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Beek, L.C. van

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Prosody, Metre and Reflexes of $*r$ in Epic Greek

The Case of ῥέζω versus ἔρω

Lucien van Beek

1 Introduction*

The verb ἔρω ‘do’ is attested in Ionic and Cretan inscriptions, while the variant form ῥέζω is found in inscriptions from other Doric dialects.¹ In poetry, and especially in early Greek epic, both variants of the verb occur. This paper aims to clarify the distribution of ἔρω and ῥέζω in Homer, and to explain, on the basis of a detailed account of their prosodic behavior, how the two divergent stem-forms originated. Applying a scenario for the vocalization of $*r$ that I have proposed earlier (van Beek 2013; 2022), I argue that the verb became part of the epic tradition when its present stem had the shape $*wrdje/o-$ (with $*r$ still in place), and that ῥέζω developed from this by phonetic and analogical changes taking place within the tradition.

The paper is organized as follows. In section 2, existing scholarly views on the origin of ῥέζω and ἔρω are summarized and evaluated. Section 3 discusses relevant peculiarities of the epigraphic and literary attestations. Section 4 analyzes the distribution of both verbs in Homer and the prosodic behavior of their onset. This analysis shows that ῥέζω is an archaism of Epic Greek, but that its prosodic behavior is not compatible with a reconstruction $*ure-$. I will resolve this paradox in section 5 by applying my scenario for the vocalization of $*r$ in Epic Greek.

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1 The question of whether the Homeric manuscript evidence points to ἔρω with *spiritus lenis* or to ἔρω with *asper* has not yet been convincingly resolved (cf. Forssman 1966, 28–32, criticizing a proposal by Sommer 1905, 131). Since the issue is of marginal importance for the present investigation, I refrain from taking a stand. For the sake of uniformity, though, I will write ἔρω (with *lenis*) throughout this contribution when speaking about the morphological form. On the other hand, I follow West’s editions of *Iliad* and *Odyssey* when quoting Homeric text passages.

2 Existing Explanations for the Pair ῥέζω versus ἔρδω

There are, broadly speaking, two competing views on how ῥέζω and ἔρδω acquired their respective root shapes. These views depend, among other things, on the specific stem-form reconstructed for the aorist of **uerǵ-* in PIE.

PIE had a present stem **urǵ-íé/ó-* which is reflected in Mycenaean *wo-ze* ‘does, works, treats’ (representing either /wǝdzei/ or /wordzei/),² Avestan *varəziieiti* ‘does’, and in Germanic (e.g. Gothic *waurkjan* ‘work, do’). It is plausible, too, that the perfect stem reflected in Homeric ἔοργα ‘I have done’ and Younger Avestan *vauuarəza* is inherited.³

How to reconstruct the aorist stem, however, is a more complicated question. Old Avestan has clear evidence for an *s*-aorist (e.g. subj. *varəšaitī* < **uerǵ-s-e-tī*) but it may also preserve reflexes of a root aorist.⁴ Greek also has a sigmatic aorist, the current consensus being that its original shape was **uerǵ-s-ḡ* (> ἔρξα), as in Avestan.⁵ The genesis of the present stems ἔρδω and ῥέζω, and of aor. ἔ(ρ)ρεξα, is then explained as follows:⁶ when the syllabic liquid had vocal-

2 See van Beek (2022, chapters 2 and 11) for arguments supporting a retention of *r* in Mycenaean. In this paper, I conventionally represent the Mycenaean and pre-alphabetic reflex of **-d̥-* and **-ǵ-* as /dz/, without the intention of making a claim about the phonetic realization at the relevant stages. It is possible that the Mycenaean reflex was still a geminated palatal stop. Ionic ἔρδω has been used as an argument in discussions about the phonetic value of <Z> in classical Attic-Ionic: allegedly, the absence of a fricative element in ἔρδω presupposes that its pre-form had undergone metathesis to **werzde/o-*, in which form /z/ would have been regularly lost between /r/ and an occlusive. However, it cannot be excluded that the geminated voiced affricate /dz:/ lost its fricative feature and its length under influence of the preceding /r/, i.e. **werzde/o-* > **werde/o-* without metathesis. See also section 3.1 on Cretan. Since the issue has no consequences for the argument of this paper, I will not further discuss it here and simply write the pre-form of ἔρδω as **werzde/o-*.

3 Thus *LIV*² s.v. 2. **uerǵ-*. The Avestan perfect, however, is mainly attested as a middle, Old Avestan *vāuuarəzōi* (reflecting Proto-Indo-Iranian **H₁u-H₁uarǵ-* with an analogical onset **H₁u-*). There is a *hapax* active perfect form Younger Avestan *vauuarəza* (P 17), which has been emended to **vāuuarəza* by various editors (I thank Prof. Sasha Lubotsky for informing me on this matter).

4 The relevant forms (both in *Yasna Haptaŋhaiti*) are 2sg. *varəš* and perhaps 1pl. opt. *varəzimā=cā* (if somehow shortened from **varəzimā=cā*). The latter form could be an archaic root optative formation, as the *s*-aorist does not appear to have had an optative in Vedic and, by extension, in Proto-Indo-Iranian (see Narten 1984, 96–97).

5 Cf. *LIV*² s.v. 2. **uerǵ-*.

6 Cf. Kümmel (in *LIV*² s.v. 2. **uerǵ-*); Hamp (1985, 107). Starting from a present **uradzō* beside an aorist **uerǵs-*, Hamp distinguishes three changes. First, a new present **uerdzō* was created “with syllabic shape revised to conform to **werk-s-* and **we-worg-*”, then a new aorist **ureǵs-* was created besides the present stem **uradzō*, and finally **uradzō* was replaced by **uredzō*, with “relinquishment of a minor instance of alternation”. See also Chantraine (1958, 336), Risch (1974, 281), Rix (1992, 65).

ized to *r̥ (> dialectal *ra*, *ro*) in the present stem, a new analogical *e*-grade form **uregs-* was created in the aorist; subsequently, this new root shape **ureg-* also spread to the present stem. In other dialects, the present stem was redone as **uargje/o-* (later changed analogically to **uergje/o-*) on the basis of the aorist stem **uregs-*.

These accounts presuppose, however, that **ur̥g-* yielded **ur̥ag-* in a pre-stage of all Greek dialects (that is, a regular Attic-Ionic reflex -*ρα-* versus analogical -*αρ-*). This view on the reflexes of word-internal **r̥-* is widespread, but in my previous scrutiny of the complete etymological evidence for **r̥* (van Beek 2013; 2022), I have concluded that it cannot be correct. Instead, I argue that the regular reflex was **-ar-* in Proto-Ionic and some other dialects, but **-r̥a-* in Proto-Aeolic (> -*ρο-*) and in artificial reflexes of retained **r̥* (> -*ρα-*, -*ρο-*) in the epic tradition (see further sections 5.1–2). If this is correct, the widely-accepted explanation of the forms ῥέζω and ἔρρεξα cited above cannot work.

Another weakness of the assumed reshaping **ureg-* >> **ureg-* by analogy with **ur̥ag-* is that the place of the anaptyctic vowel is usually adapted to the regular full grade slot. Thus, one expects to find an analogical vocalization **uarg-* beside the full grade **ureg-* or **uorg-*, which was present not only within the verbal paradigm (ἔοργα) but also in other related forms (cf. ἔργον, Myc. *we-ke* /-*wergēs*/ ‘made’, *wo-ko* /-*worgos*/ ‘-maker’, εὐεργής ‘well-made’, εὐεργέτης ‘benefactor’, etc.). Furthermore, we must ask why two parallel verbal paradigms (ῥέζω beside ἔρδω) were created only in this particular verb: nothing similar is found in phonologically comparable verbs like τέρπομαι ‘enjoy oneself’ (aor. ἐτάρπην), τρέπω ‘turn, direct’ (aor. ἔτραπον), τρέφω ‘nourish’ (aor. ἔτραφον and ἐτρέφην).⁷

An alternative way to account for the two Greek paradigms would be to assume that **ureg̊-s-* is the oldest form of the sigmatic aorist inherited by Greek, as proposed by Bader (1965, 3–4). In support of this, she cites cognates from Celtic languages: Old Welsh *gwireith* > Welsh *gweith* ‘action, work’⁸ and Welsh *gwnech* (pres. subj. 3sg.) ‘*faciat*, may he do’. Following Watkins (1962, 26), she derives the latter from a sigmatic aorist stem **ureg̊-s-*.⁹ Indeed, for *Schwebe-*

7 An apparent exception to this claim is the Homeric aorist subjunctive form *τραπέομεν*, which belongs to *τέρπομαι* ‘enjoy; get satisfaction’, but in this case a second paradigm never developed. I have argued (van Beek 2013, 177–178; 2022, 270–271) that -*ρα-* in *τραπέομεν* is an artificial epic vocalization of **r̥*. On this, see further section 5.2 below.

8 Matasović (2008, s.v. **wextā-*) derives Welsh *gweith* from the IE root **ueg̊h-* ‘convey’. Whether this is correct or not, a verbal root **ureg-* in the meaning ‘do, make’ is abundantly reflected in Celtic: Middle Welsh 3sg. pres. *gwneuthur* (analogical for **gwr-*, cf. pret. *goruc*), Middle Breton 3sg. pres. *groa*, Cornish *gwra*.

9 Bader (1965, 6–9) also claims that the priority of ῥέξα over ἔρξα in Homeric Greek can be

ablaut between **uerg-* and a sigmatic formation **ureg-s-*, parallels like PIE **h₂eug-* besides **h₂ueg-s-* ‘grow’ and **h₂elk-* besides **h₂lek-s-* ‘defend’ may be invoked (cf. Schindler 1970, 152). Upon Bader’s analysis, the vocalism of ἔρδω, ἔρξα may have been introduced from the noun ἔργον,¹⁰ or under the influence of non-sigmatic verb forms (cf. ἔοργα).

Bader’s scenario is mentioned with some hesitation in *DELG* (s.v. ἔργον), and it has also encountered explicit criticism. Casabona (1966, 41–43) accepts Bader’s conclusion that the PIE aorist stem was **ureg-s-*, but he thinks this conclusion can only be based on the Celtic comparanda, taking issue with Bader’s arguments for considering ἔρρεξα an older aorist form than ἔρξα within Homeric Greek. The Welsh material is, in fact, open to more than one analysis. The stem **ureg-s-* reflected in *gwnech* could in theory have an old full grade (Schumacher 2004, 707 and 709), but is usually thought to be a secondary remodeling of **uerg-s-* based on the zero grade reflex **urig-* (cf. Isaac 1996, 334).¹¹ In Hamp’s words (1985, 108), the vocalism of Welsh *gwnech* and *gwreith* “does not show that ῥεξ- is old, for it is precisely in Celtic that this syllabic sequence results in **r > ri*.” In other words, for Hamp it is not accidental that evidence for a full grade **ureg-* is limited to those branches of Indo-European (Greek, Celtic) where **r* developed the anaptyctic vowel *after* the liquid.¹² As noted above, however, the assumption that **r > *rə* in all Greek dialects is problematic, and the same is true of the assumption of two alternative vocalizations (**rə* or **ər*) without further conditioning, as per Bader and Casabona.

Thus, the precise scenario by which the paradigms of ῥέζω and ἔρδω took shape is still unclear. Assuming a Proto-Greek aorist **ureg-s-* (with an aberrant full-grade slot) would make it much easier to explain the genesis of ῥέζω, and from an Indo-European point of view such a reconstruction cannot be

established with statistical, morphological, stylistic, and prosodic arguments. As Casabona (1966, 41–43) has shown, however, most arguments adduced by Bader are not pertinent.

- 10 Cf. Ruijgh (1957, 71 n. 2) and also Bader (1965, 4), who mentions the secondary *e*-grade reflected in Old Saxon *wirkian* ‘work’ (besides Goth. *waurkjan*) as a parallel. Cf. also *DELG* (s.v. ἔργον): “Le vocalisme *e* de ἔρδω et ῥέζω vient de ἔργον, peut-être aussi d’un vocalisme *e* qui a pu exister à l’aoriste”. For the antiquity of PIE **uerg-o-m*, cf. Hamp (1985, 103–106).
- 11 There is also the Middle Welsh preterit *gwrith* ‘made’ reflecting **urigt*, originally a sigmatic aorist form; this could either reflect an analogical zero grade **urig-s-t* or theoretically also **urikt*, from the expected lengthened grade form **ureg-s-t* (Isaac 1996, 334–335; Schumacher 2004, 710–711).
- 12 Kümmel (*LIV*² s.v. 2. **uerg-*) claims that verbal forms reflecting **uərg-* (Myc. *wo-ze*) cannot be understood if we start from a full grade **ureg-*, but this is unfounded given that the full grade **uerg-* may stem from nouns such as **uergom* on any account, and because the allomorph **ureg-* may have originally been restricted to the sigmatic aorist.

ruled out. However, as will be shown in section 4, prosodic and metrical evidence from Homer appears to speak for a reconstruction **ur̥g-s-*. I will therefore first analyze the attestations, distributions and prosodic behavior of ῥέζω and ἔρδω in more detail in section 3, before attempting a new reconstruction of the prehistory of both verbs.

3 ῥέζω versus ἔρδω: Patterns of Attestation

In Mycenaean, the present stem *wo-ze* (inf. *wo-ze-e*, pass. ptc. *wo-zo-me-no*) occurs. It is used in Knossos to describe (part of) the process of manufacturing objects like wheels; in Pylos it denotes the working of plots of land.¹³ As the noun *i-je-ro-wo-ko* /^hieroworgos/ ‘priest’ illustrates, the verb could already refer to the performance of ceremonial acts.

After the Mycenaean period, the verb was lost in some dialects, but retained in others, notably Ionic and various Doric dialects. In Homer, ἔρδω and ῥέζω are synonymous: both may mean 1. ‘do, act, perform’ and specifically 2. ‘sacrifice’.¹⁴ An innovation of Homeric Greek with respect to Mycenaean is that ἔρδω and ῥέζω no longer have the meaning ‘produce, work a product’: in this sense, Homer uses verbs like τεύχω, ἐργάζομαι, πονέομαι, ἀσκέω along with various more specialized terms.

3.1 Attestations in the Alphabetic Dialects

In Ionic prose, ἔρδω (aor. ἔρξα, perf. ἔοργα) is attested in Herodotus and the Hippocratic Corpus in the same meanings as in Homer. There are some possible instances of Homerizing language in Herodotus, and the verb may well belong to an archaic or high register.¹⁵ It is unlikely, however, that Herodotus was imitating Homer when using ἔρδω, for in that case he would probably have used the form ῥέζω (as he does once but, significantly, in an oracle). The form ἔρδω is also used in Ionic inscriptions¹⁶ and in elegy and iambic poetry (Archilochus, Semonides).

