

# The Colometric Structure of Homeric Hexameter

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## 1. *Introduction*

More than fifty years have passed since the publication of Hermann Fränkel's seminal article, "Der homerische und der kallimachische Hexameter," yet there is still no end in sight to the debate over the colometric structure of the verse.<sup>1</sup> Among the questions that have yet to be resolved are these: How many metrical caesurae does the hexameter have: is it divided into two cola by one principle caesura at the mid-line, or into four cola by the mid-line caesura and two 'lesser caesurae'? Are these 'lesser caesurae' structural elements of the verse or merely reflections of natural word placement or other metrical characteristics—that is, did the poet feel a positive impulse for word-end in metrical positions other than the verse-end and the mid-line caesura? If so, does that mean that the poet perceived the hexameter as a composite of four smaller segments, or that the verse had taken form originally from a merging of four such segments? Why did the poets avoid word-end in certain positions under certain circumstances, in compliance with the prohibitions of Meyer's Law and Hermann's Bridge? (There is also, of course, the prior question whether Meyer's Law applies to the Homeric hexameter at all, or only to later hexameter.) Is the relative absence of word-end in certain positions (bridge) the result of a desire for word-end in others (caesurae)? If so, might this help us to distinguish between the lesser metrical caesurae and other positions where the high incidence of word-end is simply coincidental?

These questions have been discussed from such a variety of perspectives, theoretical and practical, that it would be impossible to comment upon all of them here. I leave to others the more theoretical questions, why a caesura is a caesura and what exactly is bad about a bridge violation.<sup>2</sup> I must also omit discussion of recent inter-

<sup>1</sup> *GöttNachr* 2 (1926 [hereafter 'Fränkel']) 197–229; a revised version appears in *Wege und Formen frühgriechischen Denkens* (Munich 1955) 100–56.

<sup>2</sup> For a comprehensive review of the rhythmic and phonological theories pertaining to caesurae and bridges see W. S. ALLEN, *Accent and Rhythm* (Cambridge 1973 [hereafter

esting attempts to demonstrate the derivation and development of the hexameter from Indo-European metrical forms.<sup>3</sup> What remains after these exclusions is an analysis of the colometric structure underlying the realized hexameter verse, based upon earlier statistical studies of such phenomena as frequent word-end and restrictions upon word-end, as well as the preference of the various metrical shapes for one or another position in the line. I will evaluate several current hypotheses, focusing in detail upon the 'four-colon' theory first proposed by Fränkel and on the alternative 'two-colon' theory defended vigorously by those who accept G. S. Kirk's refutation of Fränkel.<sup>4</sup> Many of my observations here are based upon the metrical studies of Eugene O'Neill Jr, documenting the patterns of word placement in the hexameter, and H. N. Porter, an adherent of a slightly variant four-colon theory, emphasizing the tendency of words to conform to metrical cola.<sup>5</sup>

'Allen'), and A. M. Devine and L. D. Stephens, *Language and Meter* (= *American Classical Studies* 12 [Chico, Calif., 1984]).

<sup>3</sup> For example, B. Peabody, *The Winged Word* (Albany 1975) 30–65, has suggested that similarities between the caesural structure of the hexameter and those found in certain Vedic and Gathic metrical forms demonstrate the Indo-European origin of the hexameter. He would derive the hexameter from stanzaic construction of two earlier line forms, each of which already possessed its caesura. M. L. West, "Greek Poetry 2000–700 B.C.," *CQ* n.s. 23 (1973) 179–92, saw the origin of the hexameter in the combination of a hemiepes and a paroemiac, without addressing the question of caesurae within these two forms. G. Nagy, *Comparative Studies in Greek and Indic Meter* (Cambridge [Mass.] 1974), suggested that the internal dactylic expansion of a pherecratean was the generating principle behind the hexameter. This approach was developed further by A. Bowie, *The Poetic Dialect of Sappho and Alcaeus* (New York 1981), assuming a four-colon hexameter; on the basis of similarities of diction and ostensible colometric similarities between hexameter and Aeolic verse, Bowie deduced the existence in an early phase of the tradition (*i.e.*, in the 'oral period') of a widespread poetic vernacular including both Ionic epic and Aeolic lyric. For a strong statement of the agnostic position, advanced in rebuttal of West and, by extension, of Nagy, see A. Hoekstra, "Epic Verse and the Hexameter," in *Epic Verse Before Homer: Three Studies* (Amsterdam 1981) 33–53.

<sup>4</sup> G. S. KIRK, "Studies in Some Technical Aspects of Homeric Style," *YCS* 20 (1966) 75–152 [hereafter 'Kirk']. Kirk has once again taken up the subject of colometry in *The Iliad: A Commentary* I (Cambridge 1985 [hereafter 'Commentary']) 17–35. Kirk's views on the colometry of the hexameter have remained largely consistent in the two decades separating the publication of these works. The greatest difference lies in the attention that Kirk now gives to the possibility of a three-colon verse, which he terms the "rising three-folder," to be discussed below.

<sup>5</sup> E. G. O'NEILL JR, "The Localization of Metrical Word Types in the Greek Hexameter," *YCS* 8 (1942) 105–78; H. N. PORTER, "The Early Greek Hexameter," *YCS* 12 (1951) 3–63 (cited hereafter by authors' names). I have also had the advantage of J. T. McDONOUGH JR, *The Structural Metrics of the Iliad* (diss. Columbia 1966 [hereafter 'McDonough']), a computer-based analysis of word placement based on the entire *Iliad* (rather than the 1,000-line sample used by O'Neill and Porter) in which every word is indexed by metrical type and verse position in tables that allow one to consult

I may state at the outset that, despite the controversy generated by the four-colon theory and the remaining questions and uncertainties, it is my conclusion that the important points of the four-colon theory have not been refuted. While the four-colon model may yet require revision and refinement, critics of Fränkel and Porter have failed to produce an alternative two-colon model that accounts satisfactorily either for the positions in the verse where word-end is avoided, or for its real or apparent lesser caesurae.<sup>6</sup>

## 2. *Development of the Four-Colon Theory*

In the nineteenth century Hermann and Meyer demonstrated that word-end is avoided in certain positions of the hexameter under certain conditions.<sup>7</sup> Maas defines Meyer's First Law as follows: "Words

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the actual lines in the text. Because this dissertation is not as widely known or available as the two articles, I refer to it only when I have used it to obtain information that could not have been derived from O'Neill or Porter. Throughout this paper I use the standard numerical system for describing the metrical schema of hexameter:

$\underline{1}$     $\underline{1\frac{1}{2}}$     $\underline{2}$     $\underline{3}$     $\underline{3\frac{1}{2}}$     $\underline{4}$     $\underline{5}$     $\underline{5\frac{1}{2}}$     $\underline{6}$     $\underline{7}$     $\underline{7\frac{1}{2}}$     $\underline{8}$     $\underline{9}$     $\underline{9\frac{1}{2}}$     $\underline{10}$     $\underline{11}$     $\underline{12}$

<sup>6</sup> Recent opinion has largely rejected Fränkel in favor of Kirk, whose views have achieved the status of a prevailing orthodoxy. Allen 118, for example, indicates his position by referring the reader to Kirk for discussion of four-colon lines. R. S. P. BEEKES, "The Structure of the Greek Hexameter," *Glotta* 50 (1972) 1–10 [hereafter 'Beekes'], esp. 1, states that "Fränkel's theory was modified by Porter . . . and refuted by Kirk." M. L. WEST, *Greek Metre* (Oxford 1982 [hereafter 'West']) 35–39, does not even mention the four-colon theory in his treatment of the hexameter. According to R. Janko, *Homer, Hesiod and the Hymns* (Cambridge 1982) 36, "Porter's theory of a quadripartite hexameter has been refuted by Kirk and Beekes, who argues persuasively that the 'rules' for the hexameter are due to the desire to avoid the pattern  $-\underline{\underline{v}}-\underline{\underline{v}}$ , with a premature closing cadence." He is referring to Beekes' proposal (9), "Perhaps to avoid the suggestion of verse end long final syllable is avoided at 8 and 10." It is ironic that a similar explanation, first offered by Porter (13: "The adonic cadence, which has a 'dying fall', was appropriate to the end of the line and to the end of the first half line, the second colon, but any suspicion of it was avoided in the first and third cola of the line"), was refuted in the case of the third colon by Kirk's observation (78f) that an adonius does not fit between the mid-line caesura and position  $7\frac{1}{2}$  or 8: "Even with the avoided word-end at  $7\frac{1}{2}$  (without accompanying word-end at 8 or 7), the closest that we can get to an adonic sequence is  $-\underline{\underline{v}}-\underline{\underline{v}}$  (with a masculine caesura preceding) or  $-\underline{\underline{v}}-\underline{\underline{v}}$  (with a feminine)." Further, while Beekes' suggestion might account for infrequency of long final syllables in position 10, it does not explain the frequency of short final syllables in  $9\frac{1}{2}$ , which could also suggest the adonic cadence. This objection could be eliminated by demonstrating that the final anceps of the hexameter was felt to be long. In that case, however, the argument can hardly be used, as do Porter and Beekes (9), to explain hypothetical avoidance of word-end in  $3\frac{1}{2}$ . That anceps in position 12 was not felt necessarily to be long is suggested by the mobility between positions 12 and  $5\frac{1}{2}$  of numerous words and formulaic expressions with short final syllables.

