liquids.

Since Mycenaean also shows neuters in /-ma/, Ruijgh argued that the syllabic nasals had a-colored reflexes in all Greek dialects. In his view, the above-mentioned o-colored reflexes in Mycenaean originated in heteroclitic stems with nom.-acc. *-r, gen. *-ŋtos. Word-final *-r would have regularly yielded -or in ‘Achaean’ and Aeolic dialects (i.e. the same vowel color as in word-internal position, but a different slot), while *-ŋtos developed into *-atos, as elsewhere. He adduces the Homeric words ἦτορ ‘heart’ and ἄορ ‘sword’, which in his view are ‘Achaean’ elements of Epic Greek, as evidence for this development. Next, the heteroclitic paradigm could be leveled in two different directions. In literary Lesbian, a paradigm with -ας, -ατος was the result, and Ruijgh sees the same levelling reflected in Mycenaean AREPA, a-re-pa-te, a-re-pa-zo-o. In addition, he supposes that these heteroclitic stems had “doublets” in *-or, *-otos in Mycenaean, which arose by leveling in the opposite direction. This assumption allows him to explain the o-vocalism in words like a-mo and pe-mo: the “double flexion” (oblique forms in -at- beside -ot-) would have secondarily spread to non-heteroclitic neuters in *-m(t) and finally even to the nom.-acc. sg. of such forms. Thus, alleged traces of such “doublets” are pe-mo beside pe-ma and a-re-po-zo-o beside a-re-pa-zo-o, while e-ka-ma would have retained the original a-vocalism and a-mo generalized the “doublet” with -ot.-

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83 Hajnal (in Hajnal-Risch 2006: 212 ff.) summarizes various proposals. With Thompson (1996–1997 and 2002–2003), I am pessimistic about the possibility to distinguish “mycé-nien normal” from “mycénien spécial”.

84 E.g. Ruijgh (1961: 205; 1967: 100–101), followed by Wathelet (1970: 173–175).

85 According to Ruijgh (e.g. 1961: 203), the form e-ka-ma-pi shows that the labial environment cannot be responsible for the rounded outcome.

86 Ruijgh (1961: 1985: 153 ff.).

87 However, an alternative is that the literary Lesbian forms in -ας are epicisms or borrowings from Ionic (see section 3.3.3) or that they display the Pan-Greek regular reflex of word-final *-r.

88 And also to the word for ‘ear’ (cf. Myc. a-no-wo-to), which belongs to a different type of heteroclitic.
This construction fails to convince for several reasons. First, as remarked by Cowgill, it is unlikely that the heteroclitic stems (a relic type) influenced a highly productive type like the neuters in *-\(\text{mn}\)(t), “especially when that influence consists in the creation of new doublets, rather than the favoring of one or another inherited form or the leveling of some anomaly” (Cowgill 1966: 90). Secondly, it is implausible that two suffix variants -at- and -ot- served as the productive marker of a morphological category in one single dialect. Thirdly, Ruijgh’s scenario does not explain the distribution between -mo and -ma, and it is particularly problematic that only a marginal lexical item like e-\(\text{ka-ma}\) would have resisted analogical reshaping. Finally, there is no unambiguous proof that heteroclitic neuters in *-\(r\) ever had a nom.-acc. sg. in /-or/ in Mycenaean: the evidence rather points to /-ar/, and the dialectal origin and reconstruction of Homeric ἔτορ and ἄορ remains uncertain (see section 9.5). Ruijgh’s scenario therefore cannot be correct.

In sum, it still seems more likely that the o-colored Mycenaean reflex of syllabic nasals was conditioned at least by surrounding labials. This would explain several isolated forms, as well as the pervasive o-vocalism of Myc. a-mo < PGr. *\(\text{ar-mn}\) and the fact that pe-mo is the normal form at Pylos (with the exception of one single hand). However, it must be admitted that e-ka-ma and the variation pe-ma ~ pe-mo continue to present problems, and that there may have been other conditioning environments for the o-colored reflex. Finally, it must be noted that *\(\eta\) normally does not have a different reflex from *\(\eta\) in Mycenaean (nor in Aeolic dialects): for the development *\(\eta > a\), cf. Myc. *a₂-te-ro /hatero-/ ‘next [year]’ < *\(\text{smn}\)ter-ar- “the other [year]”.

In the remainder of this work, the syllabic nasals will only play a marginal role. In my explanation of numeral forms like Myc. *\(\text{qe-to-ro-}\), Thess. \(\pi\text{περ-}\)-, Class. \(\tau\text{τετρα-}\) (section 2.7), I will argue that these dialectal differences can be explained by analogy with the corresponding differences in ‘nine’ and ‘ten’.

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89 Hinge (2007: 146–147) has proposed that the o-colored reflex was conditioned by a following sibilant in εἰκσει (with assimilation, as opposed to Dor. ε̕κσει) and a few other cases. Although this thesis has not found wide acceptance (no doubt because several of the etymologies provided by Hinge are not compelling), I agree with him that εἰκσει can hardly be an analogical form.

90 See sections 2.6, 2.7 and 3.3.1. Ruijgh (1961) also explained the numerals by analogical developments, but without invoking a conditioned change *\(\eta\), *\(\text{m} > o\). In his view, Arc. \(\deltaκσι\), Thess. Lesb. \(\deltaκστοσ\) and forms of ‘nine’ (cf. Lesb. ενοτοσ) would have acquired their final -o from \(\deltaκτο\) (attested as such in Boeot. and Lesb.), which would itself have developed from \(\deltaκτω\) under influence of \(\deltaο\) beside \(\deltaω\). Subsequently, the final -\(\omega\) would have spread to ‘nine’ and ‘ten’. This scenario is accepted by Haug (2002: 51). However, even if influence of ‘two’ on ‘eight’ is accepted, it is remarkable that in a sequence \(\epsilonπτα-\deltaκτα-\epsilonνέα-\)
Furthermore, in chapter 9 it will be argued that certain instances of -ρα‑ reflect pre-forms of the shape *CrνC, e.g. γράω ‘to eat, digest’.

1.4 Previous Accounts of -αρ‑ versus -ρα‑ in Ionic-Attic

Let us now turn to the central issue of this study, the double reflex -αρ‑ versus -ρα‑ of Proto-Greek *r in Attic and Ionic dialects. The claim defended in this book is that only -αρ‑ was the regular reflex of Proto-Greek *r. From the perspective of the Greek evidence usually marshalled, this is an unexpected result. However, if we compare the reflexes of *r in other Indo-European languages, we find that the anaptyxis normally occurs in front of the vowel: cf. PGmc. *ur, ul, Arm. ar, PAnat. ar, PToch. ār, Proto-Balto-Slavic *ir/ur, *il/ul. The only branch of Indo-European showing regular anaptyxis after the liquid is Celtic: the Proto-Celtic reflexes are *ri, li (though only before stops and m: in other contexts the reflex is *ar).91 Within Greek, as we will see in chapters 2 and 3, only the Aeolic dialects provide clear evidence for an anaptyctic vowel developing after the liquid. Seen in this light, the claim that *r regularly yielded -αρ‑ already appears to be much less outlandish.

An instructive treatment of the evidence in Ionic-Attic is Kuryłowicz (1968: 247), who cites the following evidence in favor of a regular development to -ρα‑:

Dass -ρα‑ lautgesetzlich ist, beweisen Gegensätze wie δέρκομαι : ἔδρακον; πέρθω : ἐπραθόν; νημερτής aber ἔμβραται: εἰμαρταί und ἐμβραμένη: εἱμαρμένη (Hesych);92 τέρπω : τραπείομεν; σπείρω : -σπρατός; δέρω : δρατός; τέρσομαι : τρασιά; θέρσος (äol.) : θρασύς; τέτταρες (für *τέττορες) : τράπεζα. Vgl. ferner isolierte Beispiele wie βραδύς : lat. gurdus; κράνος : lat. cornus; πράσον : lat. porrum.

91 For the Celtic evidence, see section 9.4.
92 The etymology of this example is misunderstood by Kuryłowicz, because ἔμβραται is derived from the root of μείρομαι ‘to receive as a share’, but νημερτής from that of ἁμαρ‑τεῖν ‘to miss’. Moreover, ἔμβραται is not an Ionic-Attic form (it is ascribed to the Syracusan mimographer Sophron); see section 3.2.2.
Although not all these examples are equally compelling, this is certainly an impressive list. One fact deserves special attention: whenever Crat- appears as the zero grade reflex of a root of the structure CerT-, it usually cannot be explained by analogical mechanisms.

The apparent impossibility to give a different explanation for -ρα- in such paradigms as δέρκομαι : έδρακον and πέρθω : ἔπραθον has always strengthened the conviction that -ρα- is the regular reflex of *r in Ionic-Attic. This is, however, not the end of the story. As was recognized long ago, there are also cases of -αρ- < *r in roots of the structure CreT-. Osthoff (1879: 144–145) and Güntert (1916: 72) drew attention to κάρτα ‘very’ beside κρατύς (κράτος, κρατέω, κραταιός), as well as ταρφύς, ταρφειαί ‘dense, frequent’, τάρφος ‘thicket’ beside τρέφω. Güntert eventually dismissed κάρτα in view of the possibility that Goth. hardus ‘hard’ is etymologically related, and waved away ταρφύς and τάρφος with the claim that they are artificial epic creations.93 Neither of these claims can be substantiated: κάρτα clearly belongs to the root κρετ- with a different full grade slot, and if ταρφύς would have been preferred over *τραφύς for metrical reasons, it remains unclear why a similar reshaping did not take place in other Homeric adjectives like βραδύς, θρασύς, κρατύς.

