Trends in the Prosodic Evolution of the Greek Choliamb

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1. *Introduction*

1845 was a remarkable year in the study of the Greek choliamb: apparently quite independently, Theobald Fix[1] and Heinrich Ahrens[2] discovered that Babrius observed two prosodic rules governing the phonological structure of the final spondee that had escaped the notice of even Carl Lachmann in the preface to his edition of Babrius (also of 1845). Fix formulated these rules as follows: "Chez lui en effet, la voix se repose et s'étend, pour ainsi dire, presque toujour sur des syllabes *longues de nature*, et toujour ces syllabes sont renfermées dans le même mot."[3] In other words, both the penultimate and the final syllables of the Babrian choliamb should contain long vowels or diphthongs: $C_0\breve{V}C_1$ syllables are strongly avoided in both, as are $C_0\breve{V}$ syllables in the ultimate.[4]

Fix, however, like Lachmann, was unaware of another rule formulated by Ahrens that has always attracted more attention: "Altera [*scil.* regula], quae rarissime violatur, haec est, ut paenultima versus syllaba accentum habeat."[5] The rule of the accented penult was rediscovered (independently, as he tells us) fifteen years later by Tycho Mommsen.[6] Otto Crusius largely ignored the question of the

[1] T. Fix, *RevPhil* 1 (1845) 46–81, reviewing J. Boissonade, *Babrii Fabulae CXXIII* (Paris 1814), *Babrii Fabulae CXXI* (Paris 1844), and F. Dubner, *Animadversiones criticae de Babrii* Μυθιάμβοις (Paris 1844).

[2] H. Ahrens, *De crasi et aphaeresi cum corollario emendationum Babrianarum* (Stolberg 1845). The Babriana are omitted from the reprint in C. Haberlin, ed., *Kleine Schriften von Heinrich Ludolph Ahrens* (Hannover 1891).

[3] *Supra* n.1: 62.

[4] C_0 indicates zero or any number of consonants; C_1, at least one consonant. $\bar{V}$ denotes diphthongs as well as long vowels. The hyphen represents syllable boundary, and # the end of a word.

[5] *Supra* n.2: 31.

[6] T. Mommsen, "Accentcholiamben und prosodische choliamben," *Philologus* 16 (1860) 721–27. Mommsen remarks, "Wie diese wahrnehmung Lachmann, der die feinsten beobachtungen über den babrianischen versbau in seiner vorrede machte, hat entgehen können, ist mir unbegreiflich. Aber wir haben so viele herrliche verdienste des unvergesslichen mannes mit dank anzuerkennen, dass wir auch dafür danken müssen, dass er nicht alle vorweggenommen hat" (727).

phonological structure of the penultimate syllable,[7] fastening upon the penultimate accent rule as evidence for his claim that Babrius was a Roman.[8] He explained the accent rule as follows: "Itaque choliambi Babriani singularem illam proprietatem ex imitatione Latinorum ortam esse persuasum habeo."[9] In regard to the rule favoring final syllables long by nature he presented some comparative statistics, limited to the frequencies of only $C_0\breve{V}$ syllables, to illustrate his belief that Babrius' practice was fundamentally different from that of Hipponax and later writers of scazons, and as evidence for dating.[10]

The next major advance in the study of the Babrian choliamb was made by Hanssen,[11] who attempted the first systematic linguistic treatment of all three rules within the wider context of the evolution of accent regulation in Greek verse. He pointed out that Babrius also avoids the circumflex accent in the penultimate position, and suggested that this avoidance might be the motive for the final syllable rule (*infra*, Section 6). Reacting to Crusius, Julius Werner presented comparative statistics from other choliambic poets for the final syllable and accent rules, but neglected the penultimate rule.[12] Unfortunately, Werner classified syllables with the diphthongs *οι#* and *αι#* along with $C_0\breve{V}C_1$ syllables and not $C_0\bar{V}C_0$. He argued, "Babrius haud novam quandam legem invenisse videtur, sed secutus esse constantem Graecorum morem, ita tamen, ut fere omnes syllabas in brevem exeuntes vocalem expulisse videatur."[13] Similarly in regard to the accent rule, "Videmus igitur iterum Babrium non novam excogitasse normam, sed iam antea haud ignotam maxima cum severitate observasse."[14] In fact Werner believed that both these rules were operative for Herodas, if less strongly. Witkowski[15] reached similar conclusions,

[7] He relegates it to a footnote in the Prolegomena to his Teubner edition (Leipzig 1897) xxxv.