<sup>7</sup> G. HERMANN, *Orphica* (Leipzig 1805 [hereafter 'Hermann'], repr. Hildesheim 1971), esp. 692: "sed in magna illa caesurarum varietate, quam habet versus heroicus,

that begin before the third element [*i.e.*, before the beginning of the second foot] must end *neither* (a) with the fourth element [the end of the second foot] nor (b) with the 'second trochee' [*i.e.*, position 3½]." Likewise, Hermann's Bridge is defined as: "A word ends after the 'fourth trochee' [position 7½] only about once in a thousand lines."<sup>8</sup> Stated in this way, these prohibitions seem arbitrary and inexplicable. Fränkel hoped to explain these phenomena by demonstrating a connection between the positions in the verse in which word-end is avoided (bridges) and those positions where word-end and sense-division are most frequent (caesurae). Such an explanation, he felt, had the advantage of efficiency in that it incorporated both caesurae and bridges within a coherent structural framework of the hexameter.

It was Fränkel's hypothesis that the hexameter is composed of four metrical segments corresponding to sense-units. These segments, defined by word-end in three caesural areas, are the four cola of the verse. In each of the caesural areas, indicated by A, B, and C in the diagram below, there are at least two positions that may serve as caesurae. Either the cola must be articulated by caesurae, or the possible caesurae must be bridged unambiguously by a word of at least six morae.<sup>9</sup> As a result word-end will be restricted in the positions marked *x* unless there is a clear A3 or A4 caesura, restricted in *y* unless there is a clear B caesura, restricted in *z* unless there is a clear C caesura:<sup>10</sup>

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una praecipue incisio est, quae quia vim et robur numerorum debilitat, a melioribus poetis improbata est. Eam dico, quae habet trochaicum in pede quarto." Cf. W. MEYER, "Zur Geschichte des griechischen und des lateinischen Hexameters," *Sitz Munich* 6 (1884) 980: "Der Trochaeus und der Daktylus im zweiten Fusse darf nicht durch den Schluss eines drei- oder mehrsilbigen, im ersten Fusse beginnenden Wortes gebildet werden." The reason for this, Meyer suggested (983), is that long words ending in the second foot would have an undesirable weakening effect upon the mid-line caesura: "Mir scheint der trochäische oder gar der daktylische Wortschluss im 2. Fusse gemieden zu sein, weil der Schluss eines längeren Wortes schwerer in das Ohr fällt als ein selbständiges trochäisches oder daktylisches Wort . . . weil also durch den schweren Wortabschnitt im 2. Fusse die gesetzmaessige Caesur im 3. Fusse von vornherein ihrer Wirkung beraubt schien." Note that both studies concerned Alexandrian, rather than Homeric, hexameter. West (38 n.19) questions the relevance of Meyer's Law to the Homeric hexameter: "Meyer was concerned with Alexandrian poets, and the rule is of limited validity for Homer, with an exception every twenty or thirty lines."

<sup>8</sup> P. Maas, *Greek Metre*, tr. H. Lloyd-Jones (Oxford 1962) 63, 87.

<sup>9</sup> One mora is the equivalent of a short syllable. Thus, a long syllable equals two morae, a dactylic foot four.

<sup>10</sup> According to Fränkel's system of colometry, if there is not word-end in either of the B caesurae, that area must be bridged by a word beginning before B1 and extending to C1—that is, beginning before 5 and ending at 7. A word bridging the C caesura

	A		B		C					
Caesurae:	1	2	3	4	1	2	1	2		
Word-end avoided:	-				-				-	
	x	x			y		z			

While accepting Fränkel's theory in principle, Porter suggested two amendments to bring the metrical shapes of the four cola into better balance with one another. He rejected positions 1 and 1½ as alternate A caesurae, and substituted position 9 for 7 as the alternate to position 8 for the C caesura. The first of these amendments has been generally accepted;<sup>11</sup> the second, however, has received severe criticism because of the relative *infrequency* of word-end and sense-pause in position 9 and should, therefore, be treated as erroneous.<sup>12</sup> In this paper I will use the term 'A caesura' to indicate positions 2 and 3, 'B caesura' to indicate positions 5 and 5½, and 'C caesura' to indicate positions 7 and 8.

I do not mean to gloss over the several points on which Fränkel and Porter diverge; their agreement upon two basic principles is more relevant to my purpose here. First, both accept an ideal structure of four cola underlying the hexameter. That structure can best be described as a hybrid of their two colometric models:

	A		B		C					
	2	3	5	5½	7	8				
	-				-				-	

must begin before 7 and extend beyond 8. The A caesura functions somewhat differently. If there is no caesura in A3 or A4, those positions must be bridged by a word beginning at either A1 or (more frequently) A2, extending at least to B1: "Auffallend ist nun die Bestimmung, dass die Zaesur, wenn sie hinter dem 1. Trochaeus eintritt, stets ein langes Wort hinter sich hat, das bis zur naechsten Zaesur reicht. Man koennte sie daraus zurueckfuehren, dass der Einschnitt, als der exzentrischste und seltenste, an sich am wenigsten ins Ohr faellt, und zum Ausgleich umso reiner und kraeftiger gebildet wuerde. Deshalb also wuerde jede weitere Wortfuge bis zur naechsten Zaesur vermieden" (201). It is difficult to understand Fränkel's inclusion of positions 1 and 1½ as A caesurae. They do not fit into the same scheme as positions 2 and 3: if they functioned adequately as caesurae it would not be necessary to restrict word-end in 3½ and 4 after them.

<sup>11</sup> Beekes (4) makes this point in his discussion of the first half of the hexameter: "At all other points [*i.e.*, except 3½ and 4] important syntactical boundaries are allowed at all places, 2 and 3 being more frequent . . . . The fact that they do occur at all these places led Fränkel to assume his A1/A2/A3/A4. In this way all supposed caesurae except P/T (mid-line caesura) explain themselves as accidental."

<sup>12</sup> Cf. Kirk 81f, whose work was duplicated by W. Ingalls, "The Structure of the Homeric Hexameter, A Review," *Phoenix* 24 (1970) 1-12, esp. 5f. Porter (14) objected to the brevity of the third colon in Fränkel's schema: "In concentrating on caesurae and neglecting the cola which they delimit he advocates a division whereby the third colon of the line is in many cases reduced to a single iambus."



	A	B	C
<i>Iliad</i>	90.3%	98.9%	86.9%
<i>Odyssey</i>	89.5%	98.7%	86.2%

Percentage of lines with word-end in 'caesural' areas

The regularity of word-end in B strongly suggests that it is a structural element of the verse, by which I mean that the poet felt instinctively that every verse should fall into two parts, divided by the mid-line caesura. This is less certain, however, for the other two positions. The number of word-ends in position 2 and 3 (A) and in 7 and 8 (C) is generally equal to or greater than the number of word-ends in 5 and 5½; but since there are more lines with word-end in both 2 and 3 or in both 7 and 8, there are also more lines with word-end in neither.<sup>15</sup> This difference naturally leads us to question whether the poet felt the A and C areas of the verse to be caesural: that is, whether he felt the same impulse for word-end in one or the other of these positions that he felt at the mid-line caesura. Could the high frequency of word-end in them be 'casual', resulting from the natural scatter of metrical shapes throughout the hexameter?