Kuryłowicz dealt with κάρτα and ταρφύς by assuming that the fluctuation between zero grades CRaT- and CaRT- in roots of the structure CeRT- induced a hesitation about the correct zero grade of roots of the structure CReT-.94 It remains unclear, however, why hesitation about the correct zero grade would occur at all in roots with an otherwise unambiguous full grade slot. Kuryłowicz does not explain why this “morphologically conditioned” -αρ- is found precisely in καρτερός, κάρτα and ταρφύς and not in other forms, nor why there are no by-forms xκράτα and xτραφύς. It is difficult, then, to dismiss κάρτα, καρτερός, and ταρφύς so easily as Güntert and Kuryłowicz did.

Another important problem concerns the existence of doublets of the type καρτερός ~ κρατερός. In addition to words with the root καρτ- ~ κρατ-, Kuryłowicz (1968: 247) mentions the following pairs of forms:

93 For Osthoff’s explanation, see section 1.4.5 below.
94 "In manchen Fällen konnte das Nebeneinander von TRaT u. TaRT auch alte TReT-Wurzeln in Anspruch nehmen, so κρετ- (κρείττων, äol. κρέτος), wo neben κράτος, κρατερός, κράτιστος, κρατώνω auch die entsprechenden Formen mit αρ auftreten. Ferner findet sich neben τρέφω ‘gerinnen lassen’ ταρφύς ‘dick, geronnen’, ταρφειαί, aber das Jonische hat auch τραφερή (γῆ) ‘feste Erde, Festland.’ (Kuryłowicz 1968: 247).
These examples are either true doublets (attested with both -αρ- and -ρα-), or could be taken to suggest the earlier existence of a doublet. Güntert (1916: 71–72) adduced several further examples, but most of them do not survive closer scrutiny;95 Kuryłowicz rightly restricted himself to a group of more central examples.

In all the cases listed above, Kuryłowicz views the form with -ρα- as presenting the older reflex. Starting from the idea that -ρα- is the regular reflex of *r̥, most previous accounts use one or more additional hypotheses in order to explain the occurrence of forms with -αρ- that cannot be due to analogical restoration.96 The following are the most notable proposals:

– There was originally free variation between -ρα- and -αρ- (or, before the phonologization of shwa, between [rə] and [ər]). Eventually, one of these variants was generalized in each lexeme, but in some cases older variants were preserved, especially in poetry.97

95 For instance, Güntert mentions γράφω ‘to write’; this is indeed related to G. kerben ‘to carve’, but the Greek dialects show evidence for an o-grade γροφ-, the vowel slot of which might be older than that of the Germanic word. Other examples adduced by Güntert include βράκανα (n. pl.) ‘wild vegetables’ (Pherecr. apud Ath. Deipn. 7.102; lexicographers) beside OHG moraha ‘carrots’ (these words are clearly borrowings; Greek βράκανα is closest to Ru. borkan ‘wild carrot’: see Kroonen, EDPG s.v. *murhôn- with references); ῥάδαμνος ‘branch’ ([LXX]) has a variant ὀρόδαμνος (Thphr.+); ῥάπτω ‘to sew’ has no clear etymology (it is not related to Lith. verpiù ‘I spin’ in view of forms like Myc. ra-pte-re); the root vowel of δράσσομαι ‘to grasp with the hand’ may be the reflex of a syllabic nasal (section 9.2.1); and the comparison between τράμις ‘perineum’ and PGmc. *þarma‑ ‘intestine’ is a mere root etymology, cf. the judgement of Kroonen, EDPG q.v. (“potentially related ... No further etymology”). The dubious status of a number of these etymologies is discussed in more detail elsewhere in this book.

96 Rix (1992: 65) only mentions the possibility of analogical influence of the full grade. Sihler (1995: 92) explicitly admits that the problem has not yet been solved, and gives a fairly neutral characterization: “The conditions governing the appearance in Greek of αλ and αρ vs. λα and ρα have not been determined. In some words the difference is dialectal, but not in most.” The arguments and conclusions of O’Neil (1971) are so manifestly misguided that they require no extensive discussion. Idiosyncratic ideas about the coloring of the anaptyctic vowel are found in Wyatt (1971) and Bernabé (1977), but these authors do not deal with the place of the anaptyctic vowel, the issue with which we are especially concerned here.

97 Chantraine (1958: 23).
– An accent-conditioned development, according to which only (secondarily) accented \(^\ast f\) would yield -\(\acute{a}\rho\).\(^{98}\)
– Liquid metathesis of -\(\rho\alpha\)- and -\(\rho\circ\)- yielded -\(\alpha\rho\)- and -\(\circ\rho\)-, respectively.\(^{99}\)
– /CaRT-/ replacing /CRT-/ is a secondary (analogical or morphologically conditioned) ablaut variant of /CeRT-/ that arose before the vocalization of \(^*R\).\(^{100}\)
– -\(\alpha\rho\)- is the regular reflex only after heavy onset clusters, -\(\rho\alpha\)- elsewhere.\(^{101}\)

I will now discuss these proposals and the problems with them one by one.

### 1.4.1 Free Variation between -\(\rho\alpha\)- and -\(\alpha\rho\)- at an Early Stage

In his *Grammaire homérique*, Chantraine observed that doublets of the type καρτερός ~ κρατερός are mainly found in Homer. He mentions the examples shown in Table 2 on the opposite page. Chantraine (1958: 23) proposes that these pairs originated as follows:\(^{102}\)

Dans le développement des sonantes \(r\) et \(l\) l’élément consonantique s’est maintenu et l’\(\alpha\) figure soit avant soit après la consonne: on observe un flottement entre \(\rho\alpha\) et \(\alpha\rho\). Les aèdes ont naturellement choisi la forme la plus favorable à l’hexamètre dactylique.

Phrased in this way, Chantraine seems to accept both -\(\alpha\rho\)- and -\(\rho\alpha\)- as regular outcomes of \(^*f\). He does so in order to explain the choices apparently available to epic singers. This would not explain, however, why the variation occurs only in these specific words, and thus it would amount to a resignation to the

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\(^{98}\) Kretschmer (1892), Schwyzer (1939: 342), Klingenschmitt (1974: 275), Hajnal-Risch (2006: 102–103; 202–205).

\(^{99}\) Hirt (1901: 232–238), Lejeune (1972: 196–197), Risch (1979a: 98–99), Thompson (2002–2003: 355–362), Hajnal-Risch (2006, l.c.).

\(^{100}\) Kuryłowicz (1956: 174–187; 1968: 243–247), García Ramón (1985), Hajnal (1997: 145–150).

\(^{101}\) Osthoff (1879: 144–145), Hoenigswald (1953; 1968; 1988), Lubotsky (1994: 97).

\(^{102}\) Chantraine (1958: 23–24) gives the following discussion: "À l’attique καφδία « cœur » répond généralement l’homérique κραδίη: καφδίη n’est possible qu’au nominatif et au datif singulier devant un mot à initiale vocalique, l’hiatus abrégeant la longue finale (…); l’ionien-attique a employé concurremment θάρσος et θράσος « audace »; le dialecte homérique a normalement θάρσος (12 exemples), et une seule fois θράσος (…); il existe une répartition entre καρτερός « fort » qui est attique et κρατερός, cette seconde forme étant employée lorsque la syllabe finale est longue; suivant les besoins du vers Homère emploie soit τέταρτος « quatrième» qui est attique soit τέτρατος (…) qui, avec une finale brève, fournit une dactyle; enfin à βράδις répond un superlatif βάρδιστος (…) βράδιστος ne pouvait entrer à aucune place du vers homérique."
problem. On a more charitable reading, Chantraine may be taken to assume that at some point, before the vocalization was phonologized, forms with [ra] and with [ər] were in competition. Only Epic Greek would preserve traces of the hesitation between these two competing realizations, and only in a small number of cases both variants were retained, because of their metrical utility. This idea deserves attention because it would explain why variation between ρα and αρ in the same lexeme is practically limited to Epic Greek. It is, however, not without problems. First of all, it entails that variation between forms like καρτερός and κρατερός existed already before the vocalization of *r (i.e. before the phonologization of one of the supposed variants [ra] and [ər]). Since this stage is normally dated to before the Mycenaean period, this scenario would require a very long time depth for the epic tradition. Secondly, one would like to see other compelling reasons for assuming a true hesitation between the phonetic realizations [ər] and [ra] in spoken prehistoric Greek. Thirdly, admitting that the variation between ρα and αρ is an artificial phenomenon does not explain the presence of forms with the reflex αρ (like καρτερός) in the Attic vernacular.