[8] "Romanum Babrium fuisse demonstratur," claims Crusius in "De Babrii aetate," *LeipzStud* 2 (1879) 125–248, esp. 245. Ben Edwin Perry, in the Loeb *Babrius and Phaedrus* (London/Cambridge [Mass.] 1965) lii–liv, still follows Crusius.

[9] *Supra* n.8: 166.

[10] *Supra* n.8: 193–95, "Itaque haec quoque metri Babriani proprietas ut in tempus quam novissimum eum referamus diserte suadet."

[11] F. Hanssen, "Ein musikalisches Accentgesetz in der quantitirenden Poesie der Griechen," *RhM* 38 (1883) 222–44.

[12] J. Werner, "Quaestiones Babrianae," *BerlStud* 14 (1892).

[13] *Supra* n.12: 16.

[14] *Supra* n.12: 17.

[15] S. Witkowski, "Observationes metricae ad Herodam," *Analecta graeco-latina philologis Vindobonae* (Cracow 1893) 1–13. I am grateful to Professor John Vaio for calling my attention to E. Hohmann, *De indole atque auctoritate epimythiorum Babrianorum* (Diss.Koenigsberg 1907) 44–47, where the final light syllables reported by the manuscripts are listed and discussed, and to J. Pelckmann, *Versus choliambi apud Graecos et Romanos historia* (Diss.Greifswald 1908).

claiming that the practice of Herodas was an intermediate stage in the evolution of the final syllable and accent rules before they became as strictly observed as they are in Babrius. In regard to the accent rule, Martin explicitly proposed a gradual evolution, claiming to discern a second, higher level of strictness already in the "deuxième livre" of Hipponax, and still greater regularization in Herodas.[16]

The claims of Werner, Witkowski, and Martin, however, were disputed by Cunningham in his edition of Herodas: "this is certainly wrong in the case of the final syllable and very dubious in that of the final accent."[17] Sidney Allen reached a similar conclusion in 1967, and cited Cunningham with approval in 1973.[18] Allen also agreed with Hanssen that the final syllable rule is an automatic consequence of the avoidance of penultimate properispomenon accentuation (*infra*, Section 6).

2. *Unanswered questions*

The major questions concerning prosodic changes in the choliamb left unanswered by previous work are the following: (1) Is there a diachronic trend toward increasingly higher frequencies of syllables containing long vowels or diphthongs in the penultimate position of the choliamb? (2) Is there a diachronic trend toward increasingly higher frequencies of syllables containing a long vowel or diphthong in the final position of the choliamb? (3) How does Babrius' preference for paroxytone over properispomenon accentuation in the penultimate position interact with his preference for syllables long by nature in the final position? (3a) Can the former be explained as an automatic consequence of the latter? (3b) Conversely, can the latter be explained as a mere reflex of the former? (3c) Are both factors necessary, even if they are correlated? (4) Are closed syllables containing a short vowel ($C_0\breve{V}C_1$) avoided in the final position, or only open syllables containing a short vowel ($C_0\breve{V}$), or both? (5) Is there a diachronic trend toward increasingly higher frequencies of paroxytone accentuation in the penultimate position?

To answer these questions, I have collected statistics from Hipponax,[19] Callimachus,[20] Herodas,[21] and Babrius.[22] These authors have

[16] E. Martin, *Essai sur les rythmes de la chanson grecque antique* (Paris 1953) 185.
[17] I. Cunningham, *Herodas, Mimiambi* (Oxford 1971) 220.
[18] W. S. Allen, "Correlation of Tone and Stress in Ancient Greek," *To Honor Roman Jakobson* I (The Hague 1967) 46–62; *Accent and Rhythm* (Cambridge 1973) 267.
[19] M. L. West, *Iambi et Elegi Graeci* I (Oxford 1972).
[20] R. Pfeiffer, *Callimachus* I (Oxford 1949).
[21] Cunningham (*supra* n.17).
[22] Perry (*supra* n.8).

been chosen because of the extent of their surviving corpora; our knowledge of other choliambic poets such as Ananius, Aeschrion, Parmeno, and even Phoenix is far more limited, so that a wider range of purely statistical variation (greater standard deviations) could obscure their positions in any trend. Proper names have been excluded, as well as fragmentary words and doubtful restorations, in the interest of consistency in the cross-classification of syllable structure and accent location and type. Furthermore, final disyllabic words have been counted separately from longer words in final position. This procedure has been adopted because elementary considerations of Greek inflectional morphology indicate that there could be a correlation between syllable structure and word length: *e.g.* final syllables long by nature are more common in the declensions of *a*- and *o*-stems than in the declension of consonant stems, while consonant stems—unlike *a*- and *o*-stems—are frequently a syllable longer in oblique cases. I have left out of consideration the infrequent cases of final monosyllables, *e.g.* Herod. 5.69 *τὴν νηῦν*, 6.93 *εἰπεῖν μοι*.