The first step in answering this question is to determine whether the frequency of word-end in A and C, like that in B, is sufficient to indicate that it is different in nature from word-end in other adjacent positions throughout the verse. On the basis of Porter's statistics for the *Iliad* and *Odyssey* we can compare the frequency percentages of word-end in adjacent positions in the line (see the table at the top of the next page).<sup>16</sup>

While the frequency of word-end is greatest in the areas designated as caesural (A, B, and C), there are other areas of the verse where word-end is almost as frequent as in A and C: for example, 8 or 9 (proposed by Porter as the C caesura), 1½ or 2, 9½ or 10. For this reason it is unlikely that one could demonstrate on the basis of word-end frequencies alone that the areas of the verse designated A and C caesurae are different in nature from other places in the verse where word-end is frequent.

<sup>15</sup> In Porter's sample the number of word-end in each position is as follows:

<i>Iliad</i>	(2) 523	(3) 618	(5) 499	(5½) 608	(7) 545	(8) 628
<i>Odyssey</i>	(2) 548	(3) 602	(5) 529	(5½) 577	(7) 517	(8) 625

<sup>16</sup> These statistics are derived by adding the number of lines with word-end in the adjacent positions and subtracting the number of monosyllables in the second. *E.g.* from Porter's Tables VIII and IX: in the *Iliad* 387 lines have word-end in position 1 and 303 in position 1½. There are 124 monosyllables in 1½ (word-end in both 1 and 1½): 387 + 303 - 124 = 566, or 56.6% of the verses in the sample with word-end in position 1 or 1½ or both.

	Positions	<i>Iliad</i>	<i>Odyssey</i>		Positions	<i>Iliad</i>	<i>Odyssey</i>
	1 or 1½:	56.6	59.6		7 or 7½:	47.9	53.4
	1½ or 2:	70.7	73.3	(C) <sup>17</sup>	7 or 8:	88.4	88.8
(A)	2 or 3:	90.3	89.5		7½ or 8:	63.7	63.6
	3 or 3½:	69.6	67.1		8 or 9:	79.4	78.8
	3½ or 4:	32.7	34.9		9 or 9½:	64.2	69.7
	4 or 5:	65.1	72.9		9½ or 10:	73.0	76.1
(B)	5 or 5½:	98.9	98.7		10 or 11:	37.9	34.3
	5½ or 6:	73.7	71.5		11 or 12:	100.0	100.0
	6 or 7:	59.4	66.2				

### (b) *Sense Divisions*

Because epic verse is a regular construction of words arranged according to metrical principles, we may think of it not only in its realized form but also as its metrical abstraction, 'the dactylic hexameter'. This metrical abstraction is based upon the comparison of many realized examples, from which we can deduce principles that hold true for all or most hexameter verses, or for the verse of a particular period, or for that of a single poet. For example, from O'Neill's study we learn that word-end is most frequent in certain metrical positions. In reading a passage from epic, we soon realize that phrases and sentences also begin and end in these same positions with astonishing regularity. From these observations we may form a schema of the verse, of the sort found above (p.129), with vertical lines indicating positions where both word-end and phrase-end are frequent, dividing the verse into four metrical segments or cola.<sup>18</sup> Because of their high degree of correspondences, it seems natural, therefore, to assume that a connection of some sort exists between the metrical segments of the hexameter, defined by regular word-end, and the phrasing of ideas within the verse.

<sup>17</sup> Unlike the other examples in this table, 7 and 8 are not adjacent positions. I have included them here both because Fränkel believed that they shared a caesural function and because the infrequency of word-end in position 7½ (whatever its cause) results in their being adjacent *de facto*. That they are not adjacent does inject a certain complexity into the question, as it suggests that the causes of, or principles behind, the A and C caesurae are probably different.

<sup>18</sup> This, in outline, is Fränkel's theory, according to which caesurae are the points of articulation ("Sinnesfugen") between units of meaning within the verse. They may be either "schwäche" or "starke" depending on the quality of the divisions between units of meaning, which Fränkel termed "Sinneseinschnitte" (111). All strong divisions of meaning (as marked by punctuation) occur in one of the caesural positions. When there is not a strong division (punctuation), we regularly find a weaker one (simple word-end) in its place. Hence each colon is a semantic unit; a regular hexameter is composed of four of them, divided by three caesurae.



The supposition that a connection exists between phrasing and meter was the basis for Fränkel's four-colon analysis of the hexameter.<sup>19</sup> While this hypothesis (though not the four-colon theory) has been accepted by both Fränkel's critics and his defenders, there is still difference of opinion on whether the colon is basically a unit of sense or a metrical structure. Fränkel argues that the colon is indeed a unit of sense and is not therefore necessarily bound to a particular metrical shape.<sup>20</sup> He suggests that under certain circumstances a caesura can be moved ("verschoben") by a long word or a group of words that overruns the usual caesural position. For example in *Iliad* 1.36 the long word Ἀπόλλωνι beginning the verse pushes the A caesura one syllable beyond its usual position and creates a colon with the metrical shape - - - √. The important point here is that while the metrical shapes of the cola may be altered, the cola are still expressed.

While Porter accepted (with amendment) Fränkel's division of the hexameter into four cola, he preferred to think of the colon as a metrical unit rather than a unit of meaning.<sup>21</sup> While these metrical units naturally have a normative effect upon the arrangement of thoughts within the verse, we should not expect phrasing to conform to the metrical cola in all verses.<sup>22</sup> Those cases in which phrasing and colometric structure do not coincide provide a sort of "counterpoint against expectation" (Porter 25 n.49) similar, perhaps, to the effect of syncopation in music. Examples of such "counterpoint" are found in closely-bound phrases bridging major structural divisions of the verse, such as the mid-line caesura in *Il.* 1.3, πολλὰς δ' ἰφθίμους : ψυχὰς, or 1.7, Ἀτρεΐδης τε ἄναξ : ἀνδρῶν, and occasionally bridging the line-end, as in 1.283f, ὄς μέγα πᾶσιν / ἔρκος Ἀχαιοῖσιν πέλεται, or 575f, οὐδέ τι δαιτὸς / ἐσθλῆς ἔσσεται ἦδος.

<sup>19</sup> "Diese Arbeit will zeigen, dass und wie im griechischen Hexameter die Sinnegliederung der Rede und die rhythmische Folge der langen und kurzen Silben aufeinander abgestimmt sind" (103).

<sup>20</sup> On the question of Fränkel's definition of the colon, cf. Kirk 83: "Fränkel's answer is plain, that it is in essence a unit of meaning"; and *Commentary* 19, "Fränkel had argued, not exactly that the cola are units of meaning, but that the word-breaks which limit them are 'Sinneseinschnitte'." The latter description complicates the matter unduly. What, other than a unit of meaning, can be bounded by a break in meaning?

<sup>21</sup> According to Porter (16f) the cola of the hexameter, like those of lyric poetry, are not fixed in form and are not necessarily expressed by word-end at all: "Positively, the colon is an expected sequence of syllables produced by a brief rhythmical impulse."

<sup>22</sup> "In the hexameter the colon is frequently a short unit of meaning but need not be" (Porter 17); "although the colon is not in every case, if read with normal prose phrasing, a unit of meaning, it is, nevertheless, normatively and essentially a unit of meaning . . ." (22).

From similar observations Kirk reached a different conclusion. Although in agreement with Fränkel that cola must be sense-units, Kirk argued that the numerous verses in which sense-units do not correspond to the four-colon model of the hexameter suggest that that model itself is incorrect: the phrasing of the verse falls more naturally into two segments divided by the mid-line caesura, or into three segments divided by the mid-line caesura and the bucolic diaeresis. As a demonstration of this principle, Kirk analyzed twenty-four lines of the *Iliad* (17.426–49) to determine the degree of congruence between word-end, sense-units, and four-colon structure: 19 of the 24 verses have word-division corresponding to the four cola (with position 7 as alternate C caesura), yet only two of these (8%) have “four rhythmical cola which can reasonably be regarded as corresponding exactly with sense-divisions.”<sup>23</sup> But, Kirk argued, if the hexameter were really composed of four cola, one would expect phrases within it to correspond to those cola to a high degree.<sup>24</sup> Having concluded that Fränkel’s theory was flawed in this way, Kirk proposed several “non-colometric” explanations for the high incidence of word-end at Fränkel’s A and C caesurae. Before evaluating these specific suggestions, however, we should be aware of two problems in Kirk’s general approach.