13 Cf. *DMic.* s.v. *wo-ze*.

14 See e.g. *LSJ* s.v. ῥέζω; *LfggE* s.v. ἔρδω (p. 680); Casabona (1966, 39–65, esp. 44). According to Bader (1965, 137–138), the oldest religious meaning is ‘perform a ceremonial act’ (*Il.* 1.144, *Od.* 5.102, Hes. *Op.* 336); this meaning was then narrowed down to ‘sacrifice’ in the *Odyssey*.

15 Casabona (1966, 60–61) mentions phrases like ἀθέμιστα ἔργα ἔρδεσκε (*Hdt.* 7.34), ἀθέμιστα ἔρδειν (8.143), ἔρδει πολλά και ἀτάσθαλα (3.80). It cannot be excluded, however, that such phrases were still current in the spoken language: note that Homer uses ἀθέμιστια instead of ἀθέμιστα.

16 Attestations include *προσερδεν IG XII,8 358.a1* (Thasos, 490–480 BC); *ερδεν LSAM 42.b4*

No doubt ἔρδω was also current in Old Attic: the manuscript tradition of Homer and the tragedians preserves evidence for an initial *spiritus asper* that is probably to be explained as an Attic development (Forssman 1966, 31). In classical Attic prose, however, there is no remnant of either ἔρδω or ῥέζω.¹⁷ The sole prose attestation of ῥέζω until the end of the classical period is the aor. ἔρρεξα, used by the Laconian character Megillus in Plato's *Laws* (*Leg.* 642c) to convey words typically spoken by his countrymen.¹⁸ Since Megillus more than once uses words from his own vernacular, Plato seems to have judged that ἔρρεξε was Laconian for ἐποίησε or similar.¹⁹

The pre-form underlying ἔρδω is also attested in Cretan. In this dialect the present **uerdzō* developed to *φηρω*, attested in inscriptions from the 5th c. BCE onwards, while an aorist optative *φερκσιεν* 'may they perform' is found at Gortyn (cf. Bile 1988, 136–138 for the attestations). The exact process leading to *φηρω* is debated. According to the most widespread view, **uerdzō* > **uerdō* underwent spirantization to **uerdō*, after which the fricative was lost with compensatory lengthening. Alternatively, Bile (l.c.) suggests that **uerdzō* may have been simplified to **uerzō*, after which *-rz-* was simplified with compensatory lengthening. In either case, we may reconstruct both pres. **uerdzō* and aor. **uergsa* for a pre-stage of Cretan, exactly matching the Ionic forms.

Besides ἔρρεξε in Plato's *Laws*, there is more evidence linking ῥέζω to the Doric realm. The present ῥέζειν (with *ιερείον τέλειον* as an object) is found in Cnidus;²⁰ furthermore, a present imperative *ἐπιρρεζέτω* occurs in a Coan inscription from the 4th c. BCE,²¹ and (spelled *ἐπιρρεζέτω*) in Ialysus (late 4th c. BCE).²² In addition, an agent noun *αυτορεκτας* is attested in a *lex sacra* from Selinous, a Megarian colony in Sicily (beginning of the 5th c. BCE).²³ A final potentially relevant form is the aorist participle *φερξαντα*, in an inscription of purity

(Miletus, appr. 500 BCE); *ερδ[η]ι* *LSAM* 44.3–4; *ερδεται* *Απολλωνι* *LSAM* 50.15; *ερδεται ... δαρτον* *ibid.* 30–31 (the Milesian "Molpeninschrift"); *τηι* *Ηρηι* *ανεθεσαν δεκατην ερδοντες γοργυρην χρυσην* *IG XII,6* 2:577.7–8 (Samos, 580–570 BCE).

17 There is one occurrence of ἔρδω in Aristophanes, but in an anonymous proverb (ἔρδοι τις ἦν ἕκαστος εἰδείη τέχνην, *Ve.* 1431).

18 Ἡ πόλις ὑμῶν, ὦ Μέγίλλε, ἔφασαν, ἡμᾶς οὐ καλῶς ἢ καλῶς ἔρρεξε "they [the Laconians] would say: Your State [i.e. Athens], Megillus, has done us a bad turn or a good one".

19 "... comme ῥέζω est attesté sur le domaine dorien, on peut penser qu'il y a ici un dorisme voulu. Il y en a d'autres dans les *Lois*." (Casabona 1966, 61).

20 *SGDI* 3501.9.

21 *IG XII,4* 1:332.62.

22 *IG XII,1* 677.29.

23 Jameson et al. (1993, 16). Since the inscription does not write geminates, it would be possible (though unnecessary, in view of Homeric ἄρεκτον) to follow Dubois (1995, 139) in reading *αυτορρεκτας*.

TABLE 1.1 Attestations of ἔρδω and ῥέζω in epigraphic and dialectal sources

Dialect	Present stem	Aorist stem
Ionic	ἔρδω	ἔρξα
Cretan	ῤῥω < *werdzō	ῤῥασιεν (opt.)
other Doric	ῥέζω	ἔρρεξα (Lac. in Plato) ?ῤῥεξαντα (Cleonai)
Cyprian		e-we-re-xa
Boeotian	?ῥέδδω (Eust.)	

regulations on a four-sided block found in Cleonae (dated 575–550 BCE).²⁴ In view of these facts, the attribution of the form ῥέζω (or ῥέδδω) to Doric in Ancient lexicographers (*Etymologicum Gudianum*, *Etymologicum Magnum*) and Eustathius (*Comm. Il.* 1, 343) probably reflects a genuine tradition.

Attestations in other dialects are more marginal. The Cypriot form spelled e-we-re-xa on the Idalion Bronze Tablet could represent either /ewergsa/ or /ewregsa/. Eustathius (*Comm. Il.* 3, 636) mentions ῥέδδω as Boeotian, but the form is adduced merely in order to offer an etymology for ἔρδω, which according to Eustathius arose from ῥέδδω by metathesis. Therefore, and given that Eustathius elsewhere ascribes ῥέδδω to Doric, the value of this remark regarding dialect description remains quite unclear. In other Aeolic sources (epigraphic or literary), the verb is not found.

3.2 ἔρδω vs ῥέζω in Homer and Later Poetry

In Homer, leaving the perfect stem out of consideration, there are 99 instances of the simplex ῥέζω against 40 instances of ἔρδω.²⁵ After Homer the relative frequency is reversed: in Hesiod (including Hesiodic fragments), we find 6

24 IG IV 1607.5; see Jeffery (1990, 148–150). The dialect of Cleonae is a variety of Doric closely related to other dialects of the Argolid, and the inscription seems written in genuine dialect (it has e.g. αἰ for εἰ, and the infinitive εἰμεν for εἶνα). Unfortunately, significant parts of the text can no longer be read, and the precise meaning of ῤῥεξαντα cannot be established. Since the inscription does not use <η>, a reading ῤῥηξαντα cannot even be excluded.

25 In this count, I have included the iteratives in -σϫ-, but excluded perfect stem forms, which are irrelevant for the question as to how the allomorphy ῥέζω ~ ἔρδω originated. Forms of the prefixed verbs κατὰ(ρ)ῥέζω 'caress' and ἐπιρρέζω 'offer sacrifice' have not been included either.

instances of $\acute{\rho}\acute{\epsilon}\zeta\omega$ against 12 of $\check{\epsilon}\rho\delta\omega$, i.e. a ratio 1 : 2.²⁶ Although the sample size in Hesiod is small, the relative frequency of $\acute{\rho}\acute{\epsilon}\zeta\omega$ versus $\check{\epsilon}\rho\delta\omega$ is about five times as low as in Homer. On the other hand, the prosodic behavior of both verbs is entirely consistent with that found in Homer: Hesiod neglects word-initial digamma in all 10 instances of $\check{\epsilon}\rho\delta\omega$ where this can be judged, and the initial $\acute{\rho}$ - of $\acute{\rho}\acute{\epsilon}\zeta\omega$ never makes position after a short vowel. It is therefore not entirely clear to what extent the change in relative frequency is significant.²⁷

In other forms of poetry both $\acute{\rho}\acute{\epsilon}\zeta\omega$ and $\check{\epsilon}\rho\delta\omega$ are used, but $\acute{\rho}\acute{\epsilon}\zeta\omega$ is decidedly less frequent.²⁸ Classical poets sometimes use $\check{\epsilon}\rho\delta\omega$ in forms where Homer has $\acute{\rho}\acute{\epsilon}\zeta\omega$, e.g. $\epsilon\upsilon\ \acute{\epsilon}\rho\chi\theta\acute{\epsilon}\nu\tau\omicron\varsigma$ (Bacchyl. *Ep.* 13.33) versus $\acute{\rho}\acute{\epsilon}\chi\theta\acute{\epsilon}\nu\tau\omicron\varsigma\ \kappa\alpha\kappa\omicron\upsilon$ (Hom.). In the tragedians, instances of $\acute{\rho}\acute{\epsilon}\zeta\omega$ are virtually limited to questions of the type $\tau\acute{\iota}\ \check{\epsilon}\rho\epsilon\zeta\alpha$; ('what have I done?'),²⁹ whereas $\check{\epsilon}\rho\delta\omega$ is used in a wider range of constructions and seems to be a high register word with the same meaning as $\delta\rho\acute{\alpha}\omega$. Moreover, $\acute{\rho}\acute{\epsilon}\zeta\omega$ almost exclusively occurs in lyrical parts, and only once in the present stem.

Thus the general picture is that neither $\check{\epsilon}\rho\delta\omega$ nor $\acute{\rho}\acute{\epsilon}\zeta\omega$ was current in spoken Attic in the 5th c. BCE, and that $\acute{\rho}\acute{\epsilon}\zeta\omega$ was a highly marked form even in poetry. Some numbers are presented in Table 1.2 (next page).

The markedness of $\acute{\rho}\acute{\epsilon}\zeta\omega$ also appears from its prosodic behavior. As is well-known, resyllabification of $\acute{\rho}$ - in Attic Greek was automatic within lexical words (after a preverb, the augment, perfect reduplication, and at a compound seam); the resulting geminate is expressed as $-\rho\rho-$ in standard spelling. Between two lexical words this geminate spelling is never used, but Attic poetry and inscriptions show that the actual situation was more complex: word-initial $\acute{\rho}$ - may cause position length of preceding short vowels even at the boundary of lexical words. Stephens (1990) has argued that this prosodic behavior of $\acute{\rho}$ - depends on various factors such as metrical word shape, the type of internal morpheme boundary (compounds versus prefixes), and phonological domain (the degree of connectedness of two words). Interestingly, in the dialogue parts of Attic drama, resyllabification of $\acute{\rho}$ - appears to be preferred more strongly

26 Leaving aside fragments, the numbers even rise to 10× $\check{\epsilon}\rho\delta\omega$ against 3× $\acute{\rho}\acute{\epsilon}\zeta\omega$.

27 It might be taken into account, for instance, that the *Theogony* has only 1 instance of $\check{\epsilon}\rho\delta\omega$, as against 9 cases in the *Works and Days*. The phrases $\kappa\alpha\kappa\acute{\omicron}\nu\ \acute{\epsilon}\rho\epsilon\zeta\epsilon\iota$ and $\kappa\alpha\kappa\acute{\omicron}\nu\ \acute{\epsilon}\rho\zeta\alpha\iota$ in Hesiod are remarkable, because Homer only uses $\acute{\rho}\acute{\epsilon}\zeta\omega$ in this phrase ($\kappa\alpha\kappa\acute{\alpha}\ \acute{\rho}\acute{\epsilon}\zeta\alpha\iota$, $\kappa\alpha\kappa\acute{\omicron}\nu\ \acute{\rho}\acute{\epsilon}\zeta\alpha\upsilon\tau\iota$, etc.).

28 Cf. the tables in Casabona (1966, 61).

29 Cf. Casabona (1966, 62). This type of question also occurs in Homer, e.g. $\tau\acute{\iota}\ \acute{\rho}\acute{\epsilon}\zeta\omicron\mu\epsilon\upsilon\ \epsilon\upsilon\acute{\rho}\upsilon\pi\upsilon\lambda\omicron\varsigma$ 'ἤρωες; "What shall we do, hero Eurypylus?" (*Il.* 11.838).

TABLE 1.2 Number of attestations of ἔρδω vs. ῥέζω in poetry (excluding perfect stem forms)

	ἔρδω	ῥέζω	Ratio ἔρδω : ῥέζω
Homer	40	99	0.41
Hesiod	12	6	2
Archaic lyric ^a	16	5	3.2
Tragedians	33	19	1.74

a The attestations included here are from Pindar (9× ἔρδω, 4× ῥέζω), Bacchylides (5× ἔρδω), Simonides (1× ἔρδω), Anacreon (1× ἔρδω), and Stesichorus (1× ῥέζω). I encountered no instances of either verb in other archaic lyric poets.

within lower phonological domains: it was optional within the phonological phrase, but preferred within a phonological word, e.g. τὰ ῥάκη ‘the shreds’ (Aristoph. *Pl.* 1065).³⁰

However, when compared with other words in ῥ-, the behavior of ῥέζω in Attic poetry is highly aberrant: its onset *never* makes position, neither in augmented forms like ἔρεξα (where the phonological connection was closest) nor in less closely connected forms. Stephens casually suggests to explain this oddity from the fact that linguistic changes may spread by lexical diffusion. This is clearly not a real explanation: if it were correct, one would have to explain why ῥέζω was affected last of all lexemes. Now, as we will see, in Homer the behavior of ῥέζω is similarly aberrant. Given that in Attic drama, ῥέζω occurs almost exclusively in lyrical parts of the tragedians, it is highly implausible that its odd metrical behavior was rooted in the phonology and prosody of spoken Attic. It seems more likely that the tragedians were familiar with the traditional prosodic behavior of the *epic* word ῥέζω and consciously enforced this behavior in their compositions.

Returning to Homer: the preference for ῥέζω over ἔρδω is an archaism that tends to be reversed in later poetry. While ἔρδω may stem from Eastern Ionic vernaculars, ῥέζω is attested epigraphically only in Doric dialects. However, a Doric origin of a basic vocabulary item in Epic Greek is difficult to reconcile

30 See also Devine and Stephens (1994, 248–251), who cite the spelling ἀρτηματα ρρυμοις ‘suspension cords for poles’ (*IG* 1² 314.40) as an example of resyllabification within a phonological phrase.

with an old and widespread form. In what follows, I will argue that $\acute{\rho}\acute{\epsilon}\zeta\omega$, $\xi\rho\epsilon\xi\alpha$ are not Doric forms, but acquired their shape *within* the epic tradition. In order to see why such an account is attractive, let us now consider the distributions between $\xi\rho\delta\omega$ and $\acute{\rho}\acute{\epsilon}\zeta\omega$ within Homeric Greek, paying particular attention to their prosodic behavior.

4 $\xi\rho\delta\omega$ versus $\acute{\rho}\acute{\epsilon}\zeta\omega$ in Homer

As $\acute{\rho}\acute{\epsilon}\zeta\omega$ and $\xi\rho\delta\omega$ have the same lexical meanings, let us consider other factors that may have determined the choice between them.