If the creation or retention of pairs like καρτερός ~ κρατερός were due to metrical convenience only, it would be difficult to understand why such variation was exploited only on a limited scale. In the course of this book, we will repeatedly focus on the distribution of forms with -αρ- and -ρα-, especially among forms containing the root κρατ- ~ καρτ-, and we will encounter various salient distributions. Such details remain unexplained if we assume that the poets

103 For such a resignation, see Goldstein (2013): “The alternation between ra and ar or la and al may have been to some extent conditioned by speech tempo and register. As such, the precise conditions of their distributions may be unrecoverable.”
104 For instance, in Herodotus all instances of κρατερός appear in oracles or otherwise clear epic reminiscences; the normal form is καρτερός.
could choose whichever variant they liked. For this reason, explanations along the lines of Chantraine are unlikely to be correct.

1.4.2  Accent-Conditioned Development

Schwyzer, in his *Griechische Grammatik*, recommends the following explanation (1939: 342):

Für καρδία (aber hom. κραδίη, vgl. air. cride), θαρρεῖν (neben θρασύς), δαρτός (neben δρατός; vgl. got. gataurþs f. ai. dfti- f.), σπαρτός, ἔφθαρκα, ἄγαρρις aus -ρσ- ist die Stellung des ρ in κήρ θέρσος δέρω σπείρω ἔφθορα ἔγειρω verantwortlich zu machen. Doch erklären sich andere unstimmige Fälle so nicht: κάρτα καρτερός neben κρατύς : äol. κρέτος κρέσσων κρατερός, μαρνάμενος usw., μάρτυς : βρακείν, μάρτυς : μέρμερος μέριμνα. Man darf wohl für solche Fälle mit der Möglichkeit rechnen, dass auch ein r, das sekundär den Akzent erhielt, zu ρ wurde (...).

It would not be inconceivable that the reflex of *r̥* depended on lexical accentuation. As a parallel case one might adduce Avestan, where the reflex of *r̥* is -ərə- when unaccented (e.g. YAv. mərəγa- ‘wild animal’, cf. Ved. mr̥gá- ‘id.’), but -əhr- when accented (e.g. YAv. vəhrka- ‘wolf’, cf. Ved. νήκα- ‘id.’).105

However, whether such a scenario offers a feasible explanation in the case of Greek must ultimately depend on the data. In the above formulation by Schwyzer, it is not indicated how the difference between καρτερός and κρατερός, both with the same accent, is to be explained. Moreover, the widely advocated analogical explanation of καρδία, in which -αρ- would be due to the influence of etymologically related κῆρ, is not straightforward either (see chapter 6). These and similar problems arouse suspicion as to whether an accent rule can solve the problem of the double reflex.

The view canonized in Schwyzer’s grammar goes back to Kretschmer (1892: 391–394). Kretschmer’s main argument for the accent rule were the Homeric particles ἂρ (accented) beside ὅς (unaccented), which in his view retain the original distribution. For both particles, he started from a pre-form PIE *r̥*. Other examples adduced by Kretschmer include the gloss στάρτοι· αἱ τάξεις τοῦ πλήθους ‘divisions of the people’ (Hsch.), with retracted accent (beside the normal form στράτος ‘army’) and μάρτυς ‘witness’, which he connected etymologically with βραχεύς ‘arbiter’. However, none of his examples is probative.

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105 According to Frotscher (2012) the reflex of word-final *r̥* in Indo-Aryan was also dependent on the accent: in his view, unaccented *r̥* yielded -ar, as against accented *r̥* > -ūr.
Although there is no dialect indication for στάρτοι in Hsch., the gloss must be from Cretan, where -αρ- is the regular reflex also in unaccented position (see section 3.1) and where στάρτος is indeed attested more or less with the meaning glossed by Hesychius. An etymological relation between βραβεύς and μάρτυς cannot be maintained for apparent reasons. Moreover, a resolution of the problem of -αρ- versus -ρα- cannot be based on the particles ἄρ and ῥα, if only because the reconstruction of their pre-form is uncertain (and they probably do not reflect *C̄L̄T). Finally, as pointed out already by Grammont (1895: 26), Kretschmer did not consider the counterevidence to his rule. Of the counterexamples adduced by Grammont, κατέδαρθον ‘slept’ and τέταρτος ‘fourth’ deserve to be mentioned; to these I would add καρτερός, ταρφύς, and καρπός.

In more recent times, Klingenschmitt (1974: 275–276) has tried to revive Kretschmer’s idea. This attempt is often cited with approval, but as I will argue in section 2.5.3, Klingenschmitt’s patchy argumentation does not withstand closer scrutiny.

1.4.3 Liquid Metathesis
Since Kretschmer’s accent rule does not account for all instances of -αρ- < *r̥, some scholars have invoked liquid metathesis as an additional mechanism. Hirt (1901: 232–238) argued as follows. On Crete, -ρο- appears to have undergone metathesis to -φρ- in the forms πορτι (Hom. προτι) and Αφορδιτα (Ἀφροδίτη). Therefore, forms with -αρ- (frequently found on Crete) need not directly continue *r̥ but could also be due to metathesis from -ρα- (assuming that this was the regular outcome). Starting from this observation, Hirt proposed that metathesized forms with -αρ- may also occasionally appear in other dialectal areas, and were even utilized in Epic Greek because of their metrical utility. Another much-cited treatment of the problem is Lejeune (1972: 196), whose reasoning is similar to that of Hirt. Assuming that ρα is the regular reflex and αρ is analogical, Lejeune invokes the “mobilité générale des liquides dans le syllabe” in order to account for the problematic forms that remain, such as καρτερός ~ κρατερός.

However, forms like δρομος ‘track’ and κρονος ‘time’ (= Att. χρόνος) are also attested on Crete, constituting counterexamples to Hirt’s scenario. For this reason, Hirt assumes that the supposed liquid metathesis operated on an irregular basis. As I will argue in section 3.1, a completely different scenario is more plausible: Cretan Ἀφορδιτα and πορτι may have the regular reflex of *r̥ after a preceding labial consonant. Moreover, given that -ρο- was retained in Cretan in

106 Cf. Haug (2002: 52) and section 1.2.3 with n. 55 above.
δρομός and κρονός, it is much more attractive to analyze -αρ‐ as the regular Cretan reflex (at least in non-labial environments). If this is correct, it refutes the idea of a regular liquid metathesis in Cretan, and it deprives the assumption of an incidental liquid metathesis in other dialects of a solid parallel.\textsuperscript{107}

Against the suggestion that liquid metathesis may operate irregularly, it must be stressed that this phonetic development in fact often operates in a completely regular and predictable way, for instance in the so-called polnoglasie forms in Slavic languages. The phonetic conditions for liquid metathesis may be highly specific: a noteworthy example is the regular metathesis of unaccented *ər to rə in Le Havre French (Blevins & Garrett 1998), which seems to be conditioned by a following labial fricative or labial nasal. Thus, to assume an irregular liquid metathesis does not account for the difference -φα- versus -αφ-: it merely amounts to admitting that one is unable to indicate a historical condition for the attested distributions.\textsuperscript{108} In the course of this book, we will see that the situation in Mycenaean, Homeric and Classical Greek is not so hopeless as to call for such a resignation.

1.4.4 \textit{Secondary Ablaut TeRT- : TaRT-}

In his discussions of Indo-European ablaut, Kuryłowicz has suggested that in what he called the “Southern” Indo-European languages (comprising the branches of Greek, Italic and Celtic), a secondary zero grade *TaRT- could be introduced, replacing forms of the structure *TR̥T- before a vowel. An example from Latin is carpō ‘to pluck’ (root PIE *kerp-), where *corpō would be the expected outcome of *kṛp-e/o-. Kuryłowicz (1968: 243) proposes the following scenario. The disappearance of laryngeals in roots of the structure TeRH- in Celtic, Latin and Greek led to the emergence of an ablaut pattern TeR-V- : TaR-V-

\begin{footnotesize}
\textsuperscript{107} Hirt (1901: 238) further believes that Homeric -αφ- may be due to metrical constraints: in pairs like κρατ- / καρτ-, θρασ- / θαφ-, ἀταρπιτός / ἀτραπιτός “[liegt] bei Homer kein beliebiger Wechsel von ρα und αφ vor, sondern αφ findet sich da, wo wir metrische Dehnung erwarten sollten.” But: “Dass damit freilich noch nicht alle αφ des Griechischen beseitigt sind, sehe ich wohl, indes glaube ich doch annehmen zu können, dass ρα der alleinige Vertreter von ῥ ist”. On an earlier occasion, Hirt had remarked: “Die Hauptargumente für unsere Ansicht werden bleiben: der Lok. Plur. πατράσι, und ὑπόδρα(κ) zu δέρκομαι.” (Hirt 1897: 158).

\textsuperscript{108} The problematic instances of -αφ- have often been tucked away in previous treatments. A good example is the discussion by Güntert (1916: 69–74). On the one hand, he accepts Kretschmer’s accent-conditioned development, but in addition he claims that Hirt’s discussion (which starts from the assumption of liquid metathesis) has shown “dass es kaum noch erwartet werden kann, in jedem Einzelfall die Verteilung von αφ und ρα zu erklären.” In this way, the hypothesis is protected against undesired falsification—clearly an \textit{ad hoc} strategy.
\end{footnotesize}
<TRH-V> in forms where the zero grade was followed by a vowel. This pattern was then analogically transferred to roots of the structure TeRT-, yielding secondary ablaut TeRT-: TaRT- in cases where the suffix started with a vowel. This would explain why we find secondary zero grades like carpō mainly with roots of the structure TeRT- and only rarely with roots of the structure TreT-, where there was no corresponding model of the type TRe-: TRa-.