3. *The penultimate syllable of the choliamb*

Although it has never been suggested before, there is a clear diachronic trend toward increasing preference for syllables long by nature in the penultimate position, both in disyllables and in longer words. Table 1 presents the percentage rates of $C_0\bar{V}C_0$ syllables for each word class and the resulting overall rates for the four authors. N indicates the total number of words (disyllables or longer words). Thus in Hipponax, 56.54% of the 62 final disyllables have penultimate syllables long by nature.

	Proportion of Penultimate $C_0\bar{V}C_0$				
	Disyllables	N	Longer Words	N	Total
Hipponax	56.54%	62	60.00%	70	58.33%
Callimachus	59.57%	94	72.03%	118	65.51%
Herodas	71.84%	419	79.82%	174	74.57%
Babrius	90.53%	739	97.25%	859	93.55%
	$\bar{\chi}^2 = 117.229$		$\bar{\chi}^2 = 168.75$		
	$c_1 = .569$		$c_1 = .491$		
	$c_2 = .342$		$c_2 = .530$		

Table 1. Trend toward higher frequencies of syllables long by nature in the penultimate position of the choliamb

The *chi*-square figures and the coefficients c_1 and c_2 are statistics that permit us to test the significance of these trends, taking into

consideration the size of the corpora and the magnitudes of difference between the authors.[23] These results are highly significant: there is only a minuscule chance that either of the observed trends is a random occurrence. The actual overall diachronic trend is further confirmed by the position of Phoenix, who, with an overall rate of 65.17% (standard deviation = 3.69%) of penultimate syllables long by nature, clearly belongs within the Hellenistic period. It is interesting, though not of much evidential value, that Aeschrion also fits nicely into his period, since he has an overall rate of 64.29% (although his standard deviation is 12.81%).

A peculiarity of the choliamb of Herodas should be noted: in Herodas there are more final disyllables than longer words, whereas in the three other authors in Table 1 the ratios of disyllables to longer words fall into the narrow range between 0.797 and 0.886.

4. *The final syllable of the choliamb*

There is also evidence for a similar trend in the treatment of the final syllable of the choliamb, although it is not so pronounced as for the penultimate. Even the figures that Cunningham reports[24] show a slight chronological increase in the percentages of final syllables long by nature. This weak trend would have emerged more clearly if the authors had been displayed with Hipponax at the top of the list as in Table 2.

	Final $C_0\bar{V}C_0$
Hipponax	63.6%
Callimachus	64.1%
Herodas	65.0%

Table 2. Cunningham's data on final syllables long by nature

In Table 3, I present my figures for the final syllable in the same format as as in Table 1. A number of comments on Table 3 are in order. First of all, my figures for the overall rates are quite close to those reported by Cunningham, despite the different texts on which the counts are based and my restrictive criteria for material included. Secondly, in both the first column (disyllables) and the second (longer words), Herodas has a smaller percentage of $C_0\bar{V}C_0$ syllables than Callimachus. Nevertheless, he has over 2.5% more overall. This anomaly is only apparent: Herodas has, as we have

[23] For the mathematics and the tables giving the significance levels, see J. Fleiss, *Statistical Methods for Rates and Proportions* (New York 1973) 100ff and 205ff.

[24] *Supra* n.17: 219. His "long" means syllables long by nature.