The manuscript tradition is relatively uniform regarding the transmission of forms of $\acute{\rho}\acute{\epsilon}\zeta\omega$ and $\xi\rho\delta\omega$. According to my counts (based on West's editions), *variae lectiones* where a form of $\acute{\rho}\acute{\epsilon}\zeta\omega$ competes with a form of $\xi\rho\delta\omega$ (or the other way around) are found in less than ten percent of the attestations. This is a low figure, given that both verbs would be metrically acceptable in many instances. Moreover, in most cases it is relatively straightforward to determine which *varia lectio* is older.³¹

As morphology is concerned, in Early Greek Epic the following derivations occur only with the root allomorph of $\acute{\rho}\acute{\epsilon}\zeta\omega$:

- aorist passive (ptc. $\acute{\rho}\epsilon\chi\theta\acute{\epsilon}\nu$);³²
- compounded adj. in *-to-* ($\acute{\alpha}\rho\epsilon\kappa\tau\omicron\nu$ *Il.* 19.150, $\acute{\alpha}\nu\epsilon\pi\acute{\iota}\rho\rho\epsilon\kappa\tau\omicron\varsigma$ *Hes. Op.* 748);
- $\acute{\rho}\epsilon\kappa\tau\acute{\eta}\rho$ 'doer' (*Hes. Op.* 191).

On the other hand, the root of $\xi\rho\delta\omega$ appears in:

- $\xi\rho\kappa\tau\omega\rho$ 'doer' (*hapax*, Antimachus);
- $\xi\rho\gamma\mu\alpha$ 'deed' (widely attested, but only post-Homeric).³³

It is remarkable that $\acute{\rho}\epsilon\chi\theta\acute{\epsilon}\nu$, $\acute{\alpha}\rho\epsilon\kappa\tau\omicron\varsigma$, and $\acute{\rho}\epsilon\kappa\tau\acute{\eta}\rho$ are derivations that would normally use a zero-grade root (cf. $\acute{\epsilon}\delta\acute{\omicron}\theta\eta\nu$, $-\delta\omicron\tau\omicron\varsigma$, $\delta\omicron\tau\acute{\eta}\rho$), while derivations in $-\tau\omega\rho$

31 West's choice deserves attention at *Il.* 9.535 ($\xi\rho\zeta'$ West, van Thiel; $\acute{\rho}\acute{\epsilon}\zeta'$ Allen) and *Od.* 24.458 ($\xi\rho\epsilon\xi\omega\nu$ West, van Thiel; $\xi\rho\epsilon\zeta\omicron\nu$ von der Mühl). At *Od.* 11.130 and *Od.* 23.277, an almost identical line, the editor's choice is difficult: at the former place $\acute{\rho}\acute{\epsilon}\zeta\alpha\varsigma$ is much better supported by the manuscripts, but $\xi\rho\zeta\alpha\varsigma$ is found in a papyrus and two manuscripts. At the latter place, $\xi\rho\zeta\alpha\nu\theta'$ has much better credentials. The choice is further complicated by the fact that in both passages, $\xi\rho\delta\epsilon\iota\nu$ appears two lines later.

32 The aor. passive stem $\acute{\epsilon}\rho\chi\theta\eta-$ of $\xi\rho\delta\omega$ appears only in $\epsilon\upsilon$ $\acute{\epsilon}\rho\chi\theta\acute{\epsilon}\nu\tau\omicron\varsigma$ (*Bacchyl.* 13.32); otherwise this stem-shape belongs to $\acute{\epsilon}\acute{\iota}\rho\gamma\omega$, $\acute{\epsilon}\acute{\iota}\rho\gamma\nu\mu\iota$ 'shut in'.

33 In Hesiod, the *Homeric hymns*, Archilochus, Theognis, Solon, Pindar, Aeschylus, etc. A productive derivation from the verbal root, the *nomen rei actae* $\xi\rho\gamma\mu\alpha$ entered competition with the old noun $\xi\rho\gamma\omicron\nu$, presumably because the latter had been lexicalized in various concrete meanings.

and in -μα originally used a full-grade root. This distribution is suggestive of a connection between ῥέζω and the (prehistoric) zero-grade root allomorph *w̥r̥g-. This conclusion is reinforced by the following analysis of the prosodic behavior of ῥέζω and ἔρδω in Homer.

4.1 *The Problem: The Prosody of ῥέζω in Traditional Phraseology*

Casabona (1966, 42) has drawn attention to the repeated speech introduction χειρί τέ μιν κατέρεξεν ἔπος τ' ἔφατ' ἔκ τ' ὀνόμαζε (7×). If this verse is traditional, as he argues, the single -ρ- of κατέρεξε is difficult to square with a reconstruction **katewregse*: one would expect to find prosodic traces of the lost digamma. Furthermore, as Casabona noted, the same problem applies to the verse-final formulaic phrases ἱερά ῥέξας (*Il.* 1.147), ἱερά ῥέζων (*Od.* 1.61), ἱερά ῥέζον (*Od.* 3.5). Given the existence in Mycenaean of *i-je-ro-wo-ko* 'priest', one expects this verb phrase to have entered the tradition early on, with digamma still in place. However, the prosody of ἱερά ῥέζω (with ῥ- not making position) seems to contradict this assumption.

Casabona's point can be further strengthened if we consider the following examples of traditional phraseology, all with an inflected form of ῥέζω in verse-final position:³⁴

αἴσυλα ῥέζων (*Il.* 5.403), αἴσυλα ῥέζεις (21.214), αἴσυλα ῥέζοι (*Od.* 2.232; 5.10)
μέρμερα ῥέζων (*Il.* 11.502), μέρμερα ῥέζει (21.217).

The fact that αἴσυλος never reappears in Greek literature after Homer, except in the ancient scholarly tradition, proves that we are dealing with old phraseology. The parallelism between μέρμερα ῥέζω and verse-final μέρμερα ἔργα (*Il.* 8.453; 10.524) points in the same direction. In all 6 attestations of μέρμερα, this adjective either modifies a form of ῥέζω, or the noun ἔργα.³⁵

34 If we consider all instances of unaugmented ῥέζω starting in the arsis of a foot, a high proportion appear to be present stem forms (16×, against 6× all other stems taken together); among the formulaic instances just listed, the aorist stem only occurs in ἱερά ῥέξας (*Il.* 1.147). This is remarkable, given that the sigmatic stems of ῥέζω are more than twice as frequent overall (67×, against 31× present stem). At first, I wanted to ascribe this to an inherited difference in vocalism between **wrdze/o-* in the present stem and **wreg-* in the aorist stem, in line with Bader's reconstruction. I now think that the frequency of the present stem in these formulas may be related to their having a neuter plural object: the aorist stem prefers a definite and countable object.

35 Likewise, ἱερά is the object of a form of ῥέζω or ἔρδω in 9 of its 14 Homeric attestations; this underscores the relevance of Casabona's observations.

Whether or not one wishes to call these and other particular phrases containing $\rho\acute{\epsilon}\zeta\omega$ ‘formulaic’ or ‘traditional’,³⁶ they clearly pose a problem. On the one hand, they must have been in use before the disappearance of initial digamma in $*wr-$; on the other hand, reconstructions of $\rho\acute{\epsilon}\zeta\omega$ with $*wre-$ appear to be metrically excluded.

Before considering and criticizing the solution proposed for this apparent contradiction by Casabona and presenting my own solution,³⁷ it is important to reconsider the prosodic behavior of word-initial $\rho-$. Under which conditions do we expect to find prosodic or phonological traces of $*wr-$ in Homer? The handbooks do not take a firm position on the prosodic behavior of $\rho- < *wr-$ as opposed to that of $\rho- < *sr-$.³⁸ Moreover, Solmsen (1901) claimed that epic poets had no problem with a light scansion of short vowels before $\rho-$ reflecting $*wr-$. In case this is correct, the problem described above concerning phrases like $\epsilon\rho\acute{\alpha}\rho\acute{\epsilon}\zeta\omega\nu$ would be resolved automatically. However, as I will show in section 4.2 and 4.3, Solmsen’s claim turns out to be overly simplistic. Indeed, Casabona’s intuitions concerning $\epsilon\rho\acute{\alpha}\rho\acute{\epsilon}\zeta\omega\nu$ will be vindicated by revisiting the complete Homeric evidence for the prosody of $\rho-$, considering all words where it reflects $*wr-$ and contrasting their prosodic behavior with that of all words containing $\rho- < *sr-$. In this analysis, considerations relating to the prosodic hierarchy will be taken into account. To anticipate my conclusions, the situation where $\rho-$ does not cause position length of a preceding short vowel mainly occurs in cases of etymological $*sr-$. Moreover, the situation where $\rho- < *wr-$ does not cause position length normally occurs only under specific phonological conditions: at the boundary between two intonation units or phonological phrases, but not within a phonological phrase. These conclusions will serve to confirm the prosodic oddity of Homeric $\rho\acute{\epsilon}\zeta\omega$.

36 It is conceivable that the phrase $\kappa\alpha\kappa\acute{\alpha}\rho\acute{\epsilon}\zeta\epsilon\iota\nu / \rho\acute{\epsilon}\zeta\epsilon\iota$ ‘do mischief’ is traditional, but alternatively it may owe its (secondary) creation to the phrase $\kappa\alpha\kappa\acute{\alpha}\rho\acute{\alpha}\pi\tau\epsilon\iota\nu / \rho\acute{\alpha}\psi\alpha\iota$ ‘plan mischief’. Thus, $\kappa\alpha\kappa\acute{\alpha}\rho\acute{\epsilon}\zeta\epsilon\tau\epsilon$ (*Od.* 2.73, 20.314) before the bucolic dieresis has a direct counterpart in $\kappa\alpha\kappa\acute{\alpha}\rho\acute{\alpha}\pi\tau\omicron\mu\epsilon\nu$ (*Od.* 3.118), and for $\kappa\alpha\kappa\acute{\alpha}\rho\acute{\epsilon}\zeta\epsilon\iota$ before the trochaic caesura (*Il.* 3.354) we may compare verse-final $\kappa\alpha\kappa\acute{\alpha}\rho\acute{\alpha}\psi\alpha\iota$ (*Il.* 18.367).

37 Meyer (1866, 8) already noted the prosodic oddity, but his proposal (to replace forms of $\rho\acute{\epsilon}\zeta\omega$ in the text by digammated forms of $\xi\rho\delta\omega$ whenever the meter allows this) is too simplistic. Bader (1965, 7) also saw the problem, but nevertheless maintained that the root underlying the aorist stem was $*wreg-$.

38 Chantraine (1958, 177–178) merely remarks that gemination of $\rho-$ in sandhi does not always occur, but he does not distinguish between $*sr-$ and $*wr-$, nor does he mark any difference between internal and external sandhi. Monro (1891, 375) tries to distinguish the treatment of $*wr-$ from that of $*sr-$, but his claim that “lengthening is optional” for $*wr-$ is misguided by his reconstruction of $\rho\acute{\gamma}\acute{\epsilon}\omega$, which never had initial digamma (cf. Lat. *fīrīgor* < PIE $*sriHg-$).

4.2 Solmsen's Prosodic Analysis of $\acute{\rho}$ - from *wr- in Homer

Solmsen (1901, 134–135) compared the prosodic behavior of $\acute{\rho}$ - from *wr- in Homer with that of δ - from *dw- and of word-initial plosive plus liquid (abbreviated as PL). For these three types of lexical onset, it appears as if resyllabification of the (original) word-initial cluster was virtually obligatory in internal sandhi, i.e. after prefixes and in composition, but merely optional in external sandhi. See Table 1.3 (next page).

The frequent non-geminated onset of $\acute{\rho}\acute{\epsilon}\zeta\omega$ in internal sandhi (e.g. $\acute{\epsilon}\rho\epsilon\zeta\alpha$) was unexpected also for Solmsen and requires an explanation on any account.³⁹ But what to make of the behavior of words like $\acute{\rho}\acute{\epsilon}\iota\alpha$ in external sandhi, i.e. when the prosodic connection between the lexical onset and what precedes it was more loose? Can the scansion of the verse-final phrases $\acute{\iota}\epsilon\rho\acute{\alpha}\ \acute{\rho}\acute{\epsilon}\zeta\omega$, $\acute{\alpha}\acute{\iota}\sigma\upsilon\lambda\alpha\ \acute{\rho}\acute{\epsilon}\zeta\omega$, $\mu\acute{\epsilon}\rho\mu\epsilon\rho\alpha\ \acute{\rho}\acute{\epsilon}\zeta\omega$ be compared directly with that of $\acute{\rho}\acute{\epsilon}\iota\alpha$ in a half-verse like $\acute{\epsilon}\nu\theta\acute{\alpha}\ \kappa\epsilon\ \acute{\rho}\acute{\epsilon}\iota\alpha\ \phi\acute{\epsilon}\rho\omicron\iota$ (*Il.* 17.70)?

Solmsen counted 15 examples where short vowels preceding a form of $\acute{\rho}\acute{\epsilon}\zeta\omega$ show position length in the arsis, against 22 examples where such vowels remain prosodically light in the thesis. From this, and from data concerning a few other words (such as $\acute{\rho}\acute{\epsilon}\iota\alpha$) with $\acute{\rho}$ - from *wr-, he concluded that poets could exploit the two possibilities for metrical purposes: whether resyllabification took place or not depended on whether the preceding short vowel had to be placed in the arsis or thesis of a foot. Here, he followed Hartel's observation that position length in the thesis of a foot (excepting the first foot⁴⁰) is generally avoided.

This analysis is subject to several problems. Firstly, some of the reconstructions and etymologies accepted by Solmsen (e.g. *wr- in $\acute{\rho}\acute{\alpha}\pi\tau\omega$) have now proven to be incorrect. Secondly, he only looked at instances of a short vowel preceding $\acute{\rho}$ -, without considering more indirect clues for prosody such as the localization tendencies of words depending on their rhythmical shape. Finally, Solmsen could have made more fine-grained distinctions (beyond internal vs. external sandhi) in the degree of phonosyntactic connection at word boundaries.

Typologically comparable phenomena to those studied here are *liaisons* in French or *raddoppiamento fonosintattico* in Italian. There, the possibility and relative frequency of onset-to-coda resyllabification depends, among other things, on the syntactic relation with what precedes. There is, for instance,

39 Solmsen's view of $\acute{\epsilon}\rho\epsilon\zeta\alpha$ as a linguistically real metathesized form of $\acute{\epsilon}\acute{\epsilon}\rho\epsilon\zeta\alpha$ is *ad hoc* and difficult to sustain.

40 For thesis lengthening in the first foot, cf. # $\pi\upsilon\kappa\nu\acute{\alpha}$ ($\acute{\rho}$) $\acute{\rho}\omega\gamma\alpha\lambda\acute{\epsilon}\eta\nu$ 'torn in many places' (*Od.* 13.438).