Kuryłowicz’s scenario has been embraced by various scholars, including García Ramón (1985) and Hajnal (1997: 146–150). It is problematic, however, that the evidence for secondary zero grades of the type *TRT- → *TaRT- is not at all widespread across the Indo-European realm. All nine roots adduced as evidence by Kuryłowicz (1968: 243–244) have a Latin example with a-vocalism, and in at least seven of these cases the Latin forms are the only reason to posit a secondary zero grade *TaRT-. Indeed, the Latin a-vocalism remains problematic, but this is a problem belonging to the prehistory of Italic: Kuryłowicz’s idea of a “Southern” subgroup of Indo-European cannot be upheld.110

Further problems arise once the actual Greek evidence for secondary ablaut is considered. To be sure, there are well-known cases of secondary zero grades in Greek: for instance, the intransitive aorist ἐρράγην (ῥήγνυμι ‘to break’, PIE root *u̯reh1ǵ-) replaces the expected form *ἐρρήγην < *e-u̯rh1ǵ-eIh₁ by analogy with cases like ἐπάγην (πήγνυμι ‘to fix; make solid’, PIE root *peh2ǵ-)111. However, in such cases we are dealing with the extension of already-existing ablaut patterns, not with the special creation of a morphologically conditioned reflex. I do not think that the Greek forms adduced by Kuryłowicz require such a drastic explanation.

For *TaNT- replacing *TN̥T-, Kuryłowicz cites only two examples: κάνδαρος· ἄνθραξ ‘piece of charcoal’ (Hsch.), which is supposed to be related to Lat. can-deō ‘to shine’, Ved. cand ‘id.’, and σκάνδαλον ‘trap; outrage’ (LXX+), which would be related to Lat. scandō ‘to rise, ascend’, Ved. skand ‘to leap’. It is suspicious,
however, that neither κάνδαρος nor σκάνδαλον has an inner-Greek cognate formation with full grade root. In my view, neither etymology is compelling. Concerning κάνδαρος, the root PIE *kend‑ ‘to shine’ qualifies bright, white light, especially that of the moon. Now, charcoal (ἄνθραξ) may glow, but it does not shine, and arguably blackness is a more specific characteristic of charcoal. As for σκάνδαλον, although the derivative σκανδάληθρον ‘curved piece of wood in a trap’ (Ar.+ ) assures the existence of this word for the classical period (cf. DELG s.v.), the derivation from *skend‑, accepted by both GEW and DELG, is not evident semantically. Given its specialized technical meaning and the a-vocalism of the root, σκάνδαλον may well be a loanword, for instance from Pre-Greek (cf. EDG s.v.).

For secondary *TarT‑, the only Greek form mentioned by Kuryłowicz is ἅρπη ‘sickle’, related to OCS srьpъ, Latv. sirpis. However, the Greek and Balto-Slavic forms can be explained as reflexes of a root noun *sr̥p‑: see section 9.6. García Ramón (1985: 217–218) has proposed to extend Kuryłowicz’s explanation of Lat. carpō to Greek καρπός ‘fruit; harvest’. Kuryłowicz’ original idea was that Lat. sarpiō ‘to prune (the vine)’ and carpō ‘to pluck’ contained analogical prevocalic zero grades *TaRT‑V‑ of late-PIE date. This is, however, not the only possibility. For instance, Schrijver (1991: 493) has proposed that an a-vowel in Latin may have arisen in positions where it stood before three consonants, as in sarptus < *sr̥p‑to‑, carptus < *kr̥p‑to‑; subsequently the vocalism would have spread to other forms in the paradigm. Alternatively, Schrijver assumes that the -a‑ may have been taken from the semantically and formally close verb sarriō ‘to hoe, weed’.

However this may be, the most important objection to Kuryłowicz’s secondary ablaut remains that there is no obvious motivation for the assumed analogical introduction of TaRT‑ as long as *TRT‑ was still analyzable as a regular zero grade. His supposition that *TRT‑ was felt to be ambiguous between *TReT‑roots and *TeRT‑roots does not seem a sufficient motive to me. Thus, both the lack of absolutely compelling evidence and the absence of a clear motivation for the allegedly ‘morphologically conditioned’ analogy are reasons to reject the concept of secondary ablaut in Greek forms with -αρ‑.

112 DELG defines the original meaning as follows: “σκάνδαλον consistait en une barre de bois plus ou moins longue qui constituait, soit une partie d’un piège, soit la perche d’un acrobate.”

113 The appurtenance of Celtic forms (OW serr ‘sickle’, Mfr. serr f. ą-stem ‘id.’) is more uncertain. See section 9.6.1.

114 For a more detailed criticism of García Ramón’s interpretation of καρπός and a number of Mycenaean forms, see section 2.2.
1.4.5  Conditioning by Neighboring Consonant Clusters

In his contribution to the second volume of *Morphologische Untersuchungen*, Osthoff (1879: 144–145) remarked that the outcome αρ < *r̥ in Greek cannot always be understood as analogical:

Es gibt Fälle, in welchen man dem αρ = ṛ schwerlich mit irgend welchem “systemzwange” wird beikommen können. Bei καρδία neben κραδιη, ἐδαρθον neben ἐδραθον (...), und wol noch in anderen fällen fehlt uns im griechischen jegliche spur einer anderen, stärkeren ablautstufe derselben wurzeln. (...) Vollends bei κάρτος, καρτερός und κράτος, κρατερός, κρατύς würde uns die zuhilfenahme von κρέσσων (ion.), κρέτος (lesb.), Τιμοκρέτης allenfalls nur zu dem nicht gesuchten entgegengesetzten resultat führen können, dass αρ lautgesetzmässig und ρα durch die analogie bewirkt sei. Und aus demselben grunde würden die doch nur zu τρέφω ‘dick werden lassen, gerinnen machen’ unmittelbar gehörenden ταρφέες ‘dicht’, τάρφος ‘dickicht’ unbegreiflich bleiben.

In order to resolve this problem, Osthoff proposed that the coda of the preceding word could influence the development of *r̥:

Hiess es ursprünglich ὣ κραδία mit κρα- im anschluss an das vocalisch aus-lautende, aber τῆς καρδίας mit καρ- hinter dem consonantisch schliessen-den proklitikon?

One drawback of this hypothesis is that it cannot be tested against concrete distributions in the evidence: it merely posits the earlier, prehistoric existence of contextual sandhi treatments. Furthermore, the example adduced by Osthoff has no explanatory value, as the demonstrative ὁ, ἡ, τό had not yet been grammaticalized as a definite article when the syllabic liquids were vocalized. Finally, there are counterexamples such as στρατός and ὀφιόσπρατος (cf. already Kretschmer 1892: 391).

In the twentieth century, a solution along the same lines was attempted by Hoenigswald. He formulated his idea as follows (Hoenigswald 1968: 22):¹¹⁵

the element of syllabicity which we have symbolized by [ь] crops up, with some phonetically recognizable effect in the daughter languages, after every two consonants not separated by a phonemic vowel ([..ĆĆĆĆĆ..]).

¹¹⁵ Cf. also Hoenigswald (1953; 1988).
In this way, two allophones of the syllabic liquids would have come into being: [Lь] after a single consonant (or light syllable), and [ьL] after a double consonant (or heavy syllable). Subsequently,

the post-light allophone merges with the consonant-vowel sequence ρα (ρο), while the post-heavy allophone merges with the vowel-consonant sequence αρ (ορ), thereby becoming prosodically long.

This formulation has some plausibility in abstract phonetic terms (note that the anaptyxis in *CRH, which took place before Proto-Greek, also depends on whether it is followed by a consonant or a vowel). However, like Osthoff before him, Hoenigswald never seriously considered the counterevidence to his claims. His scenario thus remains a paper exercise in phonetics and phonology.116

The idea of a special reflex -αρ- after a heavy initial cluster was advocated also by Lubotsky (1994), in a discussion of the reconstruction of σάρξ ‘meat’. In his view, σάρξ regularly derives from a non-ablauting zero grade root PIE *tu̯r̥ḱ‑. The shape of word-initial clusters would have automatically conditioned the vocalization: στάρξαν (3pl. aor.) ‘they wrapped’ and στάργανα ‘swaddling-clothes’ would display the regular reflex, while an initial cluster σπρ‑ (unattested in Greek) was impossible, according to Lubotsky. He also mentions the forms ἄσφαλτος, σκαλμός, and φθάρμα. However, the suggestion that onsets such as /spr/, /spl/, /spʰr/ were not allowed when the syllabic liquids were vocalized lacks a clear motivation: the onset cluster /str/ is not problematic at all (cf. στρωτός ‘spread out’ < PIE *strh₃-tó‑, which existed in the same form already