First, as Kirk stressed, his small sample cannot be taken as a statistically valid representation of epic verse in general. McDonough obtained a much different result by sampling the first 500 lines of the *Iliad*. Among these McDonough found 175 (35%) in which sense-units correspond to all four of Porter’s metrical cola.<sup>25</sup> McDonough’s findings would seem generally to support Porter’s hypothesis that the four-colon metrical structure exerts a normative influence upon the sense-units. In his sample, phrases appear to correspond to four rhythmic cola “to a high degree,” and this may have some as yet

<sup>23</sup> Kirk 89. In fairness to Fränkel and especially to Porter, who did not consider caesurae to be bound inextricably to sense-division, it is worth noting that 23 of the 25 lines have word-end in position 2 or 3 (A), all have word-end in 5 or 5½ (B), and 19 have word-end in position 8 or 7 (C).

<sup>24</sup> Kirk 90: “But the four colon theory implies a high degree of correspondence between sense and rhythm; for, even on Porter’s view that the cola are in origin and essence rhythmical cola, their predominant normative effect is an inevitable consequence.”

<sup>25</sup> That is, using position 9 as the alternate C caesura (McDonough 47–49). Lines with this alternate caesura account for only 39 of the 175, and it is certain that the number of lines with sense/colon correspondence would have been greater if McDonough had used position 7 as the alternate C caesura. Even leaving any alternate C caesura out of consideration, we are left with 136 lines (27%) having sense/colon correspondence and thus a great discrepancy between Kirk’s and McDonough’s figures.

undetermined relevance to the colometric structure of the verse. All would agree that this approach is quite subjective, and since a large statistical sample is not available, it is probably best to follow Porter in relying upon punctuation as the most accurate gauge of the relative frequency of sense-division throughout the verse. According to West's table of sense-pauses in the hexameter (36), approximately 21% have punctuation in positions 5 and 5½, 13% in positions 2 and 3, and 14% in positions 7 and 8. With the exception of the verse-end, no other position has any significant amount of punctuation. Clearly the limitation of sense-division to these positions is not casual. If the poet felt these three areas of the verse, but not others, to be appropriate for major sense-division, this would seem to indicate that the high frequencies of word-end in them also are not casual and that, in this respect at least, these positions have characteristics of caesurae.

Second, Kirk's analysis of the 24-line passage is based upon the premise that the colometric structure of the verse is defined, not simply by word-end in caesural positions, but by the metrical shapes of sense-units. This goes well beyond the contention that there should be "a high degree of correspondence between sense and rhythm," since, according to Kirk, the colometric structure of any verse is actually determined by the metrical shape of the sense-units it contains. If there is disagreement between sense-units and metrical cola, precedence is given to sense. Accordingly Kirk considers a verse with two major sense-units to be a two-colon verse, even if it contains word-ends corresponding to four metrical cola.

It is easy to sympathize with Kirk's position, since common sense suggests that in performance any audible pauses in the flow of the poetry would have corresponded to phrasing rather than to an abstract metrical pattern. It need not be assumed, however, that a metrical caesura must create a pause (or any other effect) in speech.<sup>26</sup> In this case Kirk's observation that phrasing and meter do not always coincide raises an interesting question of the relation between the two, but his present interpretation of the colon results from a somewhat eccentric application of metrical practice. While it has been shown that sense-units generally conform to metrical cola, sense-units themselves have not normally been used to *determine* colo-

<sup>26</sup> Cf. Allen 115: "Those who assume some performance correlate of the metrical caesura are generally careful to state that they do not necessarily mean 'pause' . . . and other writers seek to show that pause *cannot* be implied. For if it were, the syllable preceding the caesura should be subject to the same principles as apply at the end of the line."

metric structure either in the hexameter or in other verse.<sup>27</sup> When in lyric poetry, for example, we find a phrase (or even a word) divided over the verse-end we do not, on this basis, posit an alternative colometric structure for the verse in question; nor do we reinterpret the colometric structure of the hexameter in those instances in which closely bound phrases are divided between verses.

Kirk's belief in the priority of sense-units is even more explicit in his recent discussion of a type of verse that he terms the "rising threefold verse" (*Commentary* 18–24). Verses of this type, constituting a "substantial minority" of Homeric verses, contain three semantic cola of increasing length, and are characterized by the simultaneous absence of a strong semantic division at the central caesura and the presence of a strong caesura after position 7. He cites the following verses as examples:

- 2.173: διογενὲς Λαερτιάδη, πολυμήχαν' Ὀδυσσεῦ,  
 1.48: ἔζετ' ἔπειτ' ἀπάνευθε νεῶν, μετὰ δ' ἰὼν ἔηκε·  
 1.61: εἰ δὴ ὁμοῦ πόλεμος τε δαμᾶ καὶ λοιμὸς Ἀχαιοῦς·

There are several points to consider here. First, one notes that two of the examples (1.48, 61) have word-end in all three caesural areas. If most "rising threefolds" are similar in this respect, this may simply indicate that phrasing is not always linked so closely to the underlying colometric structure of the verse as Kirk suggests. Perhaps the colometric structure can be expressed by simple word-end, even if this

<sup>27</sup> While cola were probably semantic units in origin, it is worth emphasizing that we are speaking of the colon as it exists in Homer—that is, as a metrical unit, or perhaps more properly as a metrical force that affects the phrasing of ideas within the verse. Because of the frequent, but not universal, correspondence between metrical and semantic units within the Homeric hexameter, it has proven difficult, as we have seen, to define clearly the nature of the colon. In discussing the relationship between metrical cola and sense-units, Allen (114f) concludes that "the colon as such (or its delimiting caesurae) is a metrical feature, based on grammar." It is difficult to judge how literally to take the phrase "based on grammar," since Allen has just cited with approval Porter's notion that the colon is "normatively and essentially a unit of meaning," that is, a *metrical* structure that affects the arrangements of ideas within the verse (*cf.* Porter 16: "A colon is *not* a unit of meaning, although phrase divisions, when they occur, are often at caesural points"). Allen goes on to state: "The divisions between cola are basically grammatical boundaries at the level of clause or phrase, and tend to occur at more or less strictly regulated points in the line." The word "basically" is confusing; it seems that Allen really means something more like 'often' or 'usually', as we see when he continues, "There may be considerable variation in the grammatical type and strength of caesurae," from division of clauses to "mere word boundaries." He further distinguishes metrical cola from sense-units: "Even though not all lines show coincidence of cola with major grammatical units, nevertheless the most frequent divisions between words tend to occur at points where higher grammatical boundaries are also commonest." Hence the divisions between metrical cola (*i.e.*, caesurae) do not necessarily coincide with major sense-division.

does not coincide with phrase-end. Second, Kirk's other example (2.173) is a most unusual verse. According to McDonough (79) there are only 47 verses in the *Iliad* (.3% of all verses) in which the mid-line caesura is bridged by a single word beginning in position 4 and extending to position 7. In addition to these 47 words, there are 173 other verses in which the mid-line caesura is bridged by a single word ending in position 7. This total of 220 words falling in position 7 represents less than 3% of all the words of their metrical types in the *Iliad*. Clearly, the poets did not use these metrical shapes freely in position 7, but reserved them because of their special effect of bridging the mid-line caesura.<sup>28</sup> On the other hand, if phrasing rather than word-end were truly the determinant of colometric structure, one should marvel at the disproportionate number of rising three-folders *with* a mid-line caesura if sense-units with the metrical shape  $\underline{\text{v}}\text{v}-\underline{\text{v}}\text{v}-$  create an acceptable metrical colon in position 7, why does the poet bother to provide a mid-line caesura in the great majority of lines in which this metrical sense-structure occurs (e.g. 1.48, 61)? The metrical shapes  $\underline{\text{v}}\text{v}$  and  $-\underline{\text{v}}\text{v}-$  are relatively frequent. Why then are the structures  $\underline{\text{v}}\text{v}:-\underline{\text{v}}\text{v}-^7$  so much rarer than  $-\underline{\text{v}}\text{v}-\text{v}:\text{v}-^7$  or  $\underline{\text{v}}\text{v}-:\underline{\text{v}}\text{v}-^7$ , and why are there no instances of the structure  $\underline{\text{v}}\text{v}-\underline{\text{v}}\text{v}:-^7$ , unless the poets felt an impetus for word-end in positions 5 or 5½, regardless of the configuration of sense-units? In these cases the pull of an underlying metrical structure overrides whatever inclination they may have had to shift phrases about within the verse at their convenience. Until the relationship between the semantic and metrical units of the verse is better understood, the argument that "rising threefold" verses of this type display an alternate *colometric* structure must be considered speculative.