	Final $C_0\bar{V}C_0$				
	Disyllables	N	Longer Words	N	Total
Hipponax	67.74%	62	52.86%	70	59.85%
Callimachus	71.28%	94	54.24%	118	61.79%
Herodas	70.64%	419	52.29%	218	64.36%
Babrius	96.21%	739	98.28%	874	97.33%
					$\bar{\chi}^2 = 394.881$
					$c_1 = .536$
					$c_2 = .417$

Table 3. Trend toward higher frequencies of final syllables long by nature at the end of the choliamb

noted, proportionally more disyllables than the rest, and—as is clear from the table and as might be anticipated on morphological considerations—disyllables have a higher rate of final $C_0\bar{V}C_0$ syllables than longer words. As a result, when the two are combined Herodas has a higher rate of final syllables long by nature than Callimachus. Nevertheless, the deviations in columns 1 and 2 mean that Herodas does not make the same sort of increase in final $C_0\bar{V}C_0$ syllables that he does in penultimate $C_0\bar{V}C_0$. It would be quite safe to conclude, however, that the two Hellenistic authors, averaged together, represent an intermediate stage between Hipponax and Babrius. This status is nicely confirmed by the position of Phoenix, who, with an overall rate of 71.91% for finals long by nature, is closer to Callimachus and Herodas than to either Hipponax or Babrius.

5. *The avoidance of circumflex accentuation in the penultimate position and its relation to the preference for final syllables long by nature*

One of the rules governing the type and location of the accent in Greek concerns the final trochee: if the penultimate syllable is accented and contains a long vowel or diphthong, it receives a circumflex if the final vowel is short (whether or not the final vowel occurs in a closed syllable). The only exceptions arise when the final syllable was originally an enclitic (*e.g.* τοίνυν, ἥτις, ὥστε, εἴτε, *etc.*), or is a result of crasis (*e.g.* τοὔργον). Another rule of Greek accentuation states that when the final syllable contains a long vowel or a diphthong other than οι# and αι# (not in the optative or locative terminations), only an acute accent, not the circumflex, can stand on the penult. These two rules insure that there will be a strong correlation between the quantity of the final vowel and the accentuation of the penultimate syllable. This correlation will be all the stronger if, as is the case of final words in Babrius' choliambs, oxytone words are

excluded and penultimate syllables overwhelmingly contain a long vowel or diphthong. Hanssen clearly saw that it might be possible either to reduce the paroxytone rule to a reflex of the final $C_0\bar{V}C_0$ rule, or the final $C_0\bar{V}C_0$ rule to a reflex of the paroxytone rule. Noting the occurrence of words such as φόρτον (7.2), ἄλλος (106.26), τοίννν (33.12), and ὥσπερ (57.8) at the end of the Babrian choliamb, Hanssen opted for the latter: "Es liegt also die Möglichkeit vor, dass die Länge der Endsilbe durch den Acut auf der vorletzten Silbe und nicht der Acut auf der vorletzten Silbe durch die Länge der Endsilbe herbeigeführt ist."[25] Sidney Allen concurs.[26] Yet neither scholar attempted a proof. In fact, both rules are necessary; neither can be completely reduced to an automatic, linguistically enforced consequence of the other. We can demonstrate the independent reality of both rules by controlling carefully for syllable structure when we test Babrius' treatment of accent type, and by controlling for accent type when we test his treatment of syllable structure.

First let us test the independent reality of the paroxytone rule. It will suffice to establish this independence for disyllables, considering first only the most favored type of syllable structure in disyllabic words, *i.e.*, with long vowels or diphthongs in each syllable. Properispomena may occur in this class if the final syllable is αι# or οι# not in the optative or locative, *e.g.* κεῖσθαι, ταῦροι. Table 4 presents the proportions of properispomena, ŜS, and paroxytones, ŚS (relative to their sum), in Babrius and Herodas.

	Accent Type	
	ŜS	ŚS
Babrius	1.09%	98.91%
Herodas	17.39%	82.61%
	odds ratio = 0.052	
	$\chi^2 = 82.327$	

Table 4. Constraint against properispomenon accentuation, controlling for syllable structure (both syllables long by nature)

Since we are comparing only words of identical syllabic structures, any difference in the rates of properispomenon accentuation cannot be due to that identical structure, but must be independently motivated. In fact the odds ratio of 0.052 means that in Babrius the odds

[25] *Supra* n.11: 204.
[26] "Correlation" (*supra* n.18) 58.

for a properispomenon in this word class have been reduced to about five one-hundredths of the odds in Herodas: Babrius constrains properispomena over nineteen times as strongly as Herodas. The *chi*-square value is highly significant, in fact so large that it is not reported in standard tables. Random variation must be ruled out.