116 The same is true of Grammont (1948: 285–286), who also ascribed the fluctuation between αρ and ρα as reflexes of *r to the rhythmical structure of the preceding syllable. Hoenigswald (1953: 289–290) claims that he found a confirmation of his idea in the concrete distribution of the particles ἄρ and ῥα (ῥ’) in Homer. In his view, these forms represent different vocalizations of *r depending on the weight of the preceding syllable. Originally, ἄρ would be found after closed syllables with a bimoraic nucleus (e.g. τὴν ἄρ), while ῥα would be used after long vowels, diphthongs and closed syllables with a short vowel (e.g. τῇ ῥα, ἦ ῥα, τὸν ῥα, but rarely τήν ῥα). Hoenigswald points out that the type τῆν ῥα occurs only 8 times on 91 occurrences of unelided ῥα in the first twelve books of the Iliad. However, it is not clear how significant this distribution is. In any case, even if this distribution were significant, it does not follow that ῥα (ῥ’) reflects a pre-form *r, as the particle was clearly utilized widely in Homeric Greek to make position length or to gain a syllable; this fact by itself explains why ῥα normally does not follow syllables that are long by nature. Moreover, I doubt whether the pre-form of ἄρ and ῥα was *r (perhaps it was rather *hr, see section 1.2.3).
in Proto-Greek when the laryngeals were vocalized); an onset /skl/ is found in σκληρός ‘withered’ (probably reflecting *sklh₁-ró- with a zero grade root); and /spl/ appears in σπλάγχνα ‘intestines’ and σπλήν ‘spleen’.117 Thus, there appears to be no particular phonotactic reason as to why *sprC- had to be vocalized as σπαρC- rather than σπραC-.118

In sum, there is no sufficient reason to suppose that the dialectal vocalization of *r̥ in Greek depended on the number of preceding or following consonants. Note that this may have been different for *CRHC in Proto-Greek: see section 1.2.1 and Van Beek 2021b.

1.5 Accounting for *r̥ > ‑ρα‑

As we have seen, previous scholars have applied almost the entire linguistic toolkit to the problem of ‑αρ‑ versus ‑ρα‑ in Ionic-Attic, but without being able to explain all the attested forms. Within the framework of a regular change to ‑ρα‑, it does not appear to be possible to account for forms like καρτερός, κάρτα, καρπός and ταρφύς. I therefore hypothesize that these forms with ‑αρ‑ are what they look like: the outcome of a regular sound change *r̥ > ‑αρ‑ in Proto-Ionic. We will encounter more evidence for this reflex along the road: see section 9.6 and, for an overview, section 12.5.

This means, however, that an account will have to be given of all forms with ‑ρα‑ < *r̥. This is the main task of chapters 4, 5, 6 and 8. In the present section, I set out the main lines of my argumentation, anticipating some of the conclusions to be reached.

1.5.1 Distributions and a New Scenario

Let us start with some remarkable distributions (discussed in more detail in section 6.1):

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117 As for σφρηγίς ‘seal; brandmark’, it is unclear whether this reflects a full grade root *sbh₁rh₂g‑ or a zero grade *sbh₂rh₂g‑. For the etymology connecting this word with σφρα‑ρηγίζω ‘to hiss’, see Tichy (1983: 178–180) and Rico (2002).

118 As far as the examples adduced by Lubotsky are concerned, it is possible that σφα‑λ‑ should be reconstructed as *sg₃h₂el‑ (cf. LIV s.v. *sg₃h₂el‑ and EDL s.v. fallō). The vowel slot of φθάρμα can easily be secondary, cf. the full grade seen in φθείρω ‘to destroy’ and its pf. ἐφθάρα, cf. also pf. mid. ἐφθάρμα, aor. φάρνημα ‘to perish’. The pre-form of σκαλμός probably did not contain *l (see section 10.1.10); the forms σπάρξαν, σπάργανα lack a clear etymology, meaning that they could owe their α-vocalism to the fact that they were borrowed.
– A clear majority of the forms with -ρα‑ < *γ are attested in Epic Greek, e.g. ἐδρακόν, ἐπράθον, κραδίη, κρατερός. What is more, most such forms are all but restricted to Epic Greek.

– A number of forms with -ρα‑ < *γ have a corresponding by-form with -αρ‑ that is attested in Attic and/or Ionic prose: cf. Att. κατέδαρθον ‘fell asleep’ ~ Hom. κατέδραθον ‘id.’, Ion.-Att. καρτερός ~ poetic κρατερός, Ion. καρδίη ~ Hom. κραδίη.

– In some cases, the -αρ‑ variant is attested exclusively in prose (e.g. κατέδαρθον), in other cases the variants with -αρ‑ and -ρα‑ are both found in Homer (e.g. καρτερός ~ κρατερός, καρδίη ~ κραδίη).

In view of these distributions, it is worth investigating the possibility that the reflex -ρα‑ originated in the language of epic.

Before further following this line of thought, let us pause and inquire into the reasons for previous scholars to interpret the reflex -ρα‑ as a retained phonological archaism of Ionic-Attic. One motivation was, surely, that forms with -ρα‑ often have earlier attestations or more archaic phonology and/or morphology. For example, the regular aorist of τέρπομαι ‘to enjoy’ in Homer is ταρπῆναι, but the 1pl. subj. τραπείομεν ‘let us get satisfaction’ is also attested in a formulaic verse in Homer. Whereas the root vocalism of ταρπῆναι may obviously have been influenced by the full grade present stem τέρπομαι, the irregular form τραπείομεν looks like a phonological archaism of Ionic that was retained because of its metrical utility.

This account of τραπείομεν may seem plausible at first sight, but as we will see in section 6.8.5, it leads to various problems. Besides, a doublet like κρατερός ~ καρτερός does not admit of a similar explanation because καρτερός cannot be analogical. In chapter 5, I will show in detail how the variation between κρα‑ and καρ‑ came into being, and how it spread within the epic language by analogical mechanisms. Moreover, the common assumption that καρδίη (~ κραδίη) was analogically reshaped after κῆρ is also highly problematic, as I will argue in section 6.1. The same problem applies to τέταρτος (~ τέτρατος), which is usually assumed to have analogically acquired the vocalism of the cardinal τέτταρες, but not its geminated consonant (see section 2.6).

One might ask whether it isn’t far-fetched to posit a special epic reflex -ρα‑. In my view, it isn’t. First of all, the Homeric Kunstsprache abounds in artificial formations whose creation was induced by metrical factors or the peculiarities of verse composition. Against this background (cf. section 1.5.2), I suggest that Homeric forms like τραπείομεν have an artificial reflex -ρα‑ < *γ. This idea

119 In the words of Chantraine (1958: 111), “toute la morphologie est commandée par des préoccupations métriques et nous aurons à chaque instant à faire appel à cette considération”.
gains plausibility not only from the high concentration of forms with -ρα- < *r̥ in Homer and early epic texts, and more generally from the distributions just mentioned, but also from the metrical peculiarities displayed by various such forms. Words like τράπεζα ‘table’ and δράκων ‘snake’ regularly undergo muta cum liquida scansion, i.e. the sequence of plosive plus liquid does not close the preceding syllable. As we shall see in a detailed treatment of the Homeric material in chapter 6, this license is frequent in words reflecting *r̥, but otherwise relatively uncommon. The same phenomenon is found in certain words with -ρο- from *r̥, such as the dat. pl. βροτοῖσι ‘mortals’. Wathelet (1966) therefore accounted for such scansion by assuming that they originated with the vocalization of *r̥ (which first yielded -ρο- in Mycenaean and/or Aeolic, which was later replaced with Ionic -ρα- in certain cases). In his view, the peculiar scansion was originally preserved in formulae, but later on the license acquired a somewhat wider currency, when it was gradually extended beyond the group of words with -ρα- or -ρο- reflecting *r̥.

These conclusions were at first fairly broadly accepted, but there has also been criticism and dissent. The problematic aspects of Wathelet’s argumentation will be further examined in chapter 6. For the time being, the evidence for muta cum liquida in forms with *r̥ > -ρα- may start to appear in a different light when considered against the idea of a regular sound change *r̥ > -αρ-. Could it be that *r̥ was retained ‘artificially’ for some time in the traditional language of hexameter verse after it had vocalized in the Dark Age vernaculars? If so, it is possible to view -ρα- as a later vocalization of this retained *r̥. As we will see in chapters 5 to 8, this idea is corroborated by various other metrical peculiarities, including Hoenigswald’s discovery that the double onset consonants of κραδίη are never used to generate position length in the Iliad. In other words, from a prosodic viewpoint, κραδίη appears to behave as if the underlying phonological form was still /kr̥diā/. Another issue that is explained in the new framework is the short scansion of the first syllable of the controversial form ἀνδροτῆτα (see section 1.5.3).

In view of the above arguments, I put forward the following scenario:

1. *r̥ regularly developed to -αρ- (-ρα- by analogy) in Proto-Ionic;
2. *r̥ was retained in Epic Greek at this point (it does not matter which dialect, Mycenaean, Aeolic or Ionic, was the ‘epic default’ at this stage);
3. At a much later date, this retained *r̥ developed to -ρα-, and probably to -ρο- after a labial consonant, within the epic language;

For artificial word-formation in Epic Greek, see Meister (1921), the papers collected in Witte (1972), and the recent overview by Hackstein (2010).
Forms with -αρ- (and with analogical -ρα-) were introduced into Epic Greek from the Ionic vernacular. Within this new framework, a number of pieces suddenly fall into place. First of all, *rabbit had almost certainly vocalized already in Proto-Ionic and Proto-Aeolic, i.e. in the 11th century or even before that. Assuming that the *Iliad and *Odyssey were composed somewhere around 700 BCE, the retention of prosodic traces of *rabbit in Epic Greek is not a trivial assumption to make. If, on the other hand, *rabbit was retained in the epic Kunstsprache until not too long (around a century) before Homer, this would immediately explain why prosodic traces of *rabbit are still relatively frequent in the Homeric epics.