TABLE 1.3 Examples of the syllabification of word-initial **dw-*, **wr-* and PL- in external versus internal sandhi

Lexical onset	Sandhi type	Example of resyllabification	Example without resyllabification
<i>*dw-</i>	Internal	Obligatory, e.g. ἔ(δ)δειςεν ^a	Non-existent
	External	οὐδ' ἄρ' ἔτι (δ)δῆν # <i>Il.</i> 6.139 plus 5×	μηδ' ἔτι δηρὸν # <i>Il.</i> 2.435
<i>*wr-</i>	Internal	Normal, e.g. ἔρρηξεν	Only in ἔρεξα, κατέρεξα, ἄρεκτος
	External	οὐ κε μάλα (ρ)ρέα # <i>Il.</i> 20.101	# ἔνθά κε ρεῖα φέροι <i>Il.</i> 17.70
PL-	Internal	Normal	Extremely rare ^b
	External	ἀλλὰ πολὺ πρὶν # (<i>po.lyp.rin</i>) <i>Il.</i> 9.250	# ἀλλ' ἐμέ πρὶν ἀπέπεμψε <i>Od.</i> 14.334

a Often spelled ἔδειςεν, but always with a heavy first syllable.

b See van Beek (2022, 254–255) with further references.

a stronger phonological connection between a preposition and a dependent noun than between a verb and its subject. The strongest connection exists in inflected prefixed forms (e.g. in Greek ἔρρηξε, ἔρρηκται), and after that in derived prefixed forms (e.g. καταρρήγνυμι). Moreover, as noted in section 3.2, metrical evidence from Attic drama shows that resyllabification of *ῥ-* also took place in higher phonological domains, even if it was not normally expressed in spelling. Although the general principles governing such resyllabification in Homeric Greek were the same as in Attic, the details are quite different. This is due not only to the influences of different dialects on Epic Greek, but also to the fact that the development **wr-* > *ῥ-* was a relatively recent event when the Homeric text was fixed, while the lenition **s-* > *h-* had taken place much earlier.

4.3 Evidence for **wr-* and **sr-* in Homeric Words with *ῥ-*

I have delimited a corpus of words starting in *ῥ-* reflecting **wr-* or **sr-*, excluding the following words with problematic, uncertain or unknown etymologies or reconstructions:

- No cognates are known of *ῥέπω* ‘incline’, *ῥίς* ‘nose’, *ῥίψ* ‘mat, wickerwork’, *ῥόπαλον* ‘club’, *ῥύπα* ‘dirt’ and *ῥυπόω* ‘defile’, *ῥώπες* and *ῥωπήϊα* ‘brushwood’, and *ῥώξ* (meaning unclear, *Od.* 22.143).
- *ῥοχθέω* ‘roar’, *ῥοίζος*, *ῥοιζέω* ‘whistle’, and *ῥοιβδέω* (*ῥυβδέω*) ‘gulp up, swallow’ and its compounds are onomatopoeic.

- There is no convincing or established etymology for ῥαίω ‘tear’, ῥέθρα ‘limbs(?)’, ῥήγος ‘rug’, ῥίμφα ‘swift’.⁴¹
- χρυσόραπις ‘with golden staff’, cf. also ῥαπίζω ‘beat with a stick’: the root reconstruction remains unclear, as no certain cognates of the underlying noun are known,⁴² a relation with ῥάβδος ‘wand’ being uncertain (cf. *EDG* s.v.).
- The root reconstruction of ῥάχις ‘spine; chine’ (with ᾱ) is unclear. A connection with Att. ῥᾶχός, Ion. ῥήχός ‘thorny hedge, palisade’ could be assumed on the basis of lexical semantics, but the difference in vowel length is difficult to explain from Indo-European ablaut (and could be considered suggestive of a borrowing). It is therefore better not to base the onset reconstruction of ῥάχις on the gloss ὀρήχου· τῆς αἵμασιᾶς ‘stone wall’ (Hsch.), which looks like the same etymon as ῥηχός.
- A connection of ῥήσσω ‘beat, knock’ (non-Ion. ῥάσσω) with ἀράσσω ‘hit, strike, dash’ is semantically plausible; it is phonologically possible if ἀράσσω shows a disyllabic reflex of *srh₂g- or *wrh₂g-.⁴³ However, there are no ascertained Indo-European comparanda. Since ῥηγμίς -ῖνος ‘coastline; surf’ may be a derivative of ῥήσσω,⁴⁴ I leave it out of account, too.
- ῥίον ‘mountain peak’: the connection with Thracian βρία = πόλις, τεῖχος (Strabo, Hsch.) is not unattractive, but remains uncertain in view of the Myc. toponym *ri-jo*, which would exclude initial digamma (cf. *DELG* s.v.). An alternative derivation *sr-io- from the PIE root *ser- ‘high’ remains uncertain, too.
- ῥόδον ‘rose’ does not appear in Homer as a simplex, but we do find the compound ῥοδοδάκτυλος ‘rosy-fingered’, which occurs mostly in φάνη ῥοδοδάκτυλος Ἥως, with ῥ- preceded by a long vowel. Even though Sappho’s βρόδον clearly proves a reconstruction with *wr-, I have left out this formulaic phrase because its frequency would distort the counts. Moreover, it is possible that ῥόδον reflects *wrdo- in view of Myc. *wo-do-we* ‘rose-scented’ (cf. van Beek 2022, 319–321). If so, this etymon originally had a monoconsonantal onset, and would as such be comparable to ῥέζω < *wr̥d̥je/o-, the form under discussion here.

41 For ῥήγος, cf. Meissner (2006, 78–79).

42 Heubeck (1959) argued that the PN Myc. *wa-ra-pi-si-ro* represents /Wrapsilos/ and is hypocoristic for /Wrapsi-lāwos/ ‘who beats the people with a stick’, with /wrapsi-/ related to ῥαπίζω. Though this analysis is widely accepted, it remains highly uncertain, as we are dealing with a personal name.

43 *srh₂g- seems better in view of the regular elision before ἀράσσω in Homer.

44 Note that the root vowel of Att. ῥᾶχιᾶ ‘coastline; flood’, with almost identical meaning, seems to exclude the universally accepted derivation of ῥηγμίς from ῥήγνυμι ‘break’ (contra *DELG*, *GEW*, *EDG*, all s.v. ῥήγνυμι).

- ῥυσός ‘wrinkled’ is of unclear etymology, in spite of the proposed connection with ἐρύω (*DELG* s.v. ῥυσός).
- Forms of ῥύομαι, ἔρῳμαι ‘oversee; protect’, and the derived noun ῥυτήρ ‘keeper, surveyor’. The root must be distinguished from ἐρύω ‘draw’ (**ueru-*) and has traditionally been compared etymologically with Ved. *varūtár-* ‘protector’. However, Wathelet (1968) has cast serious doubts on this connection.⁴⁵ In my view, a Proto-Greek reconstruction **serū-* / **srū-* (PIE **sruH-*) is more attractive, which would make ῥύομαι, ἔρῳμαι related to PIE **ser(μ)-* ‘oversee’ (cf. Hom. ὄρομαι ‘watch’, Lat. *servāre* ‘keep, preserve’, Av. *hauruuaiti* ‘protects’). The Mycenaean form *o-u-ru-to* appears to speak for a reconstruction **urū-*, but as Wathelet argues, its interpretation as ‘thus they protect’ is not beyond doubt. Although I consider the connection with **serμ-* attractive, I will leave all forms of ῥύομαι out of consideration here. The etymology remains controversial for the time being, and individual forms of ῥύομαι ‘protect’ and ἐρύω ‘draw’ are not always easy to separate (a complete demonstration would consume too much space).⁴⁶
- ῥώομαι ‘move vigorously’ (8x in Homer): its etymological connection with Hittite *šarḫiia/e-zi* ‘attack’ (cf. *LIV*² s.v. **serh₃-*) is a possibility, but not certain.

The inclusion of ῥήσσω and ῥώομαι among words with **sr-*, and that of ῥάχις and ῥυσός among words with **wr-* would not have mattered very much, as the numbers of attestation are low. There is one instance of ῥήσσω (*Il.* 18.571) where ῥ- causes position length, and in the single attestation of ῥάχις (*Il.* 9.208) a preceding final short vowel remains light. More to the point, the prosodic behavior of ῥύομαι, ἔρῳμαι excellently fits the prosodic evidence for ῥ- < **sr-* and contradicts that for ῥ- < **wr-*. In my view, this corroborates the etymological connection with PIE **ser(μ)-* ‘oversee’, but I will not press this point here.

In the tables in section 4.4, I will justify my reconstructions when needed. Importantly, note that the root of ῥάπτω did not have an initial digamma, as shown by Myc. *ra-pte-re*, *e-ra-pe-me-na*. In view of the reduplication type of *e-ra-pe-me-na*, ῥάπτω is included among the evidence for ῥ- < **sr-*.

45 The etymological reconstructions in Hackstein (2002, 123–131), who casts Wathelet’s arguments aside without further ado, seem far-fetched to me.

46 According to my own preliminary results, the *Odyssey* poet occasionally mixes up the prosodic behavior of ῥύομαι and ἐρύω. For instance, the hiatus before ἔρυσθαι in αὐτοῦ παρ νηῖ τε μένειν καὶ νῆα ἔρυσθαι (*Od.* 9.194, 10.444) is an innovation with respect to αὐτοῦ παρ νῆεσσι μένειν καὶ νῆας ἔρυσθαι (*Od.* 14.260, 17.429). The *Iliad* poet separates both verbs more strictly.

TABLE 1.4 Prosodic behavior of words with $\acute{\rho}$ - < *sr- in Homer in internal sandhi (including appositive groups)

Phonological domain	-ρρ-	-ρ-
in augmented or reduplicated forms ^a	16	1
preverb plus verb ^b	7	8
in nominal compounds ^c	30	11 (or 14) ^d

a Gemination: $\acute{\rho}\acute{\epsilon}\omega$ 8x, $\acute{\rho}\acute{\iota}\gamma\acute{\epsilon}\omega$ 7x, $\acute{\alpha}\pi\epsilon\rho\rho\acute{\iota}\gamma\alpha\sigma\acute{\iota}$ 1x. Non-geminated: $\acute{\epsilon}\rho\acute{\alpha}\pi\tau\omicron\mu\epsilon\nu$ 1x.

b Gemination: $\acute{\epsilon}\pi\iota\rho\rho\acute{\epsilon}\omega$ 2x, $\kappa\alpha\tau\alpha\rho\rho\acute{\epsilon}\omega$ 2x, $\kappa\alpha\tau\alpha\rho\rho\acute{\iota}\gamma\eta\lambda\acute{o}\varsigma$ 1x, $\pi\epsilon\rho\iota\rho\rho\acute{\epsilon}\omega$ 1x, $\pi\epsilon\rho\iota\rho\rho\upsilon\tau\omicron\varsigma$ 1x. Non-geminated: $\pi\rho\rho\rho\acute{\epsilon}\omega$ 7x, $\acute{\upsilon}\pi\epsilon\kappa\rho\rho\rho\acute{\epsilon}\epsilon\nu$ 1x.

c Gemination: $\acute{\alpha}\gamma\acute{\alpha}\rho\rho\omicron\varsigma$ 2x, $\acute{\alpha}\kappa\alpha\lambda\alpha\rho\rho\acute{\epsilon}\acute{\iota}\tau\eta\varsigma$ 2x, $\acute{\alpha}\psi\acute{o}\rho\rho\omicron\varsigma$ 2x, $\beta\alpha\theta\upsilon\rho\rho\acute{\epsilon}\acute{\iota}\tau\eta\varsigma$ 1x, $\beta\alpha\theta\acute{\upsilon}\rho\rho\omicron\varsigma$ 5x, $\acute{\epsilon}\upsilon\rho\rho\alpha\phi\acute{\eta}\varsigma$ 2x, $\acute{\epsilon}\upsilon\rho\rho\epsilon\acute{\iota}\varsigma$ 5x, $\acute{\epsilon}\upsilon\rho\rho\acute{\epsilon}\acute{\iota}\tau\eta\varsigma$ 2x, $\acute{\epsilon}\upsilon\rho\rho\omicron\varsigma$ 2x, $\kappa\alpha\kappa\omicron\rho\rho\alpha\phi\acute{\eta}$ 3x, $\kappa\alpha\lambda\lambda\acute{\iota}\rho\rho\omicron\varsigma$ 3x, $\chi\epsilon\acute{\iota}\mu\acute{\alpha}\rho\rho\omicron\varsigma$ 1x. Non-geminated: $\acute{\omega}\kappa\acute{\upsilon}\rho\omicron\varsigma$ 2x, $\kappa\alpha\lambda\lambda\acute{\iota}\rho\omicron\varsigma$ 2x, $\kappa\alpha\lambda\lambda\acute{\iota}\rho\acute{\epsilon}\epsilon\theta\rho\omicron\varsigma$ 2x, $\acute{\epsilon}\upsilon\rho\rho\acute{\epsilon}\epsilon\theta\rho\omicron\varsigma$ 1x, $\acute{\alpha}\mu\phi\acute{\iota}\rho\upsilon\tau\omicron\varsigma$ 4x.

d The raised number includes * $\chi\epsilon\acute{\iota}\mu\acute{\alpha}\rho\omicron\varsigma$ (3x), the form that may well underlie the attested forms of $\chi\epsilon\acute{\iota}\mu\acute{\alpha}\rho\rho\omicron\varsigma$.