That sense-units and colometric structure exist to some extent independently of one another is also suggested by a comparison of stichic hexameter with elegiac hexameter. In both verse-types the overall frequency of word-end in the caesural areas remains generally consistent, as can be seen in the following table comparing the frequency of word-end in the *Iliad* and the hexameter verses in the *Theognidea*:<sup>29</sup>

<sup>28</sup> Porter (47) observes that the most common word-types bridging the B caesura can be used with no particular difficulty in four-colon lines, so the poet could avoid the rare variation if he so desired. He suggests that the reasons for the use of tripartite verses are to be found in their particular contexts. The poet's intention may be "solemnity, emphasis, metrical variation as in catalogue passages, or, sometimes, a deliberate pursuit of metrical distortion to correspond with the mood and artistic content of the passage."

<sup>29</sup> The figures for Theognis are taken from my *Studies in the Diction and Meter of Early Greek Elegy* (diss. Bryn Mawr 1984), Metrical Tables 1, 2, 24 (pp.157-59, 181).

	A (2 and 3)	B (5 and 5½)	C (7 and 8)
<i>Theognidea</i>	94.2%	99.1%	87.6%
<i>Iliad</i>	90.3%	98.9%	86.9%

Percentage of hexameters with word-end in 'caesural' areas

According to West, however, sense-pauses are considerably more frequent in elegiac hexameters in position 8 (C) than in stichic hexameters, and considerably less frequent in positions 2, 3 (A) and 5 (B). The percentage of lines in which a pause occurs at each place are as follows (West 35, 45):

	.6	2	6	7		12	9		3		11				63
Stichic:	-	∪	∪	-	∪	∪	-	∪	∪	-	∪	-	∪	∪	-
		.6	.6	3		4	12		3		17				47
Elegiac:	-	∪	∪	-	∪	∪	-	∪	∪	-	∪	-	∪	∪	-

Location of sense-pauses in the hexameter

It appears that a significant alteration in the pattern of sense-division in these verses has a minimal effect upon the underlying colometric structure of the hexameter. The colometric structure of the verse as determined by word-end is relatively immutable, while the articulation of sense-units within the verse is relatively variable. Because of this, it would seem unsound to argue that there is a cause-and-effect relationship between the location and frequency of sense-pauses (semantic structure) and the colometric structure of the verse. On the other hand, the fact that, overall, the most frequent positions for sense-pause and word-end are the same in stichic and elegiac hexameter is consistent with Porter's view that the underlying colometric structure has a normative, though not rigidly binding, influence upon phrasing within the verse.

### (c) *Summary*

Statistics of word-end distribution alone indicate that positions 5 and 5½ constitute a caesural area because word-end occurs there in virtually every verse. This is not clear for positions 2 and 3 or positions 7 and 8. Since the relationship between sense-units and colometric structure has not yet been defined satisfactorily, it is not clear that 'word-end/sense-pause' tests of the sort that Kirk has performed are relevant to the determination of colometric structure. If, as Kirk asserts, sense-pause is relevant to the determination of colometric structure, the fact that punctuation is frequent in positions 2 and 3, 5 and 5½, and 7 and 8 but is infrequent elsewhere could, after all, be taken as evidence for treating positions 2 and 3 (A) and 7 and 8 (C)

as caesural areas. Word-end at A and C does not appear 'casual', yet because it is not invariable, it is likely that the principle involved is different from that of the mid-line caesura. It would be preferable to make some distinction between the 'primary' caesura at the mid-line and the 'secondary' caesurae at A and C.

#### 4. *Bridges*

Fränkel's division of the hexameter into four cola separated by three caesural areas was intended to explain both the frequency of word-end in the caesural positions and the simultaneous infrequency of word-end in positions 3½, 4, and 7½. According to Porter (12) word-end is infrequent in these positions when the corresponding caesura is not expressed because it would result in "an avoided colon ending," one that creates an ambiguity of colometric structure. Word-end in the avoided positions is less objectionable if there is also word-end in the nearby caesural position giving proper articulation to the colon. In this way the four-colon theory provides a unified explanation for Meyer's Law and Hermann's Bridge.

This theory has been challenged, most notably by Kirk (103), who suggests that the four apparent cola are the result rather of "a complex of causes" than of a basic metrical subdivision of the verse. Kirk prefers to explain the avoidance of word-end in positions 3½, 4, and 7½ as the result of several factors—for example, the infrequency of words of certain metrical shape in the poetic language, or 'euphonic' considerations, such as the avoidance of three consecutive trochaic word-breaks or the avoidance of monosyllables at the end of a colon. Although many have found Kirk's approach sound and his results convincing, certain flaws in Kirk's analysis come to light upon investigation. I will return to the general question of euphony after examining Kirk's suggestion that the A and C caesurae can be explained as the result of natural word-placement combined with the infrequency of certain longer metrical shapes.

##### (a) *Meyer's Law*

Kirk's treatment of Meyer's Law is premised on the assumption that word-end is restricted in positions 3½ and 4. It therefore requires a word of the minimum metrical length  $\sim - \underline{\sim} -$  ending in position 5 to avoid word-end in 2 or 3. Kirk claims that words of this length are rare in the poetic vocabulary and that a natural distribution of them in the hexameter would result in only about one line in ten without word-end in position 2 or 3—approximately what we find in O'Neill's

and Porter's samples.<sup>30</sup> For Kirk this demonstrates that the high frequency of word-end in positions 2 and 3 is the result of a natural arrangement of the metrical shapes at the poet's disposal, and he goes on to conclude that there is no evidence of an impulse for word-end in positions 2 or 3. In reaching this conclusion, however, he overlooks evidence in Porter's tables that is damaging to his case. Is there, we should ask, a general restriction upon word-end in position 3½ (as Kirk believes), or one that affects some metrical shapes but not others? The following table, based on Porter's Tables XII and XIII (58), will clarify this. In it we see the number of occurrences in Porter's sample of words of each metrical shape ending in positions 3½ or 4 (metrical shapes below the lines violate Meyer's Law).

Word-end in position 3½:			Word-end in position 4:		
Metrical type	<i>Iliad</i>	<i>Odyssey</i>	Metrical type	<i>Iliad</i>	<i>Odyssey</i>
˘	78	58	˘	24	28
˘—	51	50	—	55	97
˘—˘	12	6	˘˘	72	76
˘˘—˘	1	5	—	12	18
—˘˘	7	1	—˘˘	26	21
—˘—˘	4	5	˘—	2	6
—˘—˘˘	3	2	˘—˘˘	4	2
			—	0	1
			˘˘—	0	1
			—˘˘	0	0

#### Metrical characteristics of words ending in positions 3½ and 4

<sup>30</sup> Cf. 92: "As a preliminary it may be observed that the absence of word-end from either position, if combined with the assumption of a euphonic explanation of some kind for the inhibitions at 3½ and 4, entails the use of long words of a minimum value of ˘—˘— . . . . Words longer than that are very rare in Homer, quite rare in Greek; whereas words of this minimum value, according to O'Neill's 1,000-line samples from the *Iliad* and the *Odyssey*, occur in about 15% of Homeric lines, in about 10% in the required position ending at the masculine (B2) caesura. The result is, on this evidence, that nearly nine verses out of ten will have word-end at either position 2 or 3, quite apart from any possibility of colometric structure." It is not clear to me how Kirk performed this computation. Consulting O'Neill's Tables XIX and XX for words of the shape ˘—˘— we find 40 instances in the *Iliad* and 48 in the *Odyssey* at position 5. In O'Neill's Tables XIXf, XXIf, and XXV–XXVIII we find that in the *Iliad* 58 lines (5.8%) have words ending in positions 5 or 5½ beginning before position 2; in the *Odyssey*, 73 (7.3%). These metrical shapes added to those violating Meyer's Law would give us the total number of lines without word-end in 2 or 3. In any case, an argument based upon the availability of metrical shapes can hardly help but be circular: 'Because words of such and such shape are infrequent in the whole sample, they are infrequent in a part of the sample'. We do not know whether words of these shapes are infrequent in 5 and 5½ because they are truly rare in the language or because they do not conform to the colometric properties of the verse in these positions. In this regard note that the shapes ˘—˘— and ˘—˘—˘ are considerably more frequent in positions 9 and 9½ than in 5 and 5½.