Secondly, and perhaps even more importantly, a solution for the problem of the double reflex -αρ- versus -ρα- comes within reach. This requires that we can give a convincing explanation for all forms with -ρα- < *rabbit that occur outside of Epic Greek, and that we can plausibly argue that Homeric forms with -ρα- < *rabbit are traditional elements of Epic Greek. These arguments involve digressions about subtle details, such as the lexical differences between the epic Kunstsprache and the vernaculars, the prehistory of the formulaic language, metrical lengthening, or the metrical behavior of certain prosodic word-types in Epic Greek.

A third potential advantage of this new scenario is that epic forms with -ρο-, especially those like βροτοῖσι displaying muta cum liquida scansion, can now be viewed as the outcome of a conditioned development, rather than as Aeolic forms. If we accept the broadly-shared assumption that forms like βροτοῖσι are Aeolic elements of the tradition, we are still left with the question how their pervasive muta cum liquida scansion can be explained, given that this license was highly exceptional in the Lesbian poets. Within a framework accepting the existence of an Aeolic phase, one could suppose that development 3 (the vocalization of retained *rabbit) took place at that Aeolic stage, or at the transition from an Aeolic to an Ionic phase. In a diffusionist framework, one could assume that development 3 took place in both parallel traditions: -ρο- would be the reflex of retained *rabbit in the Aeolic tradition, -ρα- the reflex in the Ionic tradition. In

120 As we have seen in section 1.1.1, some scholars even claim (though without good grounds) that *rabbit was vocalized in all Greek dialects as early as the middle of the second millennium BCE. However, the interpretation of the Mycenaean evidence for the reflexes of *rabbit is not clear-cut: as I argue in chapter 2, a retention of *rabbit in the Linear B tablets is not to be excluded.

121 For obvious reasons, I do not wish to take a strong position in the debate about the date of the *Iliad and *Odyssey, and about the genesis of the text. Nevertheless, if we assume that the largest part of both epics was composed somewhere between 750 and 650 BCE (the *Iliad earlier than the *Odyssey), this will in my view not be far from the truth.
this work, I will not make a choice between the two main competing scenarios concerning the genesis of the dialectal components of the epic tradition. Instead, I advocate the possibility that most epic forms with -ρο‑ < *γ are merely Aeolic in appearance: in chapter 7 I argue that they arose by a conditioned development, reflecting retained *γ after labial consonants.

1.5.2 Epic Greek versus Vernacular Dialects

Let us now briefly recapitulate the aspects in which Epic Greek was different from the vernacular dialects, including varieties of Ionic and Aeolic.

Epic Greek is the language of various sorts of poetry that were composed in hexameters. The prehistory of this language is the topic of fierce debates, but the following points are broadly shared among scholars:

- Hexameter verse was used by oral poets to compose texts in various different genres and subject-types. These traditional genres include at least heroic poetry (remembering the deeds of men past) and catalogues (genealogy). This manner of composition was used in extempore performance and facilitated the memorization and transmission of traditional knowledge.

- The dominant dialectal element of Homeric language, as of most subsequent hexameter texts, is Ionic. However, this predominance may be of relatively recent date, as indicated by the presence of forms and morphemes that can never have existed in any pre-stage of Ionic.

- The non-Ionic elements were preserved (or adopted) because they proved useful in verse composition. A large number of these elements are archaisms

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122 This is not the place to go into further details. Contrary to the views expressed in Van Beek 2013, I am no longer strongly opposed to assuming the presence of an Aeolic element in Epic Greek. My current impression is that Epic Greek does have a number of old mainland Aeolic features, but these entered the tradition at a relatively early stage, in the Mycenaean or sub-Mycenaean period. Arguments favoring this third alternative (a poetic koinè stemming from the Mycenaean period) have been adduced, among other scholars, by Hooker (1977) and above all by Hoekstra (1981).

123 Even in the case of Attic, the best-known Ancient Greek dialect, it is notoriously difficult to pin down exactly what the ‘real’ spoken language looked like (the style of all classical authors is elevated to a certain degree). For present purposes, however, it suffices to observe that the language of epic poetry has various characteristics (lexical, morphological, syntactic and stylistic) that are absent from texts belonging to other registers.

124 See Witte 1972; Forssman 1991; Janko 1994: 8–19; Hackstein 2010, among others.

125 I consider the cosmogonic aspects of Hesiod’s Theogony and the didactic parts of the Works and Days to be secondary genres with respect to heroic poetry and catalogues, although the former two genres may of course have some antiquity beyond Hesiod.

126 Whether the composer(s) of Iliad and Odyssey made use of writing or not is irrelevant here.
that cannot be ascribed to any particular Greek dialect (for instance μέσσος ‘middle’). Some elements have phonological or morphological innovations that single them out as Aeolic (e.g. ἄργεννός ‘white’, with a geminate reflex of *-hn-), others can be assigned with some degree of probability to Mycenaean / ‘Achaean’ (e.g. λαός ‘army, people’),

127 though ascertained instances of ‘Achaean’ forms are more difficult to find in view of the higher time depth and the deficient orthography of Linear B.

– The language has been adapted to verse composition in hexameters also by the creation of artificial forms, which arose by analogy (e.g. non-Ionic and non-Aeolic ἐν νήσσω ‘at the ships’), by artificially stretching up the use of an existing form (e.g. using a metrically convenient middle form instead of its active counterpart), by changing the declension class of a form (e.g. forms of Ἰνίσχεός instead of Ἰνίσχος ‘charioteer’), etc.

128 As is well-known, there are numerous lexical differences between the language of epic and that of the classical prose authors, or even post-Homeric poetry. There is a body of words, epithets and phrases that are used exclusively by Homer. In some such cases, one may suspect that the element lost currency in the vernaculars during the two or three centuries that separate Homer from the classical period (e.g. lexical replacements, semantic developments), but in other cases the difference in register must go back to prehistoric times.

To give an example, the normal word for ‘man, human being’ is ἄνθρωπος in Classical Greek. This lexeme is used frequently already in Homer, and it is also found in Linear B as a-to-ro-qo. In addition, however, Epic Greek uses another form βροτός, etymologically meaning ‘mortal’ but often used as a synonym of ‘man, human being’. The form is never used by later prose authors, except when they imitate Homer or attempt to write in an elevated style. We can be confident that this word was not used in everyday Ionic or Attic speech, and that it is a traditional element of poetic diction. In this particular case, we are helped by historical phonology: the form βροτός must have developed from *mr̥tós, but -ρο- cannot be the regular Ionic-Attic reflex of the syllabic liquid. Similar arguments can be adduced for various other words or word-forms that are used predominantly in Epic Greek, especially in cases where we have reason to assume that we are dealing with an artificial formation. I will therefore regularly make use of a distinction between the Ionic-Attic vernacular and Epic Greek in what follows, even if this distinction necessarily becomes more fluid as we move back in time from the classical period towards Homer and further back.

127 See section 6.8.7 for reasons why λαός is probably of Mycenaean origin.
128 See Hackstein (2010) for a convenient overview of artificial Homeric features.
A distinction between vernacular dialects and epic register is regularly made by scholars dealing with the artificial nature of Homeric language. Following Milman Parry, it is normally assumed that Epic Greek underwent the linguistic changes of the poets’ vernacular, except in the case of forms that were formulaic or metrically protected in some other way.129 The above scenario, however, assumes a prolonged retention of the sound *r̥ in Epic Greek. This can only be imagined if Epic Greek was a separate register, with not only its own morphology, syntax and lexicon (as is generally admitted), but also with a proper phonology and phonetics. Thus far, however, no instances of artificial phonology have been identified. This is surely due in large part to the fact that we only have a written text of the Homeric epics (which makes it difficult to say anything about phonetic realizations), and that the orthography of this text partly reflects spelling practices of the 4th century BCE. However, it is almost inevitable that epic poets would have avoided an all-too-local pronunciation in their performances, and it is plausible that certain phonetic or phonological features of the traditional poetic language were supra-regional.130 It is even conceivable that a sound like *r̥, when it was progressively eliminated from vernacular dialects, came to be perceived as a marker of traditional, elevated epic style. Of course, this is mere speculation, but the point is that the scenario proposed here is not excluded by what we know about the language of early Greek epic.

1.5.3 **Metrical Irregularities and the Prehistory of the Hexameter**

A final issue that must be briefly addressed is the antiquity of the hexameter. Since Nagy (1974) and especially Berg (1978), various prominent Indo-

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129 Cf. Parry (1971: 331) and section 6.7.