4.4 Prosodic Behavior of $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$ Compared with Other Words with $\acute{\rho}$ -

The main oddity of $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$ is the following: in forms with an augment or preverb, gemination of root-initial $\acute{\rho}$ - is absent in 27 instances (e.g. $\acute{\epsilon}\rho\acute{\epsilon}\xi\alpha$, $\kappa\alpha\tau\acute{\epsilon}\rho\acute{\epsilon}\xi\epsilon\nu$), and occurs only in 4 instances ($\acute{\epsilon}\rho\rho\acute{\epsilon}\xi\epsilon(\nu)$, $\acute{\epsilon}\pi\iota\rho\rho\acute{\epsilon}\acute{\zeta}\epsilon\sigma\kappa\omicron\nu$). No gemination is found either in the derived adjective $\acute{\alpha}\rho\epsilon\kappa\tau\omicron\nu$. As already noted, there is not a single other Homeric word with guaranteed etymological *wr- that behaves similarly: -ρρ- occurs in at least 57 forms with inflectional prefix (e.g. $\acute{\epsilon}\rho\rho\eta\xi\epsilon$, $\acute{\epsilon}\rho\rho\iota\pi\tau\epsilon$), derivational prefix (e.g. $\acute{\alpha}\rho\rho\eta\kappa\tau\omicron\varsigma$), and in compounds (e.g. $\pi\omicron\lambda\acute{\upsilon}\rho\rho\eta\nu$).⁴⁷

By contrast, the treatment of $\acute{\rho}$ - < *sr- in the same phonological environments was quite different. This is summarized in Table 1.4:

- When preceded by the augment or a reduplication syllable, $\acute{\rho}$ - < *sr- is usually geminated (cf. $\acute{\epsilon}\rho\rho\iota\gamma\alpha$, $\acute{\epsilon}\rho\rho\epsilon\acute{\iota}$). The only exception is $\acute{\epsilon}\rho\acute{\alpha}\pi\tau\omicron\mu\epsilon\nu$ (*Od.* 16.379). Presumably, gemination was phonologically obligatory under these circumstances already when the epics were composed.
- In composition and derivation, gemination is the most frequent treatment, too. This is seen in verbs like $\kappa\alpha\tau\alpha\rho\rho\acute{\epsilon}\omega$, deverbal adjectives like $\kappa\alpha\tau\alpha\rho\rho\acute{\iota}\gamma\eta\lambda\acute{o}\varsigma$, $\pi\epsilon\rho\iota\rho\rho\upsilon\tau\omicron\varsigma$, and nominal compounds like $\kappa\alpha\lambda\lambda\acute{\iota}\rho\rho\omicron\varsigma$, $\kappa\alpha\kappa\omicron\rho\rho\alpha\phi\acute{\eta}$. However,

47 This total of 57 instances is based on forms of the following lexemes: $\acute{\alpha}\pi\omicron\rho\rho\acute{\omega}\xi$, $\pi\rho\rho\rho\acute{\iota}\zeta\omicron\varsigma$, $\pi\omicron\lambda\acute{\upsilon}\rho\rho\eta\nu(\omicron\varsigma)$, $\acute{\upsilon}\pi\acute{\omicron}\rho\rho\eta\nu\omicron\varsigma$, $\acute{\alpha}\rho\rho\eta\kappa\tau\omicron\varsigma$, $\acute{\alpha}\rho\rho\eta\tau\omicron\varsigma$, $\pi\alpha\rho\alpha\rho\rho\eta\tau\acute{o}\varsigma$; the prefixed verbs $\acute{\alpha}\nu\alpha\rho\rho\acute{\iota}\pi\tau\omega$, $\acute{\alpha}\pi\omicron\rho\rho\acute{\iota}\pi\tau\omega$, $\delta\iota\alpha\rho\rho\acute{\iota}\pi\tau\omega$, $\acute{\epsilon}\pi\iota\rho\rho\acute{\iota}\pi\tau\omega$ and $\acute{\alpha}\nu\alpha\rho\rho\acute{\eta}\gamma\eta\nu\mu\iota$, $\acute{\alpha}\pi\omicron\rho\rho\acute{\eta}\gamma\eta\nu\mu\iota$, $\acute{\upsilon}\pi\omicron\rho\rho\acute{\eta}\gamma\eta\nu\mu\iota$; augmented and reduplicated forms of $\acute{\rho}\acute{\eta}\gamma\eta\nu\mu\iota$, $\acute{\rho}\acute{\iota}\pi\tau\omega$ and $\acute{\rho}\acute{\iota}\zeta\omega$; and the forms $\acute{\epsilon}\acute{\zeta}\acute{\epsilon}\rho\rho\eta\xi\epsilon\nu$, $\sigma\upsilon\acute{\nu}\acute{\epsilon}\rho\rho\eta\kappa\tau\alpha\acute{\iota}$.

in Homeric Greek the single -ρ- treatment is relatively widespread for ρ- < *sr-: cf. forms like προρέουσι, ώκυρόφω, καλλιρόοιο, άμφιρύτη.⁴⁸ Given that such compounds with single -ρ- are mostly traditional epithets, it is plausible that this license stems from a dialect that contributed to an early stage of the epic tradition, i.e. Aeolic or possibly Mycenaean.

It appears that there is no parallel, not even in words with ρ- < *sr-, for the widespread absence of ρ-resyllabification in forms of ρέζω with an inflectional prefix (e.g. έρεξα). Parallels for the absence of gemination in άρεκτον (with a derivational prefix) are found only among words with ρ- < *sr-.

Turning to higher phonological domains (starting with appositive groups and clitic groups), the results of my counts for ρ- < *wr- are represented in Table 1.5 (next page). It distinguishes how often each lexeme is placed verse-internally, after a short vowel, and after other word-ends. In the case of preceding short vowels, it is specified whether position length (~ resyllabification) takes place or not. For various lexemes, the reconstruction of an onset *wr- is legitimated in the footnotes.

In 22 out of 76 attestations of ρέζω (29 percent), a word-final short vowel is not lengthened by ρ-. In all other forms with ρ- < *wr- taken together, this happens only in 8 cases out of 209 (3.8 percent). Five of these cases concern the lexemes ρεία and ρήτιδος. Even these, however, cannot serve as true parallels for the prosodic treatment of ρέζω. Apart from the clear numerical difference, the reasons are as follows.

First, a common strategy for dealing with CC-initial words of trochaic or dactylic shape was to place them at the beginning of a verse.⁴⁹ Among words with *wr-, this is the usual placement of ρεία (29× on 37), ρήτιδος (27× on 32) and verb forms like ρήξε (δέ) or ρίψε. The reason for this distribution is the tendency to avoid position length in the thesis of a foot. Forms of ρέζω are relatively rare, however, in verse-initial position; there is no trace of verse-initial forms like 3sg. indic. ρέξε (δέ), ρέξε (δέ). In this respect, then, ρέζω behaves like a CV-initial word, not as a CC-initial word.

48 Note that καλλιρροος and καλλιροος both occur, and that the forms ώκύρροος and άμφίρρυτος, though not attested, could have been used in dactylic hexameters. On the other hand, προρέω was clearly preferred over προρρέω because the latter was difficult to use.

49 For instance, the dative plural Τρωσί(ν) (69× total) is placed 43× in verse-initial position, 12× with its first syllable in the thesis (often followed by a postpositive element such as δέ), 9× with its first syllable in the arsis preceded by a prepositive element like καί, and only 5× in the arsis preceded by a word boundary (following a dieresis). For CC-initial words of spondaic shape, there is a strong tendency to place their first syllable in the thesis of a foot.

TABLE 1.5 Localization and prosodic behavior of words with $\acute{\rho}$ - < *wr- in Homer (external sandhi, including sandhi with proclitics)

	# Cases	Verse-initial	After short V		After V: or C
			position length	no position length	
ῥήγνυμι	42	17	6		19
ῥήξήνωρ	5		4		1
ῥωγαλέος	6	2	3		1
ῥωχμός	1	1			
ῥῆνός ^a	22	4	9	1	8
ῥίζα ^b	8	3	1	1	3
ῥήθη- ^c	2		2		
ῥητός	1		1		
ῥητήρ	1		1		
ῥήτρη	1				1
ῥήσις	1				1
ῥίπτω ^d	6	5			1
ῥίπτασκον	4	1			3
ῥῆπιή ^e	7		5		2
ῥεία ^f	37	29		2	6
ῥέα	10	3	2		5
ῥήϊδιος ^g	32	27		3	2
ῥάκος ^h	11		5		6
ῥῦμός ⁱ	6	1		1	4
ῥυτήρ ^j	3		3		
ῥυτός ^k	2	2			
ῥαδινός ^l	1		1		

a Cf. Myc. *wi-ri-ne-jo* 'made of leather' and Hom. *ταλαύρινος* 'steadfast'.

b Cf. Myc. *wi-ri-za*.

c Cf. Arcadian *φρησι*, Elean *φρατρα*.

d Digamma is attested in Arcadian PN *Φριψιδας* (*IG* v,2 323A, No. 20).

e Derived from *ῥίπτω*.

f Cf. Aeol. *βραδῖως* with digamma, and also the following *ῥέα*.

g Including *ῥηῖτερος*, *ῥηῖτατα*, *ῥηῖστος*.

h Cf. Aeol. *βράκεα*.

i *ῥῦμός* 'chariot pole' is derived from *ἔρῶ* 'draw' < **weru-je/o-*.

j Only in the senses 'drawer' and 'rope' (*Il.* 16.475, *Od.* 18.262, 21.173); related to *ἔρῶ* 'draw'.

k *ῥυτός* 'quarried (stone)' is derived from *ἔρῶ* 'draw'.

l Cf. Aeolic *βράδινος*. The *hapax ῥοδανός* (*Il.* 18.576) might but need not be related.

TABLE 1.6 Localization properties of words with $\acute{\rho}$ - < *wrV - in Homer, contrasted with $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$

	# Cases	Verse-initial	After short V	After V: or C	
*wrV -	209	95	43	8 (3.8%)	63
$\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$	76	11	28	22 (29%)	15

Secondly, words with a PL onset could be placed after short final thesis vowels—usually the first thesis—without making position, but only if the word boundary coincided with that between two phonological phrases or intonation units. This happens, for instance, in:⁵⁰

- # Ἔκτορα Πριαμίδην ‘Hector, the son of Priam’ (e.g. *Il.* 13.316)
- # εἶλετο, κρινάμενος ‘he took, having selected’ (*Il.* 11.697)
- # τῆς δ’ ἄρα κλαιούσης ‘of her then, as she was weeping, ...’ (*Od.* 20.92).

Cases of light scansion before $\acute{\rho}\acute{\epsilon}\acute{\iota}\alpha$ and $\acute{\rho}\eta\acute{\iota}\delta\iota\omicron\varsigma$ can be directly compared to scansions like that of Ἔκτορα Πριαμίδην: in all these cases, $\acute{\rho}$ - starts the second foot and directly follows the last ‘second position’ particle:⁵¹

- # ἔνθά κε $\acute{\rho}\acute{\epsilon}\acute{\iota}\alpha$ φέροι κλυτὰ τεύχεα Πανθοῖδαο (*Il.* 17.70)
- # ὅς ῥά τε $\acute{\rho}\acute{\epsilon}\acute{\iota}\alpha$ θέησι ... (*Il.* 22.23)
- # ὅς δέ κε $\acute{\rho}\eta\acute{\iota}\tau\alpha\tau$ ἔντανύσῃ βιὸν ἐν παλάμῃσι (*Od.* 19.577, 21.75)
- # τόφρα δέ $\acute{\rho}\eta\acute{\iota}\tau\epsilon\rho\iota$ πολεμίζειν ἦσαν Ἀχαιοί (*Il.* 18.258).

For $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$ the situation is completely different: see Table 1.6 above.

The large majority of light scansions before $\acute{\rho}$ - occur not in the 1st thesis, but in the 2nd and 5th. Moreover, cases like $\acute{\iota}\epsilon\rho\acute{\alpha}$ $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega\omicron\varsigma$ and $\acute{\mu}\acute{\epsilon}\rho\mu\epsilon\rho\alpha$ $\acute{\rho}\acute{\epsilon}\acute{\zeta}\alpha\iota$ occur within a single phonological phrase (consisting of verb plus internal object), where phonological cohesion was relatively strong.

50 Besides Ἔκτορα Πριαμίδην and Ἔκτορι Πριαμίδη, which together occur 10× in the *Iliad*, there are according to my counts only 22 instances of this prosodic treatment of PL in Homer (11× *Il.*, 11× *Od.*).

51 In a sixth example where $\acute{\rho}$ - < *wr - fails to resyllabify, $\sigma\phi\alpha\rho\alpha\rho\epsilon\upsilon\omicron\tau\omicron$ δέ οἱ πυρὶ $\acute{\rho}\acute{\iota}\zeta\alpha\iota$ (*Od.* 9.390), the prosodic connection between πυρὶ and $\acute{\rho}\acute{\iota}\zeta\alpha\iota$ was relatively weak: πυρὶ modifies the verb $\sigma\phi\alpha\rho\alpha\rho\epsilon\upsilon\omicron\tau\omicron$, while $\acute{\rho}\acute{\iota}\zeta\alpha\iota$ is its subject.

TABLE 1.7 Prosodic behavior of Homeric words with etymological *sr- in phrases where a preposition directly precedes ῥ-

	Number of cases	After short V		After V: or C
		position length	no position length	
ῥέεθρα	4		4	
ῥόος	10	8		2
ῥοή	1		1	
total	15	8	5	2

Finally, in cases where a preposition directly precedes a noun in ῥ- < *wr-, position length was clearly preferred: we find at least 9 instances,⁵² against a single instance of light scansion (ἐϋξέστω ἐπὶ ῥυμῶ # *Il.* 24.271).

Now shifting our attention to words with *sr-: their behavior at the boundary of phonological domains higher than the phonological word is markedly different compared to words with *wr-. After prepositions (Table 1.7, above), there was a choice to apply position length (e.g. κατὰ [ρ]ῥόον) or not (e.g. ἀμφὶ ῥέεθρα).⁵³ Table 1.8 (next page) shows how ῥ- < *sr- behaves at the boundary of phonological domains higher than the appositive group.⁵⁴

Words with ῥ- < *sr- behave like other C-initial words in external sandhi: there is normally no gemination of ῥ- after short final vowels. That this treatment is old is proven by formulaic phrases like παρ' Ὠκεανοῖο ῥοάων and ποταμοῖο ῥέεθρα (with pre-Ionic genitives and non-Ionic lexicon). If metrical position requires the syllable preceding ῥ- < *sr- to be heavy, this syllable usually ends in a consonant, long vowel or diphthong. This near-absence of onset-to-coda resyllabification is remarkable, as such resyllabification does seem to be normal for ῥ- < *sr- after prepositions (e.g. κατὰ ῥόον, cf. Table 1.7).

In Table 1.9 (next page) the behavior of ῥ- from *wr- in external sandhi is contrasted with that of *sr- and of ῥέζω:

52 ὑπὸ ῥιπῆς 5×, ἐπὶ ῥηθέντι δικαίῳ 2×, κατὰ ῥακέεσσι 1×, κατὰ ῥάκος 1×.

53 Gemination: κατὰ ῥόον 5×, παρὰ ῥόον 2×, ποτὶ ῥόον 1×. Non-gemination: ἀμφὶ ῥέεθρα 4×, ἀμφὶ ῥοάς 1×. A monosyllabic preposition is used in κὰρ ῥόον 1×, πρὸς ῥόον 1×. Instances of ῥηγμῖν- were left out of account (cf. section 4.3).