By positing finer distinctions within the category of syllables long by nature, one could interpret the result of the preceding test in a different way: it could be that that Babrius avoids final *αι#* and *οι#* not in the optative or locative, with the automatic consequence that the rate of properispomena decreases. Thus he would not be directly avoiding circumflex accentuation in the penultimate position. A further test, however, shows that Babrius must be directly avoiding such circumflexes. Consider the less-favored word structure, containing a final closed syllable with a short vowel ($C_0\breve{V}C_1$). Clearly, properispomena must be common in this class, since only compounds and instances of crasis can be paroxytone. The data are presented in Table 5.

	Accent Type	
	ŝs	śs
Babrius	71.43%	28.58%
Herodas	96.00%	4.00%
	odds ratio = 0.104	
	$\chi^2 = 8.93$	

Table 5. Constraint against properispomenon accentuation, controlling for syllable structure (first syllable long by nature, final syllable $C_0\breve{V}C_1$)

The results are quite remarkable. Even given the relative rarity of the paroxytone type in the language, Babrius has increased the odds in its favor nearly ten times over what we observe in Herodas. Again the value of the *chi*-square shows that the difference is statistically significant. We must conclude that the rule favoring acute over circumflex accentuation in the penultimate syllable of the Babrian choliamb is real and independent of the treatment of the final syllable.

It is also possible to show that the rule favoring final syllables long by nature in Babrius is real and independent of the paroxytone rule. Statistically significant differences between Babrius and Herodas do not occur in the rate of final $C_0\bar{V}C_0$ in cases of (a) paroxytone disyllables with long vowels or diphthongs under the acute, and (b) properispomenon disyllables; but there is a statistically significant difference in the case of paroxytone disyllables with penults long by position (types *φόρτον, πίστιν, πάντα, etc.*). The data are presented in Table 6.

	Structure of the Final Syllable	
	$-C_0\bar{V}C_0\#$	$-C_0\breve{V}C_0\#$
Babrius	92.29%	5.71%
Herodas	72.45%	27.55%
	odds ratio = 0.159	
	$\chi^2 = 12.934$	

Table 6. Constraint against final syllables not long by nature, controlling for accent type (paroxytone, penult long by position)

The odds ratio shows that words of the type *φόρτον* and *πάντα* are constrained over six times as strongly in Babrius as compared to Herodas. The *chi*-square shows that the difference is statistically significant: there is less than one chance in a hundred that it could arise by chance. Since the words considered have identical accentuation (and penultimate syllable structures) in the two authors, the difference in the rates of final syllables long by nature cannot be a result of the identical accentuation (or of identical structure of the penult). We must conclude that there is a real and independent rule favoring final syllables long by nature, above and beyond the effect of the paroxytone rule on the rate of long vowels and diphthongs in final syllables.

6. *Final* $C_0\breve{V}C_1$ *and* $C_0\breve{V}$ *syllables*

Final open syllables with a short vowel ($C_0\breve{V}$) are clearly subject to constraint. To see this, let us compare their rates in Babrius and Herodas. It is necessary only to consider disyllables. To maintain control over correlated factors we shall investigate only paroxytone disyllables with the first syllable long by position (type *πίστιν*, *πάντα*). The actual occurrence frequencies are given in Table 7.

	Structure of the Final Syllable	
	$-C_0\breve{V}\#$	$-C_0\bar{V}C_0\#$ or $-C_0\breve{V}C_1\#$
Babrius	0	70
Herodas	8	90
	p = .0118 (calculated by the hypergeometric distribution)	

Table 7. Avoidance of final short vowels

Herodas has only 8 cases (8.16%) of words with a short final vowel after an accented syllable long by position (comparable to the rate of 10.53% in Callimachus). Nevertheless, even this very low rate has

been reduced to zero in Babrius. The figure p = .0118 means that the zero-incidence in Babrius is statistically significant: there is only about one chance in eighty-five that it could be a random accident. Clearly, even though final short vowels are not frequent at the end of the choliamb in Herodas, Babrius still disfavors them. The non-occurrence of words with a short final vowel following an accented $C_0\breve{V}C_1$ syllable reported in Table 7 for Babrius depends on the rejection of ἄρνα at 23.4 as an interpolation. This textual decision does not, however, affect the foregoing statistical argument. Even if ἄρνα is retained, there is still a probability of only .051 that Babrius would have fewer final short vowels in this word type than Herodas.