130 One might object to this that the oldest hexameter inscriptions from non-Ionic-speaking regions usually contain non-Ionic phonology. For instance, the Mantiklos inscription (CEG i 326, Boeotia, 730–675 BCE) contains the forms χαρίϝετταν and ἕκαβόλοι. However, this point is not probative for the issue under discussion. First, most of the phonological features (ā for η, retained r̥) are archaisms with respect to the corresponding Homeric features (in principle this may also hold for ⟨ττ⟩ against Homeric ⟨σσ⟩, as we are not informed about the exact phonetic value of the spelling ⟨ττ⟩ in Boeotian at this early stage). Secondly, the tendency towards a more local orientation in archaic hexameter inscriptions (which undeniably exists on a morphological level: cf. τῦ for σῦ and the imperative δίδοι in the Mantiklos inscription) might well be a relatively recent development of the 8th and 7th centuries. Third, it is plausible that dedications and funerary epigrams, embedded as they were in a specific local context (and necessarily written in a local script), were more prone to absorb local features than poetry performed at festivals. Thus, nothing forces us to assume that poets automatically applied the phonology of their spoken dialect when performing in hexameter verse.
Europeanists have subscribed to the idea that the hexameter arose from metrical cola inherited from Proto-Indo-European. Before that, since Meister (1921: 58) and Meillet (1923: 60 ff.) there was some sort of consensus that the hexameter was borrowed as a whole from the Minoans. The origin of the hexameter is an extremely difficult issue to resolve because there is little concrete evidence, nor a clear framework in which to interpret this evidence. In my view, the hexameter may ultimately derive from inherited meters, but it may also be that we lack the means to prove this, due to the antiquity of the tradition.131

At least since the early nineteenth century, scholars have used systematically occurring metrical anomalies for reconstructing earlier linguistic forms of the epic language. A clear example is the loss of word-initial */u̯-* in pre-Homeric Ionic, which explains the fact that words with etymological */u̯-* are more often involved in hiatus and irregular position length than one would expect on average. More controversial is the idea that metrical irregularities in words with ρο and ρα can be eliminated by tracing them back to a pre-form with */r̥*. Concerning the best-known instance, the verse-end ἀνδροτήτα καὶ ἥβην, Wackernagel (1916: 172) already remarked that the scansion of ἀνδροτήτα can be understood if the original form had */anr̥-. In this he has been followed by Mühlstein (1958: 224 n. 20), Ruijgh, Wathelet and many later scholars.

However, this explanation was called into question by Tichy (1981), who argued that the scansion of ἀνδροτήτα is to be explained as a metrical archaism: the form would be a relic from Berg’s proto-hexameter, at a stage which allowed for a trochaic fourth foot. Various Indo-Europeanists have since expressed their support for Tichy’s scenario.132 At the same time they criticize the alternative viewpoint (which views ἀνδροτήτα as a phonological archaism): it would dogmatically take for granted the antiquity of the hexameter, without adducing independent proof for this claim.

Against these strong assertions of belief in the Berg-Tichy scenario, it must be stated very clearly that none of its advocates has been able to identify a means of testing it against competing scenarios. One clear criterion would be the scenario’s ability to account for metrical irregularities and unexpected morphology that cannot be accounted for in other ways. In reality, however, Berg’s proto-hexameter (as applied by Tichy to aberrant Homeric scansion) runs a heavy risk of becoming circular, as it does not explain much more than irregularities that can also be due to prehistoric sound changes, like the vocalization

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131 For compelling points of criticism regarding our ability to reconstruct a proto-hexameter, see Hoekstra (1981: 33–53).
132 E.g. Haug 2002; Hackstein 2002: 8–9; and extensively Hajnal 2003: 63–100.
of *ṛ. Apart from the much-discussed verse-end ἀνδροτῆτα καὶ ἥβην, there is no evidence for the assumed trochaic fourth foot that cannot be explained otherwise. In order to show how patchy the evidence is, let us discuss in more detail a few forms that have been adduced.

Berg and Lindeman (1993: 186–193) analyze dactylic forms of the stem ἀνέρ‑ (with metrically lengthened ἄ‑), which are frequent in the fourth foot, as artificial stretched forms replacing original trochaic ones with ἄνδρ‑. Thus, the words ἀνέρες ἐσθλοὶ ὄροντο occurring at the end of the line (Od. 3.471; ὄρονται Od. 14.104) would be a transformation of *ἀνδρείς ἐσθλοὶ ὄροντο, which they view as an old “pherectranean formula” (1993: 193). They reject the scenario already proposed by Schulze (1891), who argued that ἀνέρα, ἀνέρες, ἀνέρας and ἀνέρε (the original forms, later to be replaced by ἀνδρα, ἀνδρες, etc.) underwent metrical lengthening. In that scenario the gen. and dat. sg. forms ἀνέρος, ἀνέρι are artificial analogical creations beside the inherited forms ἄνδρος, ἄνδρι.

The objections formulated by Berg and Lindeman against Schulze’s metrical lengthening scenario are:

(i) Forms like ἀνέρα (ending in a vowel) could have been used in the hexameter without metrical lengthening, but they are never so used;

(ii) Forms like ἀνέρες (ending in a consonant) could not have undergone metrical lengthening, as they could be placed before words starting in a consonant; ἀνέρες, however, is never used in this way;

(iii) As early as the Mycenaean period, Greek dialects could not have preserved ablauting paradigms of the type πατήρ / πατέρ‑ / πατρ‑, except in kinship terms.

The two objections concerning metrical lengthening are easily dismissed. First of all, Berg and Lindeman seem to have missed that all instances of original anapestic scansion (in forms of the shape ἀνέρα, ἀνέρες, ἀνέρας with short ἄ‑) may have been replaced completely by the innovative forms ἄνδρα, ἄνδρες, ἄνδρας once these had ousted the older forms from the spoken language. The stem ἄνδρ‑ is placed in the thesis 13 × on 72 instances of ἄνδρες, and 10 × on 44 instances of ἄνδρας, and this includes some archaic-looking phrases. As for

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133 As Barnes (2011: 9–10) remarks, “A problem with Tichy’s approach to these scanions has always been the implausibility of a scenario whereby not a single example of the phenomenon goes back to a form that would never have scanned properly.” For a similar criticism, see West (2011).

134 The forms and numbers are ἀνέρα 4 ×, ἀνέρος 19 ×, ἀνέρι 9 ×, pl. ἀνέρες 41 ×, ἀνέρας 17 ×, and du. ἀνέρε 5 ×.

135 This idea is repeated uncritically in Hajnal 2003: 78 n. 127.

136 Cf. ὃν Βριάρεων καλέουσι θεοί, ἄνδρες δέ τε πάντες / Αἰγαίων’ Il. 1.403–404, ὃν Ξάνθον καλέουσι θεοί, ἄνδρες δὲ Σκάμανδρον Il. 20.74, κύνες τ’ ἄνδρές τε νομῆες Il. 17.65, κύνας τ’ ἄνδρας
(ii), it is true that metrical lengthening of tribrachic forms ending in a consonant (e.g. ἀνέρες) is less frequent than with forms ending in a vowel (e.g. ἀνέρα), but the phenomenon does occur, especially with forms that are part of a larger phrase. A well-known example is the lengthened initial vowel of the gen. ὕδατος, which is explained by the occurrence of this form in the phrase Στυγὸς ὕδατος. Indeed, the ἀνέρ- forms also occur more than once in larger phrases: cf. verse-final ἀνέρες ἰπποκορυσταί, ἀνέρες ἄγροιώται, and the frequent verse-initial ἀνέρες ἔστε, φίλοι “be men, friends!”. Objection (iii) is not cogent, as ἀνήρ is (just like πατήρ) a high-frequency item in which an archaic inflection may well have been preserved longer.

The speculation that verse-final ἀνέρες ἐσθλοὶ ὄροντ- arose by a transformation of *ἀνδρες ἐσθλοὶ ὄροντ- is quite bizarre. In reality, in both attestations the entire formulaic phrase stretches from |p until the end of the line: ἐπὶ δ’ ἀνέρες ἐσθλοὶ ὄροντο “and noble men watched over it” (Od. 3.471), ἐπὶ δ’ ἀνέρες ἐσθλοὶ ὄρονται (Od. 14.104), with the preverb in tmesis. In other words, there never was a “pherecratean formula” *ἀνδρες ἐσθλοὶ ὄροντο. In reality, ἐπὶ ... ὄροντο is a clear reminiscence of Mycenaean o-pi, ge-to-ro-po-pi, o-ro-me-no (PY Ae 134), and the specific combination with the preverb may well be a phraseological relic from the Mycenaean period (as Hajnal 1998: 48 rightly notes). It is therefore highly plausible that the phrase ἐπὶ δ’ ἀνέρες ἐσθλοὶ ὄροντο contains a metrically lengthened relic form ἀνέρες.

From an Indo-Europeanist perspective, the forms ἀνέρα, ἀνέρες, ἀνέρας and ἀνέρε clearly reflect the expected full-grade stem *h₂nér- of the strong case forms.137 The form ἀνέρες is also the most frequent of all the ἀνέρ- forms in Homer and it occurs, as we saw, in formulaic phrases. Thus, dactylic forms like ἀνέρες may have arisen by metrical lengthening of the first syllable of a tribrachic form /aneres/, as long as that form was available. The gen. and dat. sg. forms ἀνέρος, ἀνέρι arose by an artificial extension of the pattern seen in ἀνέρες, ἀνέρας beside ἄνδρες, ἄνδρας after forms of the latter type had come into being. When unlengthened anapestic forms like /aneres/ were no longer current in the spoken language, they were replaced by ἄνδρες.