54 For words with ῥ- not included in this table, see section 4.3.

TABLE 1.8 Placement and prosodic behavior of Homeric words with etymological *sr- in external sandhi (excluding phrases where a preposition directly precedes β-)

	Total	After short vowel		After other codas
		position length	no position length	
ῥέεθρα	19			19
ῥέω	41		1	19
ῥόος	17		2	8
ῥοή	17			17
ῥάπτω	5	1		3
ῥαφή	1			1
ῥαπτός	2	1		
ῥιγέω	13	5		5
ῥιγώω	1			
ῥίγος	1	1		
ῥιγεδανός	1			1
ῥίγιον	5			3
ῥίγιστα	1			
ῥυδόν	1			
Total	125	8	3	76

TABLE 1.9 Comparing the prosodic behavior of Homeric ῥέζω with that of words with onsets *wrV- and *srV- in external sandhi (outliers in boldface)

	Number of cases	Verse-initial	After short vowel		Other codas
			position length	no position length	
*wrV-	209	45.5%	20.6%	3.8%	30.1%
*srV-	125	6.4%	2.4%	60.8%	30.4%
ῥέζω	76	14.5%	36.8%	28.9%	19.7%

Overseeing the evidence, the following conclusions can be drawn. In external sandhi, light scansion of word-final short vowels was exceptional before words with original $\acute{\rho}$ - < *wr-: incidental instances with $\acute{\rho}\epsilon\acute{\iota}\alpha$ and $\acute{\rho}\eta\acute{\iota}\delta\iota\omicron\varsigma$ may be compared to the treatment of word-initial plosive plus liquid at the boundary of phonological phrases or intonation units. Conversely, in words with etymological *sr- there is a very strong preference for light scansions. In internal sandhi, words with *wr- always show resyllabification of $\acute{\rho}$ - (gemination of the liquid), but in words with $\acute{\rho}$ - < *sr- both syllabifications are possible, especially in appositive groups.

Thus, the prosodic behavior of forms of $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$ preceded by short vowels (both in internal and external sandhi) would be extremely odd for an etymon that originally had an onset *wr-.

4.5 Casabona's Solution

In order to account for this oddity, Casabona proposed that at some point in the tradition post-dating the loss of digamma, forms like $\kappa\alpha\tau\acute{\epsilon}\rho\epsilon\acute{\xi}\epsilon$ and $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$ replaced older forms reflecting *katéwergse and *wérdze/o-, at least in formulaic material.⁵⁵ One potential indication for such a replacement would be the fact that $\acute{\xi}\rho\delta\omega$ usually does not cause elision or position length of the preceding syllable: that is, there are hardly any metrical traces of digamma in $\acute{\xi}\rho\delta\omega$ because such traces were systematically eliminated. In Casabona's view, the substitution may have taken place in all forms of the verb, but not necessarily in a systematic manner, or at a single stage; he even envisages a spread of $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$ in the rhapsodic or textual tradition after Homer. On the other hand, there are 15 instances of $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$ where $\acute{\rho}$ - causes position length of preceding short vowels in external sandhi, proving the reality of $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$ < *wr-. Casabona concludes that full paradigms of both $\acute{\xi}\rho\delta\omega$ and $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$ were in use for quite some time before the composition of both epics, but that nothing further can be said about their relative antiquity on the basis of the Homeric distributions.⁵⁶

There are a number of problems with this replacement scenario. First of all, epic poets tended to generalize forms that were current in contemporary Ionic. As we have seen in section 3, $\acute{\xi}\rho\delta\omega$ was such a form, whereas $\acute{\rho}\acute{\epsilon}\acute{\zeta}\omega$ was a highly marked choice after Homer. It would be strange if this marked form had been

55 The same proposal was made already by Meyer (1866, 8), but his reason for positing this substitution was a desire to restore digamma in as many places as possible. This explanation is obviously no longer acceptable.

56 Casabona (1966, 42): "aucun examen statistique des données homériques, *en l'état actuel du texte*, ne peut fournir d'indication solide sur l'antiquité relative de telles formes" (italics in original).

secondarily introduced in the (post-)Homeric tradition, but not in other (later) forms of poetry. A concrete counter-indication is that ἔρδω occurs twice in hiatus with a preceding short vowel: ἀποθύμια ἔρδοι *Il.* 14.261, φίλα ἔρδοι *Od.* 15.360. This shows that there was no *general* compulsion to replace ἔρδω with ῥέζω in the present stem. Indeed, it would be odd if ἔρδω was retained only in these two instances, but not in ostensibly old formulas.⁵⁷

Secondly, Casabona does not comment on possible motivations for replacing earlier *ἔερξα with ἔρεξα. Avoidance of word-internal hiatus did not play a role, as there are many Homeric forms starting with ἔε- (ἔεργω, ἔέλδωρ, etc.). Nor was there an obvious motivation for replacing putative verse-final phrases like μέρμερα *ἔρδων, as their hiatus would surely have been acceptable given the preservation of μέρμερα ἔργα.⁵⁸ Conversely, if forms of ῥέζω were always part of such formulaic phrases, their retention would be understandable: replacing them by forms of ἔρδω would have introduced hiatus without necessity.

Thirdly, poets would have had to make a rather drastic change in the prosodic behavior of ῥέζω in order to substitute it for ἔρδω in the arsis. It seems unlikely that they changed the syllabification of the onset *wr- from /w.r/ to /.wr-/ without any apparent cause. Therefore, in order to maintain his substitution thesis, Casabona has to claim that the *form* ἔρεξα itself, with single -ρ-, could have been made in spoken Ionic after the loss of initial digamma. In my view, this is virtually excluded since gemination of ῥ- in internal sandhi was obligatory in later stages of Ionic; even for ῥ- < *sr-, it is virtually obligatory in Homer.⁵⁹ At the time of composition of the *Iliad*, the loss of *w- in the onset *wr- was still a very recent development, which did not affect the traditional localization properties of forms or the metrical shape of compounds or augmented forms.

Assuming an Aeolic origin for ῥέζω would not solve the problem. Boeotian preserved initial digamma for a relatively long time, and in Lesbian poetry ety-

57 The exact motive for using ἔρδοι in hiatus only in these two instances is not entirely clear; it is interesting that the form is an optative (oblique at *Il.* 14.261; in a generalizing clause at *Od.* 15.360). It is fully conceivable that the phrases φίλα ἔρδεν and ἀποθύμια ἔρδεν were current in contemporary spoken Ionic.

58 Cf. also πολεμῆϊα ἔργα *Il.* 2.338 and *passim*; θέσκελα ἔργα *Il.* 3.130, *Od.* 11.374; καρτερὰ ἔργα *Il.* 5.757 and *passim*; πῖονα ἔργα *Od.* 4.318; σχέτλια ἔργα *Od.* 22.413; κακὰ ἔργα *Il.* 9.595, *Od.* 2.67 and *passim*.

59 According to Jatteau (2013), the onset ῥ- represents a geminated phoneme /rr^h/ synchronically in classical Attic. She considers the absence of ῥ-resyllabification in Attic drama to be an artificial poetic device, but does not take into account the situation in archaic lyric and epic. As we have seen, in Homer this possibility is old when ῥ- derives from *sr- (e.g. ὠκυρόος, ποτάμοιο ῥοάων).

mological *wr- is often represented graphically in manuscripts and papyri of Sappho and Alcaeus (e.g. βράκεια, βρόδον, βράδινος), implying that knowledge of etymological *wr- was preserved in the Lesbian tradition in the century following Homer.⁶⁰ In theory one could envisage that ῥέζω was taken from Doric, but it is difficult to imagine that the resyllabification properties of ῥ- are a Doric feature of Homer's language.⁶¹

Thus, contrary to Casabona's claims, ῥέζω cannot be a late and secondary intruder in Homeric Greek. Rather, ῥέζω is a traditional form that was maintained in cases where replacing it with ἔρδω would have introduced hiatus.

4.6 *Semantics Possibly Influenced the Choice between ἔρδω and ῥέζω*

I will now consider the actual Homeric distributions between ῥέζω and ἔρδω in more detail, adducing further evidence for the idea that the absence of ῥ-resyllabification in ῥέζω is an archaism. Moreover, I will identify possible semantic restrictions on the possibility to replace ῥέζω with the vernacular form ἔρδω.

Bader (1965) observed that, in the meaning 'dedicate a victim, sacrifice', the present stem can be formed from either verb, but the aorist and future stems are based almost exclusively on ῥέζω. From this, she concluded that the *e*-grade *wreg- was originally at home in the aorist, noting that relic meanings are usually preserved in older forms.

This argument was criticized by Casabona (1966). The one exception to Bader's distribution is the first hemistich # ἔρξανθ' ἱερά καλά (*Od.* 23.277); she explains it away by assuming that ἔρξανθ' has replaced a more original form ῥέξανθ' (attested as a *varia lectio*) under the influence of ἔρδω just two lines later (second hemistich ἔρδεν θ' ἱεράς ἑκατόμβας # *Od.* 23.279), and that ῥέξανθ' must be retained as a *lectio difficilior*.⁶² Casabona objects that one could also cite *Il.* 9.534–535, where the phrase θαλύσια ... Οἶνεὺς ῥέξ' (where ἔρξ' is better attested in mss.) is followed by οὐκ ἔρρεξε in the following line 536. If the same argu-

60 Bowie (1981, 74) concludes: "The presumption must be that examples of [digamma] in Lesbian verse are archaisms preserved in a native poetic tradition." In the discussion at pp. 79–84, Bowie argues that εὔρηξε (*Alc.* 179.2) for Hom. ἔρρηξε and Aeolic words with βρ- from *wr- are most probably archaisms, given the absence of cases in Aeolic poetry where the spelling βρ- reflects prehistoric *sr-.

61 Although Dorisms in the epic language are perhaps present on a minor scale, it is generally accepted that there was no structural influence of Doric dialects at an early date (see Cassio, this volume, chapter 4). As we have seen, ῥέζω is deeply rooted in the epic tradition.

62 Bader did not take into consideration the parallel passage *Od.* 11.130–133, where the nominative ἔρξας (*v.l.* ῥέξας) in line 130 is an inflected version of ἔρξανθ' at *Od.* 23.277 (*v.l.* ῥέξανθ'). This does not, however, affect the basic argument.

ment used by Bader is applied, one would have to assume that an original ἔρξ' in 9.535 was changed into ῥέξ' under influence of ῥέξω in the next line.⁶³ Thus, θαλύσια ... ἔρξ' is another possible exception to the rule formulated by Bader.

Although I agree with Casabona that it is difficult to reconstruct the original text at these two places, the distributions noted by Bader are remarkable and, on the whole, convincing. There is relatively little hesitation between ἔρδω and ῥέξω in the manuscript tradition, and considering those places where no variation is attested, Bader's distribution holds good. Moreover, there is another argument (not noted before) that allows us to understand why the choice between ῥέξω and ἔρδω depended on a combination of morphological and semantic factors. Most non-present stem forms of ἔρδω were prone to be confused with forms of ἐέργω, ἔργυμι 'keep in place, shut in', which also had an aorist εἶρξα, pass. εἶρχθην. Already before contraction of *ewe-, augmented indicative forms of the aorist of ἔρδω were identical to unaugmented counterparts of ἔργυμι. Furthermore, after the late application of Osthoff's Law to the contraction product of *ewe- in Ionic, all forms of the aorist and future stems of both verbs started in /erg-/.⁶⁴ This may have provided a motive for retaining non-present stem forms of ῥέξω (i.e. for not introducing corresponding forms of ἔρδω) when confusion was possible.⁶⁵ Indeed, κατέερξε occurs as the aorist of κατείργω 'shut up' at *h. Herm.* 356, while the aorist of καταρρέξω 'caress (with the hand)' in Homer is always κατέρεξε.⁶⁶ In the present stem, however, ἔρδω remained distinct from ἐέργω / ἔργω / ἔργυμι. We may therefore hypothesize that forms of the Ionic verb ἔρδω were preferred over corresponding forms of ῥέξω when both were metrically possible. This explains one peculiar fact: the present stem of ῥέξω *never* occurs verse-initially.⁶⁷

63 Indeed, ἔρξ' is preferred by West and van Thiel.

64 If the aorist εἶρξα originally had *spiritus asper* (cf. Att. aor. καθειρξα), it was lost due to psilosis in Ionic.

65 It is conceivable that root-initial aspiration was used to distinguish the contracted form ἔρξα 'shut in' from ἔρξα 'did'.

66 Meyer (1866, 11) claimed that ἔρξα as an aorist of ἐέργω would not have been frequent enough to cause avoidance of *ewergsa as the aorist of ἔρδω. Indeed, the only Homeric attestations of the aorist of ἐέργω (ἔργυμι) are 3pl. indicative ἔρξαν (*Od.* 14.111) and the participle form ἐρχθέντες (*Il.* 21.282). In one sense, Meyer's intuition was correct: as we shall see below, there probably never was a form *ἔερξα 'did' in epic Greek; the aorist ἔρεξα is an archaism, and it may have been retained precisely because replacing it with ἔερξα would have led to homonymy in certain contexts. Continuing to distinguish the variants ἔερξα 'shut in' and ἔρεξα 'did' (that were in use anyway) would have been useful when the object was a sacrificial animal: βούν ἔερξα (or ἔρξα) could mean either 'I sacrificed a cow' or 'I penned a cow'.

67 Forms of the aorist or future of ῥέξω do occur verse-initially in descriptions of sacrifice,

Moreover, it accounts for certain distributions after the penthemimeral caesura. There, the *present stem* of ἔρδω is used after syllables that are long by nature, while that of ῥέζω appears when position length is required. Compare:

οἴκαδ' ἀποστείχειν ἔρδειν θ' ἱεράς ἑκατόμβας (Od. 11.132, 23.279)
 ἔνθ' οἷν ἀρνειὸν ῥέζειν θήλυν τε μέλαιναν (Od. 10.527)

In the same metrical position, however, the aorist and future stems of ἔρδω are never used, irrespective of the preceding word-end. Thus, the future infinitive ῥέζειν is preferred over ἔρξειν in the traditional verse

ἀρνῶν πρωτογόνων ῥέζειν κλειτήν ἑκατόμβην (Il. 4.102, 120; 23.864, 873).⁶⁸

Similarly, the aorist ῥέξαι is preferred over ἔρξαι on two occasions, in spite of the fact that this caused an overlong syllable:

λαὸν ἐρυκακέειν ῥέξαι θ' ἱεράς ἑκατόμβας (Od. 3.144)
 αὐτίς ὕδωρ ἔλθης ῥέξης θ' ἱεράς ἑκατόμβας (Od. 4.478).

Finally, when the context made confusion with forms of ἐέργω / ἔργνυμι unlikely, sigmatic forms of ἔρδω were freely used. This is the case when the verb is modified by an indefinite correlative (e.g. ὅσα Κύκλωψ ἔρξε Od. 23.312 “the things that the Cyclops did”) or an adverb of manner (ὡς, ὅπως or similar: e.g. εἰ δέ κεν ὡς ἔρξης “if you will act thus” Il. 2.364; cf. ἀλλὰ μάλ' ᾧδ' ἔρξαι Od. 5.342; ἔρξον ὅπως ἐθέλεις 13.145, etc.).

In sum, the evidence just examined further strengthens the claim that ἔρδω replaced ῥέζω, rather than the other way around. It is plausible that ῥέζω is an archaism in all its tense-aspect stems. There were probably semantic reasons for retaining aorist and future stem forms of ῥέζω (that is, for not replacing them by forms of ἔρδω) when the object was a sacrificial animal.