The question of final short vowels in properispomena is more complex, since the rate of -$\breve{V}$ in these words in Babrius (27.8%) is greater than the rate in Herodas (24.8%); yet in Babrius ᾰ constitutes a larger proportion of these -$\breve{V}$ than in Herodas. Eberhard[27] and Crusius[28] claimed that the only short vowel permitted by Babrius at the end of the choliamb is ᾰ. The Athos manuscript, however, reads σπεῦδε at 1.5 (correction to σπεύσῃς is supported by its position in a series of aorist commands and prohibitions), ἐσθῆτι at 65.8, and ἐπαιρᾶτο at 106.4; *cf.* Perry's conjectural ἐπειρῶντο at 142.2. If we were to accept all these cases of final short vowels in properispomena, the rate of ᾰ in Babrius would be 77.33%. By contrast, the rate in Herodas is only 41.18%, although ᾰ remains the single most frequent short vowel in this word type at the end of the choliamb. The lower frequency of 73.33% in Babrius would still be significantly greater than in Herodas ($\chi^2 = 4.30$).

Crusius believed that Babrius permitted ᾰ at the end of the choliamb because it was the longest of all the short vowels and thus the most nearly satisfactory substitute for a long one. This phonetic assumption is supported by modern instrumental phonetic research, which has demonstrated that inherent vowel duration increases with articulatory aperture: open vowels are longer than closed vowels.[29] Even so, it may be unnecessary to assume that Babrius is making fine discriminations of duration within the category of final, light, open syllables. It is a general principle of verse composition that less frequent items are easier to avoid than more frequent items.[30] Since the evidence of Herodas shows that ᾰ is the most frequent of all final

[27] A. Eberhard, *Observationes Babrianae* (Berlin 1865) 8.

[28] Crusius (*supra* n.7) xlii. I am grateful to Professor John Vaio for calling my attention to the peculiarity of ᾰ in Babrius.

[29] See I. Lehiste, *Suprasegmentals* (Cambridge [Mass.] 1970) 18.

[30] A. M. Devine and L. D. Stephens, *Language and Metre* (Chico [Cal.] 1984) 93ff.

short vowels in properispomena at the end of the choliamb, the proportionally greater decrease in the rates of the other, individually less frequent, vowels would follow from the compositional principle, without requiring us to assume any additional phonetic preference for ᾰ.

We can also demonstrate that final closed syllables containing short vowels ($C_0\breve{V}C_1$) are avoided in this same class of words. The rate of $-C_0\breve{V}C_1\#$ in Herodas is 19.39%, but it has been reduced to only 5.71% in Babrius. A test of this difference by the normal approximation gives $z = 2.54$. This result means that there is only about one chance in two hundred that the observed reduction could be merely a random effect. We conclude that all final syllables containing a short vowel, whether closed by a consonant or not, are avoided at the end of the choliamb in Babrius. This avoidance holds true independently of the paroxytone accent rule.

7. *The absence of any trend toward increasing paroxytone accentuation*

In order to keep the presentation of the data within reasonable limits I shall consider only disyllables. These are sufficiently numerous to allow detection of any overall trends. The data are presented in Table 8, first for words having long vowels or diphthongs in both syllables (types λώβη, κεῖται, ψωρή, τιμῆς); next, words with short vowels in the penult and long vowels or diphthongs in the final (types βόσκω, πολλῇ, πικρή); then, words with long vowels or diphthongs in the penult and short vowels in the final (types στῆσον, οἷδε, τοίννν, οὔτε, λιμόν, ἱρά); and last, words with short vowels in both syllables (types φόρτον, πέντε, δεσμός, πολλά). These four classes are followed by the overall rates of accent type and location for all disyllables.

The zero-incidence of perispomena in Babrius depends on the acceptance of several emendations and deletions. It cannot, however, be coincidental that the most frequent candidates for final perispomena in the Athos manuscript are just those words that have well-attested variant forms with paroxytone accentuation—namely, the first and second person plural pronouns, ἡμεῖς, ὑμεῖς, *etc.* Accordingly editors, such as Rutherford, Crusius, and Perry, change the accentuation to the unemphatic types ἧμεις, ὗμεις, *etc.* Allen[31] objects to such alteration as begging the metrical question, although he does not explain why forms with alternative paroxytone accentuation have a special status not accorded to invariable perispomena. Ahrens[32]

[31] *Accent* (*supra* n.18) 59.
[32] *Supra* n.2: 30.