In Porter's sample of the *Iliad* 156 lines (16%) have word-end in position 3½, too high a percentage to justify Kirk's claim of a general avoidance of word-end in this position. It is, at least, not nearly so strict an avoidance as one finds in positions 11 (3%) and 7½ (5%). Looking further at the individual metrical shapes, we find that short monosyllables alone account for exactly 50% of all word-ends in 3½, a greater percentage than in any other verse position except 7½ (from Porter's Tables IX and XXIV):

Position:	1½	2	3½	4	5½	6	7½	8	9½	10	12
<i>Iliad</i>	41%	23%	50%	12%	19%	41%	47%	6%	17%	16%	3%
<i>Odyssey</i>	36%	27%	46%	11%	21%	43%	68%	7%	16%	18%	3%

Percentage of short monosyllables by metrical position

Only three other positions approach the density of monosyllables ending in position 3½, and they all have metrical constraints favoring the use of short monosyllables: 1½ (41/36%: only two possible shapes), 6 (41/43%: only three shapes possible following the B caesura), 7½ (47/68%: affected by the C caesura; see 142 *infra*). The shape - -, which accounts for 33% of the words ending in position 3½ in Porter's combined samples of the *Iliad* and the *Odyssey*, accounts for a greater percentage only in position 1½ (61%), where there are only two shapes possible, and in position 9½ (52%), where the high percentage is attributable to the preceding bucolic diaeresis (and perhaps to a limited extent to the effect of Hermann's Bridge: the percentage of - - in 9½ would be smaller if the common shape - - - were not avoided there). The combination of the shapes ~ and - ~ accounts for 84% of all word-ends in position 3½, a much higher percentage than in any other position (except, of course in position 1½, where the two shapes must equal 100%): 5½ (49%), 7½ (63%), 9½ (68%). On the other hand, all the longer metrical shapes that would bridge positions 2 and 3 are under-represented in 3½ compared to the other positions where they can occur except 7½ (another restricted position).

We have seen that shorter metrical shapes (~ and - ~) are over-represented in position 3½, while all longer ones are under-represented there. But if, as Kirk asserts, the poet felt a general inhibition against word-end in position 3½, surely that inhibition would influence all metrical shapes equally, not just those longer than three morae bridging the A caesura. That is to say, the relative frequencies of various metrical shapes in position 3½ are consistent with the theory of an A caesura (*i.e.*, impulse for word-end in position 3 or 2;

word-end permitted freely in position 3½ when the A caesura is expressed, avoided when it is not). They are not, however, consistent either with the theory of a general avoidance of word-end in position 3½ or with the notion of a natural placement of metrical shapes within a two-colon hexameter.<sup>31</sup>

The same conditions exist, even more clearly, for words ending in position 4. Word-end in position 4 occurs in roughly 20% of the lines in Porter's sample and is thus a bit more frequent than that in position 3½. In Porter's combined samples of the *Iliad* and the *Odyssey* 96% of the words ending in this position follow a word ending in position 3 or 2. Kirk considers position 4, like 3½, to be avoided generally for all word-end, but in fact only words longer than four morae are avoided there. While this does not in itself prove the existence of an A caesura, the fact that certain metrical shapes occur freely in positions 3½ and 4 while others are avoided there is most detrimental to Kirk's argument that the high frequency of word-end in positions 2 and 3 is attributable simply to the general avoidance of word-end in positions 3½ and 4. The infrequency of longer metrical shapes in positions 3½ and 4 would be natural, however, if the poets felt an impulse for caesura in positions 2 and 3.

(b) *Hermann's Bridge*

In his treatment of the C caesura Kirk follows generally the same line of reasoning he uses to challenge the A caesura, *i.e.*, that the scarcity of words long enough to prevent it accounts for the appearance of a caesura in that area of the line. In this case, however, the premise itself is false. Proceeding from the assumption that word-end is avoided for reasons of euphony in position 7½, as in 3½, he maintains (91f) that "In verses where there is no bucolic caesura at 8, in order to avoid word-end at 7 the poet had to produce a word of the minimum value  $--\underline{\cup}\underline{\cup}$  (with masculine caesura) or  $\cup--\underline{\cup}\underline{\cup}$  (with feminine)." This assumes, incorrectly, that a word bridging the C caesura must begin at the B caesura. But the minimum metrical value of a word simply bridging positions 7 and 8 is  $-\underline{\cup}\underline{\cup}$ , ending in position 9.

Words bridging positions 7 and 8 fall into two groups: first, the shapes  $-\underline{\cup}\underline{\cup}$  beginning in position 6, and second those that Kirk considered, like  $(\underline{\cup})\underline{\cup}-\underline{\cup}\underline{\cup}$ , beginning after the mid-line caesura.

<sup>31</sup> Some of my thoughts on the A caesura parallel those of R. Beck, "A Principle of Composition in Homeric Verse," *Phoenix* 26 (1972) 213-31, although Beck advances an explanation of word-end avoidance in positions 3½ and 4 that seems to me implausible.

Words of the latter type are, as Kirk notes, relatively infrequent, and are limited (by the required B caesura) to positions 5, 9, and 11, creating in each disruptions of colometric structure (in a four-colon verse). O'Neill's Tables XIV and XV reveal, however, that the shapes  $-\underline{\cup}\underline{\cup}-$  are not rare in the poetic vocabulary and do occur, but infrequently, in position 9. In fact, only 8% of all words shaped  $-\underline{\cup}\underline{\cup}-$  occur there, compared to 47% in 3, 37% in 5, 2% in 7 (bridging the mid-line caesura), 5% in 11 (creating a monosyllable in 12).<sup>32</sup>

Infrequency of  $-\underline{\cup}\underline{\cup}-$  in position 9 could be explained by a theory proposed by West: simply stated, it is that metrical shapes tend to occur most frequently where they fill positions at the beginning or end of a colon (he assumes a two-colon verse) and tend to be avoided in interior positions. This theory will be examined in greater detail below; it is relevant, however, to note here that if it were correct, the shapes  $-\underline{\cup}\underline{\cup}-^9$  beginning in position 6 would be infrequent for reasons unconnected with any impulse for word-end in position 7 or 8. That this explanation is not entirely adequate can be seen by the fact that the shape  $-\cup\cup^8$ , also beginning in position 6, is quite frequent, accounting for 29% of all words of that type. Of these three shapes,  $-\cup\cup-$ ,  $---$ , and  $-\cup\cup$ , beginning in position 6, the poets use only  $-\cup\cup$  freely. This suggests that they felt a certain reflex toward word-end in position 8 and, simultaneously, an instinct to avoid bridging position 8. Of course there may be other factors involved, and I would not, therefore, care to press this argument. While the distribution of words of these metrical shapes may not constitute proof of a C caesura, it is certainly consistent with the four-colon theory. At the very least we can say that a force having nothing to do with the availability of metrical shapes deters the poet from placing words with the shape  $-\underline{\cup}\underline{\cup}-$  in position 9.

If infrequency of the metrical shape  $-\underline{\cup}\underline{\cup}-$  in 9 is the result of its bridging an area of the verse in which word-end is anticipated, we would expect to find that one or more of positions 7, 7½, and 8 display caesural characteristics. Because of the frequency of both word-end and punctuation in positions 7 and 8, and because of the strong aversion to word-end in position 7½, the prime candidates would appear to be 7 and 8. To these reasons we should add that word-end in 7½ is almost always accompanied by word-end in 7 and/or in 8. Of the 721 lines in the *Iliad* with word-end in position

<sup>32</sup> The percentages are derived by adding the totals in O'Neill's Tables XIV and XV and then dividing each entry by 337. The total number in Table XIV has been corrected for natural quantities in position 12.