4.7 Peculiar Prosody and Localization Properties of ἔρδω and ῥέζω

Let me finally comment on a few further distributional facts.

First, among augmented forms of ῥέζω without ρ-resyllabification, we find a strong predominance of the aorist ἔρεξα over the imperfect ἔρεζον. It does not, however, follow from this that the absence of ρ-resyllabification started in the

e.g. στεῖραν βοῦν, ἣ τις ἀρίστη / ῥέζειν ἐν μεγάροισι (Od. 10.523, 11.31), Ἥλιόιο βοῶν ἐλάσαντες ἀρίστας / ῥέξομεν ἀθανάτοισι (Od. 12.344).

68 Cf. also σοί τε κόμην κερῆειν ῥέζειν θ' ἱερὴν ἑκατόμβην (Il. 23.146).

aorist stem. The reason behind the distribution may be more simple: it follows from the Homeric tendency to use the augment more frequently with the aorist than with the imperfect, especially when the predicate has resultative or perfective semantics.⁶⁹

Secondly, as expected for a word that existed in the Ionic vernacular, ἔρδω may lack a digamma reflex. In most cases, this means that ἔρδω is used whenever the preceding word needs to undergo elision or epic correction, e.g. # ἀλλὰ μάλ' ὦδ' ἔρδειν (*Od.* 6.258), # ἀλλὰ μάλ' ὦδ' ἔρξαι (*Od.* 5.342), τελευτήσω τε καὶ ἔρξω (*Od.* 11.80). There are only two exceptions where we find hiatus before ἔρδω in the sixth foot: ἀποθύμια ἔρδοι # (*Il.* 14.261), φίλος εἶη καὶ φίλα ἔρδοι # (*Od.* 15.360). Normally, forms of ῥέζω were the default choice after short word-final thesis vowels, and also after word-final closed syllables or long vowels in the arsis. The all-but general absence of digamma reflexes in ἔρδω is remarkable, given that the cognate neuter noun ἔργον (234 attestations in Homer) observes digamma with nearly perfect consistency.⁷⁰ This suggests that the introduction of ἔρδω into Epic Greek postdates the loss of prevocalic word-initial digamma in Ionic.

Thirdly, forms of ἔρδω never have a syllabic augment: *ἔερξα does not occur as an aorist in Homer. On the other hand, the augmented aorist ἔρεξα is very frequent. It is plausible that the archaism ἔρεξα escaped replacement because the vernacular form *ἔερξα had already contracted into ἔρξα when forms of ἔρδω were introduced into Epic Greek.

Finally, after syllables that are long by nature and cannot be shortened by epic correction, ἔρδω is used as the Ionic default form. Compare ὦς ἔρξης (*Il.* 2.364), ὦς ἔρξασα (*Od.* 16.177, 18.197), ὦς περ Κύκλωψ ἔρξε (*Od.* 23.312), and εἶ ἔρξαντα (*Il.* 5.650). An exception occurs in non-present stem forms when the verb means 'sacrifice': in such cases, ῥέζω is used,⁷¹ compare σοὶ δ' αὖ ἐγὼ ῥέζω (...) τήν τοι ἐγὼ ῥέζω (*Il.* 10.92–94 and *Od.* 3.382–384), where the object of ῥέζω is a cow to be sacrificed, with ἐγὼν ἔρξαμι ... ὡς ἀγορεύεις (*Od.* 13.147), with a modifying adverbial clause. The danger of ambiguity existed only in the former case.

69 Cf. Willi (2018, 368–372).

70 There are only 9 instances of neglected digamma for ἔργον in Homer (excluding cases of *ephelesticon*): *Il.* 1.395, 4.470, 9.374, 11.703, 23.671, *Od.* 10.199, 11.474, 14.228, 17.313.

71 The reading Οἶνεὺς ἔρξ' at *Il.* 9.535 (van Thiel, West) instead of ῥέξ' (Allen) is in my view to be preferred because ῥέξ' would cause overlength.

5 A New Explanation for the Prosodic Behavior of ῥέζω

Thus far, I have argued that various forms of ῥέζω lacking ῥ-resyllabification, in particular ἔρξεα and the verse-final phrases μέρμερα ῥέζε and ἱερά ῥέζε, are traditional elements of epic language. I will now argue that the prosodic behavior of ῥέζω is best accounted for as an archaism of the epic language itself. How should we reconstruct the pre-Homeric stems of this verb? I propose that the aorist and present stems had a zero-grade root with a mono-consonantal onset *wr-: *ewrgsa, *mermera wrdze.

Given that a zero-grade formation *wrgje/o- existed in PIE (see section 2) and is reflected in Mycenaean *wo-ze*, it is attractive to hypothesize that the peculiar scansion in front of ῥέζω started in this zero-grade form. Although it is usually thought that *ʀ was vocalized early in Greek, there are various other indications suggesting that traces of *ʀ are preserved in Homeric scansions and metrical irregularities (Wathelet 1966).⁷² In order to account for these, I have argued in earlier work (van Beek 2013; 2022)⁷³ that *ʀ was retained longer in the epic tradition than in the vernaculars, and that its reflexes were also partly different. I will now first give a concise summary of the scenario presented there and the arguments supporting it, and then apply this scenario to ῥέζω as reflecting *wrdzō.

5.1 Different Reflexes of *ʀ in the Greek Dialects

Based on the evidence for each Greek dialect group, I have concluded that the regular vocalizations of *ʀ were as follows:

- Proto-Aeolic: *-ro-* (*-or-* is analogical);
- Arcadian: *-or-* (*-ro-* is analogical);
- the Cypriot evidence is ambiguous;
- Mycenaean: either *-or-*, or *ʀ* was preserved (*-ro-* is analogical);
- Cretan: *-ar-*, possibly with a conditioned reflex *-or-* after labials (*-ra-* is analogical);
- other West Greek dialects: the outcome is difficult to determine and varies per dialect, but some dialects (e.g. Syracusan) probably had a reflex *-ra-*.

The fact that Cretan dialects diverge from at least some other West Greek dialects is of considerable importance: it shows that Proto-West Greek retained *ʀ until the split into local varieties. Cretan is also peculiar in having *φηρω* (reflecting *werdze/o-) as against ῥέζω in various other Doric dialects. It is

⁷² Tichy (1981) does not consider the entire evidence.

⁷³ Note that van Beek (2022) is an updated and reworked edition of my dissertation (van Beek 2013).

attractive to ascribe ῥέζω in Doric areas to a vocalized pre-form **wardze/o-*, into which the *e*-vocalism of the (inherited) sigmatic aorist (and future) stem **wregs-* was introduced: had the aorist been **wergs-*, one would expect the present stem to have been levelled to **wardze/o-* (cf. section 3). Similarly, in a pre-stage of Cretan, after the inherited present stem had been vocalized as **wardze/o-* (or possibly **wordze/o-*), its vocalism was adapted to the widespread *e*-grade root allomorph **werg-*; the aberrant aorist stem **wregs-* was eliminated.

The outcome of **r* in Attic-Ionic, not mentioned in the above overview, is a highly complicated issue. It is often thought (e.g. Kuryłowicz 1968, 247; Rix 1992, 65) that *-ρα-* was the regular outcome of **r*, and that forms with *-αρ-* must somehow be analogical or otherwise secondary. Indeed, on the one hand we find the following pieces of evidence for *-ρα-*:

- ἔδρακον, aor. of δέρκομαι ‘look’;
- ἔπραθον, aor. of πέρθω ‘raze’;
- στρατός ‘army; camp’ (cf. Lesbian στρότος);⁷⁴
- θρασύς ‘bold’ (cf. PN Θερσίλοχος and Aeol. θερσέω for θαρσέω ‘persevere’);
- τράπεζα ‘table’ < **trpedia* (cf. Myc. *to-pe-za*).

The vocalization *-ρα-* cannot have been influenced by a cognate full grade form in any of these examples.

The same, however, is true of *-αρ-* in the following examples:

- καρτερός ‘fierce, strong’ (cf. Ion. comp. κρέσσω; Lesb. κρέτος ‘force’);
- ταρφέες ‘numerous, dense’ (cf. τρέφομαι ‘become thick; curdle’);
- χάρμη ‘battle rage, frenzy’ < **g^hym-eh₂*, from a PIE root **g^hrem-*.⁷⁵

Other compelling examples for *-αρ-* as a regular, undistorted reflex are τέταρτος, καρδιά, ἡμαρτον, and κατέδαρθον; these will be discussed below.

In sum, there is excellent evidence for both *-ρα-* and *-αρ-* as a regular reflex. As discussed in more detail elsewhere (van Beek 2022, 31–43), various attempts have been made to discern a more precise distribution between both reflexes, such as a conditioning by the place of the accent,⁷⁶ or by the number of following consonants,⁷⁷ but none of these hypotheses is supported by the entire evidence. Liquid metathesis has been invoked by various authors,⁷⁸ but this

74 For the etymological derivation of στρατός from **ster-* ‘subjugate’, see van Beek (2022, 276–277).

75 This root is reflected also in Avestan *gramant-* ‘angry’ and in Proto-Germanic **grimman-* ‘be furious’, caus. **gramjan-* ‘provoke’, and the agentive adjective **grama-* ‘angry’ (ON *gramr*, OHG *gram*). For this convincing etymology, see Janda (2014, 131–142) and also van Beek (2022, 432).

76 Cf. Schwyzler (1939, 342), Klingenschmitt (1974, 275).

77 E.g. Osthoff (1879, 144–145), Hoenigswald (1988).

78 Cf. Lejeune (1972, 196–197), Risch (1979, 98–99).

TABLE 1.10 Doublet forms with -ρα- (besides -αρ-) occur mainly in epic poetry

Homeric, epic: -ρα- (besides -αρ-)	Classical prose: -αρ-
κραδίη ~ καρδίη 'heart'	Ion. καρδίη, Att. καρδία
κρατερός ~ καρτερός 'fierce, powerful; firm'	Att. καρτερός 'firm'
τέτρατος ~ τέταρτος 'fourth'	Ion.-Att. τέταρτος
ἤμβροτον ~ ἤμαρτον 'missed the target'	Ion.-Att. ἤμαρτον
κατέδραθον 'fell asleep'	Att. κατέδαρθον

amounts to a resignation to the idea that there is no further conditioning for the metathesis. Concerning the Homeric evidence, Chantraine (1958, 23–24) suggests that there was originally a fluctuation between -αρ- and -ρα- in the spoken language that could be exploited by epic poets, but again, this does not explain why we find doublets in certain words, but not in others.

In earlier work (van Beek 2013; 2022), I have therefore proposed a different approach: to focus on lexemes for which doublets with -ρα- and -αρ- are attested, and to consider the distribution between these variant forms. The most important words with doublets are shown in Table 1.10 (above).

It appears that doublet forms with -ρα- are found exclusively in poetry, and especially in epic poetry. On the other hand, doublet forms with -αρ- like καρδίη and καρτερός appear both in poetry and prose. Thus, there seems to be a genre-related (or register-related) distribution.

As already noted, καρτερός cannot be an analogical form, and the same holds for the other forms with -αρ- cited above. The regular ordinal form τέταρτος deviates in its stem from the dative plural forms of the cardinal (Att. τέταρσι and poetic τέταρσι), and also from the first compound member τετρα-. Since the stem τεταρ- is not found elsewhere, τέταρτος is unlikely to be an analogical reshaping, while τέτρατος can easily be analogical, e.g. after τετρα- in compounds. As for καρδίη, its vocalization is often alleged to have been influenced by κῆρ 'heart', but this is implausible.⁷⁹ This means that κραδίη and καρδίη both display a regular reflex of *r̥. The same holds for κατέδραθον and κατέδαρθον, where no cognate full grade form is attested, and probably for ἤμβροτον and ἤμαρτον, where influence of the relic compound νημερτής on the vocalized zero grade is not evident at all.

79 See van Beek (2013, 158–159; 2022, 238–239).

5.2 *The Prolonged Retention of *r̥ in Epic Greek and Its Eventual Vocalization as ρα, ρο*

In view of these distributions, I have proposed that -αρ- was the regular outcome of *r̥ in Proto-Ionic, and that the reflex -ρα- stems from the epic tradition. In concrete terms, the proposal is as follows. Consider the traditional verse-final phrases Μοῖρα καρταίη (9× Hom.) and καρδίη καὶ θυμὸς ἀγῆνωρ (6× Hom.).⁸⁰ It is plausible that they were part of the tradition for a long time. We know that their pre-forms would have contained *r̥ at some point in the prehistory of Greek:

**^hmor̥ia k̥rtaiwā*
**k̥rdiā kai t^hūmos agānōr*

At this stage their scansion was regular.⁸¹ What may have happened to these phrases when *r̥ was vocalized as -αρ- in the vernacular? Of the principles of language change in the epic tradition as formulated by Milman Parry, the first runs as follows:

As the spoken language changes, the traditional diction of an oral poetry likewise changes, so long as there is no need of giving up any of the formulas.

Parry (1971, 331)

If we apply this principle to the above formulaic phrases, *^(h)mor̥ia k̥rtaiwā would have been left unchanged: with the vocalized Ionic form, a hypothetical καρταίη*, the formula would be unmetrical. The same holds for the formula with *k̥rdiā, where καρδίη would not fit the meter. The traditional forms with *r̥ were therefore retained. At a later stage, epic poets started to realize this artificially retained *r̥ as [rə]. This realization was subsequently phonologized, I submit, when the pronunciation of [rə] merged with that of /ra/. This leads us to the attested Homeric forms with -ρα-. In addition, I propose that the pronunciation of [rə] (the realization of retained *r̥) merged with /ro/ after labials:

80 Cf. also καρδίην καὶ θυμὸν ἰκάνει / ἴκανεν (5× Hom.), which is usually part of the line ἀλλὰ τὸδ' αἰνὸν ἄχος καρδίην καὶ θυμὸν ἰκάνει (4× Hom.).

81 I would like to emphasize that such phrases need not go back all the way to the pre-Mycenaean period, as is often assumed: they may in principle have existed in spoken Greek until the beginning of the Dark Ages, the 12th century. It cannot be determined with certainty whether Mycenaean had already vocalized *r̥, let alone what Proto-Ionic or Proto-West Greek looked like at that early date. For this point, see already Heubeck (1972, 76). As mentioned in section 5.1, I have argued that in West Greek dialects *r̥ was not vocalized until after the splitting up of Proto-West Greek.

this accounts for typical epic forms like βροτός ‘mortal’, ἤμβροτον ‘missed’ (cf. 1pl. subj. ἀβροτάξομεν), and several others.⁸²

Interestingly, this scenario has a fairly close parallel in Middle Indo-Aryan, where Sanskrit *r̥* was reflected in the vernaculars as either *a*, *i* or *u*,⁸³ but is realized to this day as [r̥] in most recitation traditions. Interestingly, in present-day Maharashtra (Marathi) Sanskrit recitation, /r̥/ is rendered as [ru], suggesting that an intermediate pronunciation [rə] was originally common to both renderings, [r̥] and [ru].⁸⁴ Thus, in traditional recitation, *r̥* at first retained its old pronunciation even after it had merged with short vowels in the vernaculars; later on, its realization changed to [rə] and then to [r̥] or [ru].