$C_0\bar{V}C_0$-$C_0\bar{V}C_0$#

	ś S	ŝ S	S ŝ	S ś	N
Hipponax	66.67%	0%	22.22%	11.11%	27
Callimachus	66.67%	12.82%	17.95%	2.56%	39
Herodas	63.03%	13.27%	15.17%	8.53%	211
Babrius	98.91%	1.09%	0%	0%	645

$C_0\check{V}C_1$-$C_0\bar{V}C_0$#

	ś S	S ŝ	S ś	N
Hipponax	80.00%	13.33%	6.67%	15
Callimachus	82.14%	7.14%	10.71%	28
Herodas	83.53%	11.76%	4.71%	85
Babrius	100.00%	0%	0%	66

$C_0\bar{V}C_0$-$C_0\check{V}C_0$#

	ś S	ŝ S	S ś	N
Hipponax	0%	88.89%	11.11%	9
Callimachus	0%	82.35%	17.65%	17
Herodas	3.33%	81.11%	15.55%	90
Babrius	25.00%	75.00%	0%	24

$C_0\check{V}C_1$-$C_0\check{V}C_0$#

	ś S	S ś	N
Hipponax	72.73%	27.27%	11
Callimachus	80.00%	20.00%	10
Herodas	81.82%	18.18%	33
Babrius	100.00%	0%	4

All Disyllables

	ś S	ŝ S	S ŝ	S ś	N
Hipponax	61.29%	12.90%	12.90%	12.90%	62
Callimachus	60.64%	20.21%	9.57%	9.57%	94
Herodas	55.85%	24.11%	10.02%	10.02%	419
Babrius	96.62%	3.38%	0%	0%	739

Table 8. Rates of accent type and location cross-classified by syllable structure and overall

believed that there were 17 instances of final perispomena in Babrius (including τᾶω as well). Even if we were to accept all 17 cases without alteration, the rate of final perispomena in Babrius would still be only 2.3%, a significantly lower rate than the 10.02% in Herodas ($z = 5.76$). Thus, whatever individual textual decisions one may make, it is clear that Babrius avoids circumflex accentuation on the final syl-

lable of the choliamb, just as he avoids the acute on the final and the circumflex on the penultimate syllable.

No coherent trend emerges from the overall totals at the end of the table. Callimachus and Herodas have slightly lower rates of disyllables with oxytone accentuation than Hipponax, but the difference is not statistically significant. The Hellenistic poets, however, when averaged together do show a higher rate of properispomena than Hipponax ($z = 2.04$). Turning to the breakdown according to syllable structure, we find that exactly the same observations hold true for the (everywhere most frequent) type with long vowels or diphthongs in both syllables—as would be expected. The three other types, in contrast, show very weak trends favoring paroxytone accentuation. The trend toward decreasing rates of properispomena in the $C_0\bar{V}C_0$-$C_0\breve{V}C_0$# type is probably caused by random fluctuation in small samples. Even if paroxytones in this category had the same percentage rates in the lost work of Hipponax and Callimachus that they do in Herodas, we would still not expect any to turn up in the meager remains we do have: it must be kept in mind that a change of a single actual occurrence in samples so small as those for the last three word types in Hipponax and Callimachus can produce a difference of nearly 4% to 11%. Consequently, there is no very convincing evidence for a trend toward increasing frequency of paroxytone accentuation in the penultimate position of the choliamb. While this is a negative result, it is not without importance: it tells us that the accent rule did not follow an evolutionary development comparable to that of the syllable structure rules, but appears to have been a more abrupt innovation. The clear evolutionary trend in favor of syllables long by nature bears no essential relation to the treatment of the accent; poets can be aware of the phonological structure of syllables without being similarly sensitive to the accent.

While the paroxytonesis of Babrius appears to be an abrupt transition from the practice of Hipponax, Callimachus, and Herodas, it is paralleled by the paroxytonesis in other meters, such as the pentameter of the elegiac couplet, miuric hexameters, miuric paroemiacs, the iambic trimeter, *etc.* In some cases we can observe a gradual evolution of this phenomenon.[33] For example, already in the pentameter of Anyte the rate of final oxytones and perispomena has been reduced to only 4.3%, a statistically significant decline not only from the rate of 21.7% in Solon ($\chi^2 = 7.24$), but also from the 16.8% in Callimachus ($\chi^2 = 5.02$). In Antipater of Sidon the rate