137 The so-called hysterokinetic paradigm. In Greek, cf. also πατέρα, πατέρες, πατέρας against πατρός, πατρί; and cf. Vedic acc. sg. pitáram, nom. pl. pitáraḥ, náraḥ.
In another contribution, Berg and Haug (2000) assume that the case forms νέες, νέας and νεός of the word for ‘ship’ in the fourth foot were substituted for trochaic *νῆες *νῆας *νηός when these were followed by the formulaic epithet ἀμφιέλισσα. This is an unnecessary assumption: the low numbers of attestations of νέες and νέας (in comparison with the numbers for νῆες and νῆας) are compatible with the relatively recent spread of a linguistic innovation (cf. Hoekstra 1965: 124–130).138 I would like to add that the original form of this formula may have been the acc. pl. in the form *ναύς ἀμφιελίσσας (with ναύς as attested in Attic, which may be an archaism).139

As a third example, Hajnal (2003: 76 n. 124) refers to the odd 3pl. form μιάνθην in the verse-end μιάνθην αἵματι μηροί (Il. 4.146) for expected *μίανθεν, suggesting that the latter form (which would be expected in Berg’s proto-hexameter) was actually sung by the original Iliad poet. However, although μιάνθην is indeed a strange form, it cannot be excluded that it was a one-off analogical creation (cf. Meister 1921: 25).

Scholars have also adduced artificially lengthened forms such as πτολιπόρθιος, ἀέθλια (for expected πτολιπόρθος, ἄεθλα) as evidence for Berg’s proto-hexameter, but these forms could equally well be accounted for in another framework, such as that of Witte (see below); they do not necessarily imply the existence of an earlier verse-form with a trochaic-ending fourth foot.

In sum, the purely hypothetical character of Berg’s scenario appears, first of all, from the fact that no less than four ‘transformations’ (cf. the clear summary in Hajnal 2003: 74–75) are needed to reach the attested hexameter from the putative starting point. Secondly, it explains only the genesis of the heptahemimeral caesura, not that of the more important bucolic dieresis and the third foot caesuras. Thirdly, assuming trochaic-ending pre-forms does not offer a convincing explanation for the peculiar linguistic forms occurring in the fourth foot. And finally, even if a scenario like that of Berg were correct, we have no idea at all when the hexameter would have come into being.140

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138 Note, in passing, that assuming an earlier verse with *νῆες ἀμφιελίσσας (allegedly with a trochaic fourth foot) does not take into account that the final syllable of the word preceding attested νέες ἀμφιελίσσας occupies the longum of the fourth foot, e.g. λιπὼν νέας ἀμφιελίσσας Il. 17.612, ἔχον νέας ἀμφιελίσσας Od. 10.91.

139 The real problem, the high frequency of the gen. pl. form νεῶν as opposed to νηῶν, is not even mentioned by Berg and Haug, presumably because it is inconvenient for their thesis. Concerning this issue, Hoekstra (1965: 124–130) has argued that the shortened form νεῶν is in many cases due to modification of an older prototype with νηῶν.

140 Ideas that the hexameter is of very recent origin (Berg and Haug 2000), or even that it was coined by Homer (Tichy 2010), are devoid of all realism.
In my view, Berg’s scenario (and similar ones) are clearly inferior to an almost forgotten proposal by Witte (1913), who argued extensively for deriving the hexameter from a combination of a dactylic tetrameter plus an adoneus.141 It has the advantage of accounting for the high general frequency of the bucolic dieresis, and also for the fact that the bucolic dieresis is the place where clause boundaries are most frequent. Furthermore, as Witte shows, the combination of a tetrameter plus an adoneus is actually attested in Greek poetry. Also, the two metrical laws that occur in the thesis of the fourth foot, Hermann’s Bridge and Wernicke’s Law, follow more or less automatically from the scenario. On the other hand, two caveats that were mentioned above with respect to other proto-hexameter theories apply to Witte’s scenario: it is not easy to test it against the evidence, and we have no idea when the hexameter would have acquired its Homeric form.

One gets the impression that the assertions of belief in Berg’s scenario were guided by, among other things, a desire to get rid of the pre-Mycenaean origin of the tradition argued for by classicists like Ruijgh and West.142 Indeed, as we will see the linguistic arguments for such an early origin are weak. However, given that the epic tradition is highly conservative in its formulaic language, and that the preservation of archaisms in this language must be understood as a function of the system’s thrift, it is difficult to see why the meter itself (which, after all, caused this system to develop) would not be equally conservative. Of course, the formulaic language was subject to continuous updating and reworking, as scholars like Hainsworth (1968) and Hoekstra (1965) have shown in detail. However, these modifications can be understood as the poets’ response to linguistic changes (they tried to remain comprehensible), combined with an attempt to maintain or even expand the economy and thrift of their system of verse composition. Even if we take into account these modifications, it can hardly be denied (as Hoekstra 1981 has argued in detail) that the formulaic system has a traditional core that goes back generations, and which presupposes the existence of something very much like the Homeric hexameter at an early date. In the course of this book, we will encounter various indications that corroborate this conclusion.

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141 Niels Schoubben has recently elaborated this idea in an as yet unpublished Ghent MA-thesis written under the supervision of Mark Janse.
142 Cf. various remarks in this sense in Berg and Haug (2003), e.g. on pp. 9–10.
1.6 Outlook

Leaving aside the environments (discussed in section 1.2) in which an anaptyctic vowel emerged beside *r̥ and *l̥ already in Proto-Greek, my aim is to answer the following three questions:

– What was the regular development of Proto-Greek *r̥ and *l̥ in the major Greek dialect groups?
– Which mechanisms affected the development of forms with etymological *r̥ in Epic Greek?
– What can be inferred, from the vocalization of *r̥ as an isogloss, about the genesis and prehistory of the four main dialect groups, and of Epic Greek?

In view of the possibility that *r̥ and *l̥ vocalized in different ways and at different times, the evidence for *l̥ will be treated separately in chapter 10. I will start, in chapters 2 and 3, with the regular development of *r̥ in all dialects apart from Ionic-Attic and Epic Greek. This requires that all available etymological evidence is evaluated and sifted. Special emphasis will be placed in these chapters on the question concerning the regular slot in which the anaptyctic vowel developed: before or after the liquid.

The treatment of the dual Ionic-Attic reflex (-αρ- beside -ρα-) starts in chapter 4 with one specific morphological category, the so-called ‘Caland formations’. This portion of evidence is important in that it illustrates that the majority of forms with -αρ- and -ρα- can be due to analogy, and hence are not probative as regards the regular reflex of Proto-Greek *r̥.

Chapter 5 is devoted to one specific set of ‘Caland’ formations, the etymological family of κρατερός ~ καρτερός, in which a number of different words occur in doublets, both in the classical language and in Epic Greek. Our goal in this chapter will be to determine the linguistic processes by which the doublets originated.

The conclusions reached in chapters 4 and 5 confirm the point that both -αρ- (ταρφύς, καρτερός, κάρτα) and -ρα- (κραταιός, θρασύς) are regular reflexes of *r̥. At first sight, this seems to confirm the impasse, but the analysis of θρασύς versus θάρσος in chapter 4 and that of καρτερός versus κράτος in chapter 5 have another consequence: they show that the analogical developments leading to doublet forms in Epic Greek were quite different from the developments taking place in the vernaculars.

In chapter 6, a distribution is established for doublets with -ρα- and -αρ-: the occurrence of -ρα- is shown to be limited to Epic Greek, while -αρ- may occur both in Epic Greek and in classical prose. The chapter then considers in full detail all forms with -ρα- occurring in Early Greek Epic. Many Homeric forms with -ρα- are characterized by metrical peculiarities, notably muta cum liquida
scansion. An fresh analysis of all instances of *muta cum liquida* in Homer confirms that the phenomenon correlates strongly with the original presence of *r̥*. Thus, combining the distribution of forms with -ρα- with their metrical behavior, I hypothesize that *r̥* was retained longer in the epic tradition in the way sketched in section 1.5.

This new framework is also applied to epic forms with -ρο-: in chapter 7, I investigate the hypothesis that -ρο- is the regular reflex of Epic *r̥* after a labial consonant. This chapter also includes a discussion of the phrases ἀνδροτῆτα καὶ ἥβην and Ἐνυαλίῳ ἀνδρεϊφόντη that have played such an important role in previous discussions. The evidence for -αρ- and -ρα- in thematic aorist forms is discussed separately in chapter 8, because the metrical behavior of these formations is different from that of other forms with Epic *r̥*.

Chapter 9 treats several remaining loose ends. I will revisit three specific phonological environments in full detail: *-r̥s-, word-final *-r̥*, and *-r̥m-. Also, I discuss the more marginal evidence (uncertain and implausible etymologies) and present an overview of further Ionic-Attic evidence for a regular reflex -αρ-< PGr. *r̥*.

After treating the evidence for *l̥* in chapter 10, including the dialectal reflexes and the possibility of discerning conditioned developments, chapter 11 uses the new insights concerning *r̥* and *l̥* to obtain a relative chronology. This will allow us to draw definite conclusions about the vocalization of *r̥* as an isogloss in the prehistoric development of the Greek dialect groups. In chapter 12, finally, I will take stock on the basis of a summary of my main conclusions, and ask whether the benefits of the new framework outweigh its potential drawbacks.