Returning to Epic Greek, another issue remains: under which conditions was **r̥* retained? Here, we must take into account that καρδίη appears not only in formulas, and it would be impossible to prove the formulaic status of all epic words with -ρα- or -ρο- reflecting **r̥*.⁸⁵ In my view, it is more plausible that *all* traditional elements of epic diction simply retained their traditional pronunciation (and, therewith, prosodic structure) and did *not* develop according to vernacular sound changes. In those cases where the vernacular form appears, we must assume that a lexical borrowing took place after the vernacular sound change. Thus, I suggest that we should question Parry’s principle of phonological change in Epic Greek.

In the case of **r̥*, vernacular forms with -αρ- such as καρδίη and καρτερός were borrowed into Epic Greek, on a one-by-one basis. They were imports into epic diction; their phonetic evolution had already taken place in everyday spoken language. In this way doublets such as καρδίη besides καρδιη originated. There are also Homeric words that exclusively appear with the reflex -αρ- < **r̥*, such as τάρφος and χάρμη; we must assume that these were not part of the oldest layers

82 For a detailed discussion, see chapter 7 of van Beek (2013; 2022). Epic words with **r̥* > ρο are normally viewed as Aeolic in origin. However, an Aeolic origin does not explain the peculiar metrical behavior of many of the forms with ρο < **r̥*: as Wathelet (1966) already noted, Attic correption is virtually absent in the Lesbian poets. Thus, an Aeolic origin of epic words with ρο < **r̥* is possible from a segmental perspective, but unattractive for other reasons. If we posit a conditioned reflex /ro/ after labials for those instances of **r̥* that were retained in epic Greek, this allows us to account for the *muta cum liquida* phenomenon that is widespread and structural in words like βροτός.

83 Cf. Berger (1955); von Hinüber (2001, 126–128).

84 See van Beek (2013, 173–174) and, with important modifications, van Beek (2022, 263–264). Prof. Sasha Lubotsky drew my attention to the realization of *r̥* as [ru] in Marāṭhī recitations of Sanskrit. For the same idea, see already Berger (1955, 20 n. 18).

85 Wathelet (1966) claimed that all structural cases of Attic correption in Homer are part of formulaic material. This is, in fact, the main problem with his scenario for the origin of this metrical licence. See the (partly justified) criticism by Haug (2002, 64–67).

of epic diction, but introduced from the vernacular only later. Conversely, for epic words that occur only with the reflex -ρα- (cf. ἔδρακον, ἔπραθον, κατέδραθον, θρασύς, στρατός, τράπεζα) or -ρο- (e.g. βροτός), I hypothesize that they were no longer current in Ionic during the late Dark Ages: this explains why we do not find a variant form with -αρ-. For several words this claim can be made plausible by considering their pattern of attestation.⁸⁶

If the artificial realization [rə] of *ʎ was phonologized relatively late in the tradition, this allows us to explain a number of metrical irregularities and prosodic peculiarities.

First of all, it explains the skewed distribution of tautosyllabic PL onsets in Homer. The *muta cum liquida* licence appears mainly (though not exclusively) in a closed set of lexemes, and a majority of the affected lexemes and formulaic phrases (such as Μοῖρα κραταίη) have a pre-form with *ʎ (see van Beek 2022, 252–254). The scenario described here offers new support to the idea that the license originated with the vocalization of *ʎ, as already surmised by Wathelet (1966); at the same time it allows us to circumvent certain problems connected with Wathelet's analysis.⁸⁷

Secondly, the problematic irregular scansion of the formulaic verse-final phrases ἀνδροτήτα καὶ ἦβην and Ἐνυαλίῳ Ἄνδρειφόντη (*anṛtāta, *Anṛk^{wh}ontāi) receives a natural explanation if their pre-forms retained *ʎ until not too long before Homer.⁸⁸ The expected reflexes are *ἀν(δ)ρατῆτα and *Ἄν(δ)ραφόντη, but these outcomes may have been reshaped under the influence of compounds in ἀνδρο- and the epithet Ἀργειφόντης, respectively. In fact, we may suspect that this reshaping took place in the post-Homeric (rhapsodic) tradition. If the original version of the *Iliad* still had /a.nra.tæ:ta/ and /a.nra.p^hon.tæ:i/, with tautosyllabic realization of word-internal -nr-, the phrases in which they occur were not even unmetrical, but simply instances of tautosyllabic consonant plus liquid, directly comparable to other cases of *muta cum liquida*.⁸⁹

86 This entails that στρατός, θρασύς and τράπεζα were borrowed from epic Greek into the Ionic and Attic vernaculars sometime between the vocalization of epic *ʎ and their first attestations. It is not easy to find decisive support for this, but the assumption is plausible enough by itself given that στρατός and θρασύς occur in martial contexts, and that τράπεζα occurs in traditional banqueting contexts. For further discussion, see van Beek (2013, 178–182; 2022, 272–280).

87 Elsewhere (van Beek 2013, 163–168; 2022, 249–252) I have discussed and evaluated the criticism directed at Wathelet by Haug (2002, 64–67).

88 Concerning Barnes (2011) on ἀνδροτήτα, see the criticism in van Beek (2013, 209–214).

89 Cf. van Beek (2013, 209–218; 2022, 321–330) and already Heubeck (1972, 76) for ἀνδροτήτα as a reshaping of *ἀνρατῆτα. Cf. also Wackernagel (1916, 172).—Recently the problem has been discussed by Bozzone (2022) and Höfler (2023), with whose conclusions I disagree (see van Beek (2022, 209–218) for my arguments).

Thirdly, we may explain the remarkable metrical properties of *κραδίη* in Homer that were first uncovered by Hoenigswald (1991, 10): forms of *κραδίη* are rarely used after words ending in a short vowel (in other words, the onset of *κραδίη* is not used to make position length). Hoenigswald (1991, 10 n. 28) remarked that this behavior “is only apparent if *r̥* [later > ρα] was still the equivalent, in the source formula, of a short vowel after the manner of *ἀνδροτήτα καὶ ἦβην*”,⁹⁰ and he concluded: “This necessitates adjustments in our view of the relative chronology of certain processes in the prehistory of Greek.” However, Hoenigswald never indicated which ‘processes’ he had in mind. The scenario under discussion would provide a fitting explanation.

Finally, and crucially, the above scenario explains why doublets with -αρ- / -ρα- display a genre distribution: words with -ρα- as a regular reflex are never found in prose texts, and forms like *ἔπραθον*, *ἔδρακον*, *κραδίη*, *κρατερός*, *κραταιός* are almost entirely limited to Epic Greek. In other words, assuming a prolonged retention of **r̥* in Epic Greek allows us to explain various prosodic irregularities and the different reflex -ρα- in one time.

The argumentation in the present subsection is necessarily condensed; for further discussion of these issues and of the entire evidence for -αρ- / -ρα- in Attic-Ionic, see van Beek (2022).

5.3 *Epic ῥέζω reflects *wrdzō Retained in the Epic Tradition*

In section 4, it has been shown that ῥέζω is an archaism of Epic Greek, but also that its prosodic behavior is inconsistent with that of the mechanically reconstructed pre-form, **wredze/o-*. I therefore propose that ῥέζω arose *within* the epic tradition from **wrdzō*, a retained archaism.⁹¹

By the scenario just sketched, however, **wrdzō* would develop into **wrodzō*. I assume that this form, or its predecessor **wrɔdzō*, was analogically reshaped as **wredzō*. For the introduction of the *e*-vowel, several models can be envisaged. One option would be to assume analogy with an aorist **wregs-*, if the root shape **wreg-* was inherited in that formation (cf. the Doric material presented in section 3.1). However, the prosodic behavior of ῥέζω, ἔρεξα in Homer (which is not limited to the present stem) speaks against the antiquity of forms with an onset **wre-* anywhere in the paradigm. A second option, which in my view is more plausible, is that the root vowel of **wrɔdzō*, **wrags-* (or **wrodzō*, **wrogs-*) was adapted to that of the vernacular form ἔρδω, ἔρξα, which had an identi-

90 The comment “[later > ρα]” is Hoenigswald’s.

91 It is plausible that **wrdzō* entered the epic tradition from Mycenaean. Strictly speaking however, this is difficult to prove: the form is an archaism inherited from PIE, and may have been retained also in other Greek dialects of the second millennium.

cal lexical meaning. This reshaping may have happened as part of the overall Ionicization process that also gave rise to other adapted forms. Compare what happened in the case of forms with diectasis: the traditional ending -άουσι (preserved in e.g. *ναιετάουσι* *Il.* 4.45, 17.172, etc.) was redone as -όωσι in most other verbs, so as to bring the form closer to the contracted vernacular ending, -ώσι. Finally, at this point the occurrence of ῥέζω in Doric may again enter the picture. While it would not be plausible to view a core element of epic diction like ῥέζω as a direct borrowing from Doric, the fact that ῥέζω was no doubt known to poets and their audiences as an existing Greek word may well have helped to make the reshaping of **wradzō* (or **wrodzō*) more acceptable.⁹²

If ῥέζω reflects **wradzō*, the scenario of section 5.2 enables us to explain the prosodic irregularities discussed in section 4. Consider the following points:

- A phrase like verse-final *[mer.me.ra. wɹd.dʒōn] developed into *[mer.me.ra. wred.dʒōn], with tautosyllabic scansion of the word-onset **wr-*. The vocalization of **ɹ* explains why the onset scansion of many forms of ῥέζω is different from that of words with an onset **wrV-*.
- Before the vocalization of epic **ɹ*, the first syllable of **wradzō* could be placed in the thesis following a word-final consonant, long vowel or diphthong. After vocalization, the ensuing onset **wr-* would automatically acquire a tautosyllabic realization, e.g. # ὄσος ἄνδρες ῥέξαντες (*Il.* 10.525). However, **wr-* could also secondarily be placed after word-final short vowels; in such cases it would cause position length, e.g. # τόσσα κακὰ ῥέζουσιν (*Il.* 4.32). This possibility is used in 15 out of 43 instances where the root syllable of ῥέζω occupies the thesis of a foot. There is no reason to consider this a particularly archaic feature.
- Forms of the aorist ἔρρεξα are rare (only 3× with -ρρ-, as opposed to forms of ἔρεξα 25×). Moreover, when ἔρρεξα is used, its root syllable is never placed in the thesis, which is the preferred placement of augmented forms of other verbs with etymological **wr-* and **sr-*.⁹³ Therefore, ἔρρεξα could be viewed as a secondary metrical variant of ἔρεξα before the trochaic caesura.

5.4 *The Shape of the Aorist Stem in Proto-Greek*

Returning to an issue of reconstruction: what can we deduce from the Greek evidence about the original shape of the aorist stem?

- The occurrence of ῥέζω in Doric (section 3.1) is most easily explained if the Proto-Greek shape of the aorist was **wreg-s-*.

92 For this idea, see also Cassio's contribution (this volume, chapter 4) on Hom. ἐσσεῖται.

93 Cf. ἐρραίσθη (*Il.* 16.339), ἐρρήξαντο (12.291), ἔρρηξεν δὲ (13.124), ἐρρίγησε (15.436, 466).

- On the other hand, there is no evidence in Homer for the existence of such a form early on in the tradition: the evidence for the placement of ῥέζω in the hexameter shows that the CC-initial behavior is secondary. Thus, the Homeric evidence points to an aorist *wrg-s- for the earliest stage that we can reconstruct. This could be explained as the result of an early leveling in some dialect: *wreg-s- or *werg-s- was influenced by the zero grade present stem *wrdze/o- < *urg-je/o-.
- Ionic ἔρδω, ἔρξα and Cretan φηρω, φερκσα may have arisen from a paradigm *wrdze/o-, *wergs-, but they can also be derived from the paradigm *wrdze/o-, *wrgs- reflected in Epic Greek (with the regular outcome -ar- < *r̥ in both dialects) if we assume that the root shape was influenced by cognate nominal forms like ἔργον. It would obviously be easier to introduce e-vocalism in the present stem if the aorist was already *werg-s-, but that reconstruction would be difficult to reconcile with the evidence for *wreg- in Doric.

A plausible scenario, then, runs as follows. The Proto-Greek aorist was *wreg-s-; this form was retained in most Doric dialects, where it also influenced the vocalism of the present stem, but it was replaced by *wrg-s- in at least one dialect that contributed to early epic (Mycenaean, mainland Aeolic or Proto-Ionic) by analogy with the present stem *urg-je/o-. This paradigm *wrdze/o-, *wrg-s- is reflected in the prosodic behavior of epic ῥέζω, ἔρεξα.

6 Conclusion

The following, chronologically ordered scenario accounts for all phonological, prosodic and semantic peculiarities of the verbs ῥέζω and ἔρδω in Homeric Greek:

- The oldest reconstructible stage of Epic Greek had a present *wrdze/o- and probably also an aorist *(e)wrgsa; the latter may be a reshaping of *éwregsa.
- When *r̥ vocalized in the relevant vernaculars, the older forms *wrdze/o- and *éwrgsa were retained in Epic Greek.
- The Ionic vernaculars underwent the development *wrg- > *war-, after which the verbal paradigm was influenced (perhaps by the noun *wérgon) to become *werde/o-, *éwergsa.
- The vocalization of epic *r̥ yielded a paradigm *wrodze/o-, *éwrogsa. At this point, both tautosyllabic and heterosyllabic scansion of the onset *wr- were available. With the introduction of e-vocalism and the loss of digamma, the attested forms ῥέζω, ῥέξα came into being.
- The verb ἔρδω was imported from the Ionic vernacular into Epic Greek after the loss of initial prevocalic digamma. It did not replace ῥέζω when this

would have unnecessarily introduced hiatus; moreover, its aorist and future stems ἔρξα, ἔρξω were avoided when the meaning was ‘sacrifice’.

In addition, the following conclusions concerning the phonology of Greek deserve to be highlighted:

- ῥέζω is an important additional piece of evidence in support of my hypothesis that *ʃ was retained longer in the epic tradition than in the vernaculars (van Beek 2013; 2022).
- Contrary to statements found in various handbooks, the difference between *wr- and *sr- is reflected in the prosodic behavior of individual roots and lexemes in Homer. With very few exceptions, ῥ- < *wr- is always resyllabified after short vowels, both in internal and external sandhi. On the other hand, it is normal for ῥ- < *sr- not to resyllabify in external sandhi, but in internal sandhi resyllabification may or may not occur.
- The abnormal prosodic behavior of ῥέζω in Attic drama is best understood if poets borrowed the lexeme—together with its salient prosodic feature—from Epic Greek.

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