[33] Hanssen (*supra* n.11) 222–44.

decreases to 2.4% and falls further to 1.0% in Philip of Thessalonica. Thus, if our evidence for the choliamb were as chronologically continuous as it is for the elegiac couplet, we might expect to observe a similar evolution beginning in or after the second century B.C. In view of the extent of paroxytonesis in later Greek verse, it seems hardly necessary to assume that Babrius was following the Latin model in which stress on the penultimate syllable of the choliamb was phonologically automatic. Furthermore, since paroxytonesis of the pentameter obviously has nothing to do with marking the ictus, or strong element, of the verse with the linguistic accent, it seems unwarranted to postulate a reversal of the iambic movement of the choliamb in its last two elements in order to create a motive for its paroxytonesis.

The paroxytonesis of all meters suggests that poets came to prefer a falling pitch on the final syllable of the verse[34] and that this pattern of accentuation was maintained—as an artificiality in some cases—even after the transition to a stress accent. While granting that such a preference for a falling pitch could be explained as a "mechanical regularization of originally fortuitous tendencies,"[35] Allen proposes as an additional motive "an increase in the strength of [his hypothesized non-accentual] linguistic stress, when as in the majority of cases, it was associated with the *svarita* tone, of which the essential characteristic was its falling nature."[36] Since the *svarita* tone comprises both the post-acute fall and the pitch fall within the circumflex syllable, this hypothesis requires that the circumflex on the final syllable be equipollent to the acute in Babrius' versification. Yet we have seen that such is not the case: Babrius avoids final perispomena (only 2.3% at a maximum), as he does final oxytones (0%) and properispomena (3.38%).[37]

Just as regularization of the final accent in the choliamb is paralleled in the pentameter and other meters, so the increasing preference for syllables long by nature can be compared, if less exactly, to an increasing preference for $C_0\bar{V}C_0$ syllables before the diaeresis in

[34] J. Wackernagel, *IGForsch* 43 (1925) Anz. 48; Allen, "Correlation" (*supra* n.18) 57ff.

[35] *Accent* (*supra* n.18) 268.

[36] "Correlation" (*supra* n.18) 60.

[37] Apart from Babrius, where the passages are often short, it is difficult to assess to what extent final perispomena were fully acceptable alternatives to paroxytones, and to what extent they were avoided—even if still preferable to final oxytones. *P.Lond.Lit.* 2206 16–20 attests a preference for final perispomena as opposed to paroxytones in these miuric hexameters: 4 perispomena, 1 oxytone, 0 paroxytones. This phenomenon may reflect a stress accent.

the pentameter. The average rate of $C_0\breve{V}C_1$ before the diaeresis for Theocritus, Callimachus, Asclepiades, Posidippus, Hermesianax, Anyte, and Leonidas is 14.4%, but the rate declines to 8.6% in Dioscorides, 6.9% in Antipater of Sidon, 2.1% in Antipater of Thessalonica, and 0% in Philip.[38] Strong preference for syllables long by nature is found in several meters of the second or third centuries A.D. and after, such as paroxytonetic miuric hexameters (*e.g. P.Oxy.* XV 1795), paroxytonetic miuric paroemiacs (*e.g. P.Oxy.* I 3), and the paroxytonetic catalectic dactylic tetrameters of the epigram at the end of Marcus Aurelius' Εἰς ἑαυτόν (*Anth.Pal.* 15.23).[39] Note also the more widely known preferences of Oppian, Triphiodorus, and Nonnus in their hexameters.

Thus, neither the accentual nor the syllabic aspects of the prosodic evolution of the choliamb are wholly peculiar to that meter. While it would be premature to propose a general explanation at this point, it does seem reasonable to assume that these changes in versification are not simply artificialities, but reflect the poets' response to ongoing changes in the linguistic system of ancient Greek prosody, ultimately connected to the development of a stress accent and the loss of phonologically distinctive vowel quantity and syllable weight.

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[38] M. L. West, *Greek Metre* (Oxford 1982) 158, 181.

[39] See P. Maas, "Ὑδάτη," *Philologus* 68 (1909) 445f, "Das Epigram auf Marcus Εἰς ἑαυτόν," *Hermes* 48 (1913) 295–99, and *PhilWoch* 42 (1922) 581f; *cf.* T. Higham, "Teliambi," *Greek Poetry and Life* (Oxford 1936) 299–324.