7½, 710 (98.5%) have word-end in 7 and/or 8.<sup>33</sup> This is, of course, precisely the opposite of what one would expect to result from a natural (random) arrangement of words in the verse, since word-end in contiguous positions, occurring only with monosyllables, should be relatively infrequent. Therefore, in lines with word-end in 7½, one would expect contiguous word-end in 7 and 8 to be less frequent than in the whole sample.<sup>34</sup>

There are certain similarities between the conditions for word-end in position 7½ and those for 3½ and 4. As has been demonstrated, word-end in those positions is more acceptable when there is also word-end in 3 or 2. Likewise, word-end in position 7½ is infrequent but appears to be tolerated if there is also word-end in 7 or 8. This is consistent with the hypothesis that positions 7 and 8 constitute a caesural area. While the four-colon explanation is not necessarily the only one possible, Kirk has failed to prove that the high frequency of word-end in position 7 and 8 results from a natural placement of the available metrical shapes. As we shall see, there are also difficulties with his related theory that word-end is avoided in position 7½ for considerations of euphony.

(c) *Kirk's Theory of Euphony*

Kirk proposes that apparent A and C caesurae result from the avoidance of word-end in position 3½, 4, and 7½ “for reasons of euphony unconnected with any colometric structure” (91f). Because his explanations of word-end avoidance in positions 3½ and 7½ are related, I will begin with his treatment of position 4 before turning to the others.

Kirk adduces two arguments to explain the infrequency of word-end in position 4. First, he suggests that it is the result of an inhibition against monosyllables in position 5, similar to that against monosyllables at the verse end. An inhibition against word-end in position 4 in verses with a masculine caesura was, he asserts, extended by analogy to apply to lines having feminine caesurae. From Porter's Table III(b) and (d) we see that word-end in position 4 pre-

<sup>33</sup> Compiled from McDonough's Tables 55 (~ in 8), 67 (~ in 7½), 78 (~ ~ ~ in 7½), 91 (~ ~ ~ ~ in 7½), 93 (~ ~ ~ in 7½), and 110 (~ ~ in 7½). All 372 monosyllables in position 7½ follow word-end in position 7; only four other metrical types occur in position 7½, and all examples of each are followed by a monosyllable in position 8 except: (~ ~ ~) 9.189, 23.587; (~ ~ ~) 6.2, 9.48, 23.760; (~ ~) 10.317, 16.143, 16.627, 19.390, 24.60, 24.753. McDonough's total number of word-ends in 7½ is 722; but 11.189 should not be counted as type 110, reducing the total to 721.

<sup>34</sup> For example, we see from Porter's Tables X and XI that word-end occurs in either 2 or 3 in 90.3% of the sample (523 + 618 - 238 monosyllables in 3 = 903), but in 2 and 3 in only 23.8% of the sample (238 monosyllables in 3).

cedes that in position 5 in only 18 lines out of 322 with the masculine caesura (5.6%). On the other hand, word-end in position 4 precedes that in position 5½ in 141 lines out of 544 (25.9%).<sup>35</sup> Thus, while there is indeed a strong tendency to avoid monosyllables in position 5, no such tendency exists to avoid trochees in position 5½. In O'Neill's Table V we see, indeed, that 5½ is a regular position for trochees, and Porter's Table XV indicates that the trochee is, in fact, the most frequent metrical shape in position 5½. Thus there is not the least evidence to support Kirk's assertion that avoidance of word-end in position 4 in lines with the masculine caesura ever affected word-end in that position in lines with the feminine caesura.

Kirk's second argument concerning word-end in position 4 begins with an acknowledgement that the inhibition against word-end "was virtually abandoned if there was preceding word-end at 3, and reduced if there was preceding word-end at 2" (95). This is consistent with Fränkel's colometric division of the first half of the hexameter; but Kirk once again proposes an alternative explanation based upon a principle of euphony. It is his contention that a short word is more acceptable before a final monosyllable than a long one (95):

... the effect of final monosyllable is obviously more abrupt if the monosyllable is preceded by a heavy word. Thus, *e.g.*  
 - : υ - | υ <sup>4</sup> | <sup>5</sup> | is permissible, and even - υ | - υ <sup>4</sup> | <sup>5</sup> | can be tolerated on occasion, but - : υ : υ - υ <sup>4</sup> | <sup>5</sup> | is avoided.

Porter's tables do not give us the information necessary to evaluate this theory for position 5, but from his Table XXIII we can determine that it does not at any rate hold before monosyllables in position 12.<sup>36</sup> If short words were more acceptable than long ones before final monosyllables, we would expect to find evidence of that preference in words ending in position 11. There, however, we find 15 words of 4 or fewer morae and 15 of more than 4 morae. The shape - υ - is the most frequent in this position. The alleged preference for a short word before a final monosyllable has not been established, and so there is no evidence to support euphonic rather than colometric reasons for the avoidance of words longer than - υ - in position 4.

<sup>35</sup> I have not counted the 24 lines with word-end in both 5 and 5½.

<sup>36</sup> Since Porter's Table III only concerns lines in which the A1 or A2 caesura is expressed, the longest metrical shape indicated before a long monosyllable in position 5 is - υ -, and, before a short monosyllable in position 5½, - υ -. There is a further problem in that Porter always considers position 5½ to be the caesura when there is word-end in both 5 and 5½.

Kirk suggests a reason of a different sort for the infrequency of word-end in  $3\frac{1}{2}$  and  $7\frac{1}{2}$ : “the inhibitions on word-end at  $3\frac{1}{2}$  and  $7\frac{1}{2}$  are caused by the desire to avoid three successive trochaic cuts . . . ” (103). The reasoning by which he arrived at this conclusion is somewhat circuitous, and we will find upon examination that, once again, the evidence is at least as supportive of Fränkel’s position as it is of Kirk’s. Beginning with a report of his study of the word  $\acute{\epsilon}\pi\epsilon\iota\tau\alpha$  in the first half of the *Iliad*, Kirk postulates that the poet sought to avoid amphibrachs (˘ – ˘) except at the verse-end because of their potential for creating a sequence of three trochaic word-ends. He admits that “where an amphibrach word ends at position  $3\frac{1}{2}$ , it is frequently followed by a feminine caesura, that is, another trochaic cut, to give a series of three trochaic cuts” (98). Yet he concludes, “Quite possibly it is this succession not of two but of three contiguous trochaic cuts which was found undesirable . . . . ” (99). Certainly the poet was under no compulsion to continue his verse with a feminine caesura after an amphibrach in  $3\frac{1}{2}$ , and since, as Kirk reports, the feminine caesura is common after ˘ – ˘ in  $3\frac{1}{2}$ , the poet can have felt no particular need to avoid three consecutive trochaic word-ends.<sup>37</sup>

While the foregoing may seem a minor point, since it merely represents a lapse of logic, it is more damaging that Kirk’s suggestion would not account for the infrequency of certain metrical shapes other than ˘ – ˘ in  $3\frac{1}{2}$  and  $7\frac{1}{2}$ . As we can see from my table on Meyer’s Law (*supra* 140), in position  $3\frac{1}{2}$  all shapes longer than four morae are consistently less frequent than the amphibrach, yet with these there is no possibility of three consecutive trochees.<sup>38</sup> Similarly, the shapes – ˘ and ˘ ˘ – ˘ could not create a series of three trochaic word-ends in position  $7\frac{1}{2}$ , yet they too are consistently less frequent than the amphibrach.

Finally, Kirk’s comparison (100) of the use within the verse and at verse-end of four shapes ending in trochees once again supports equally well the four-colon theory of the hexameter. That the shape ˘ – ˘ is infrequent in all interior positions ( $3\frac{1}{2}$ ,  $5\frac{1}{2}$ ,  $7\frac{1}{2}$ ,  $9\frac{1}{2}$ ) could be explained by the fact that in each one it creates infractions or likely infractions of colometric structure. Like most other shapes, these,

<sup>37</sup> In fact, in the *Iliad* 83 of the 166 instances of ˘ – ˘ in position  $3\frac{1}{2}$  are followed by a feminine caesura, 79 by a masculine and 4 by a hephthemimeral (*cf.* McDonough’s type 79, 435–37).

<sup>38</sup> One might also wonder how this theory would account for the infrequency of word-end in position  $3\frac{1}{2}$  in the first hemiepes of the elegiac pentameter, where there is no possibility of three successive trochaic cuts. (Only 12% of first hemiepes in Theognis have word-end in  $3\frac{1}{2}$ .)

virtually without exception, are frequent where they conform to the various cola and infrequent where they bridge them.<sup>39</sup>

(d) *Two Other Views*

Beekes, who follows Kirk in rejecting the four-colon in favor of the two-colon theory, attempts to explain "all localization rules" with his own set of six basic principles.<sup>40</sup> This attempt results in little clarification. His rules 3 and 4, pertaining to the positions avoided near the A and C caesurae, are open to the same criticism as Kirk's work on those positions. Beekes adopts with little modification Porter's idea that the infrequency of word-end in position 3½ could be explained by the avoidance there of the metrical equivalent of the adonic cadence, and he logically extends this prohibition to cover long-syllable word-ends in position 4.<sup>41</sup> But Beekes' theory does not account for the observable disparity in the frequency of occurrence of the metrical shapes available for positions 3½ and 4: the structures (1)  $- \underline{\cup} \underline{\cup} - | \underline{\cup}$ , (2)  $- \cup \cup | - \underline{\cup}$ , (3)  $- \cup | \cup - \underline{\cup}$ , and (4)  $- | \underline{\cup} \underline{\cup} - \underline{\cup}$  all form replicas of the adonic cadence. Why are only the first two permissible in positions 3½ and 4? Similarly, Beekes' Rule 4 will account for the infrequency of the shapes  $\cup - -$ ,  $- - -$ , and  $\cup \cup - -$  in position 4, but not for that of  $\cup - \cup \cup$ ,  $- - \cup \cup$ , and  $\cup \cup - \cup \cup$  (see my table on Meyer's Law, *supra* 140). Why is word-end position 7½ acceptable only if followed or preceded by word-end in the adjacent positions? The difficulty here is that Beekes' rules, like other attempts to fit the

<sup>39</sup> See O'Neill's Tables V, IX, XIII, XXII.  $\cup \cup \cup \cup$  is infrequent in 3½ where it bridges the A caesura and in 7½ where it violates Hermann's Bridge.  $- \cup \cup \cup \cup$  is infrequent in 3½ where it bridges the A caesura and in 7½ where it both bridges the B caesura and violates Hermann's Bridge. In other positions, interior and final, these shapes occur freely. The only exception to this principle is  $\cup \cup$  in 3½, which is rare even though it follows the alternate A caesura in position 2.

<sup>40</sup> Of Beekes' six rules (p.2), only numbers 3 and 4 are of concern here: "Rule 3. Word end is forbidden at 7½. Rule 4. Word end is avoided at 3½ and long final syllable at 4."

<sup>41</sup> The following table compares the frequency of long and short word-ends in position 4 in two samples of Homeric hexameter and in Theognis:

O'Neill:	<i>Iliad</i>	91 longs in 4 / 167 shorts in 4
	<i>Odyssey</i>	128 / 171
	<i>Hesiod</i>	83 / 87
Porter:	<i>Iliad</i>	69 / 150
	<i>Odyssey</i>	127 / 123
Barnes:	<i>Theognis</i>	64 / 77

Only the *Iliad* appears to support Beekes' theory consistently in both O'Neill's and Porter's samples. I will suggest another explanation for the greater number of short syllables in position 4—*i.e.*, the mobility of formulas with the metrical shape  $(-)\cup\cup|-\cup$  between positions 5½ and 12, where the preponderance of short syllables in the fifth foot would carry over to the second.

hexameter into a two-colon mold, fail to account satisfactorily for the apparent impulse for word-end in positions 2, 3, 7, and 8.<sup>42</sup>

Taking a somewhat different approach, West would explain both Meyer's Law and Hermann's Bridge as the results of an association of certain metrical shapes with certain sections of the verse—for example,  $\text{---}$  with position 12,  $\text{---}$  with position 12 or  $5\frac{1}{2}$ .<sup>43</sup> West formulated these general rules into a theory that gains a degree of plausibility from the fact that it is applicable not only to the hexameter but also to the trochaic tetrameter, where it may explain both Havet's and Porson's Bridges.<sup>44</sup> Though nicely devised, this line of reasoning remains open to question. For example, virtually any word that the poet might use in position  $9\frac{1}{2}$  could hardly help but have a metrical shape that would fit the end of the hexameter. Yet on West's reasoning the poet who chose to place a word in position  $9\frac{1}{2}$  would be guilty of "abnormal word-placing." Equally guilty (or almost so) would be the poet who chose to place in positions 9 or 10 a shape that fit the beginning of a colon. Yet in Porter's tables we see that  $\text{--}$  is frequent in both positions 7 and 9;  $\text{---}$  is almost twice as frequent in position 10 as in 2. It is in this respect that West's diagram of "preferred" word placement is deficient, for we might doubt instinctively that poets interested in ease of versification in the middle as well as at the beginning and end of cola would feel it in their interest to accept West's rules, especially those regarding avoidance of word-end. And in fact they do not. The shape  $\text{--}$  is frequent in three positions,  $1\frac{1}{2}$ ,  $5\frac{1}{2}$ , and  $9\frac{1}{2}$ . It is not a shape for which there

<sup>42</sup> An example of the lack of clarification mentioned above can be seen in Beekes' treatment of position 3 (p.10): "It should be pointed out that there is hardly any reason to admit word-end at 3 as a structural feature. One could in this respect only point to position 3 in table 4 (see there)." Turning there we find the statement: "3 is remarkably frequent, if we do not assume 3 as a positive factor (a caesura)."

<sup>43</sup> West 35-39; cf. also "Three Topics in Greek Metre," *CQ* n.s. 32 (1982) 281-97. The argument as formulated in *Greek Metre* (37f) is circular: we begin with the premise that the poets, "Composing within a frame:  $\text{---} \dots \text{---} | \text{---} \dots \text{---} ||$  or  $\text{---} \dots \text{---} | \text{--} \text{---} \dots \text{---} ||$  [*i.e.*, the hexameter verse as we know it] ... developed a strong tendency" to arrange words in such a way as to conform to that frame, placing "words ending in  $\text{---} |$  at the close, those ending  $\text{---} |$  either there or before the caesura, those scanning  $| \times \text{---} |$  ( . . . ) after the caesura, and those scanning  $| \text{--} \text{---} |$  at the beginning or before the caesura. Consequently it is abnormal to have either (i) words scanning  $| \text{--} \text{---} |$  or  $| \text{---} |$  following the caesura—hence the fourth biceps is normally undivided (Hermann's Bridge), or (ii) words ending  $\text{---} |$  or  $\text{---} |$  in the second foot (Meyer's First Law)."

<sup>44</sup> Cf. West (*supra* n.40) 294f: "Polysyllabic words which are of the right shape for the beginning or end of the colon tend to be placed there rather than in other possible positions. The tendency is stronger as regards colon-end. This gives rise to bridges because there are certain points in the verse at which word-end would only occur as a result of an abnormal word-placing."



appears to be a strong localization tendency, and yet it is absolutely avoided in position 7½. Likewise the shape  $--\cup$ , avoided in position 12 because of the long syllable in 10, occurs freely in positions 5½ and 9½ but not in 7½ or 3½. The shape  $\cup\cup\cup$  occurs freely in positions 5½, 12, and 9½, but not in 7½ or 3½. Since each of these shapes is permitted freely in one interior position (9½), we must wonder what it is that creates such an inhibition against their use in positions 3½ and 7½.<sup>45</sup> There is a similar discrepancy between West's theory and the poets' practice of avoiding in position 4 words beginning in the first foot. According to West's plan, metrical shapes such as  $\cup\cup\cup$  and  $\cup\cup\cup\cup$  should be reserved for the beginning of the second colon. They are indeed virtually banned from position 4, yet both  $\cup\cup\cup\cup$  and  $--\cup\cup$  occur freely (30–35%) in position 10, an interior position.<sup>46</sup>

### 5. Conclusion

The metrical evidence gathered here on Meyer's Law and Hermann's Bridge is consistent with the theory that the pairs of positions 2/3 and 7/8 constitute caesural areas in the hexameter. While Porter and Kirk have demonstrated that in many lines syntactic and colometric structures are not congruent, statistics for word-end (Porter), phrasing (McDonough), and punctuation (West) also support positions 2 and 3 (A), 5 and 5½ (B), 7 and 8 (C) as caesural points. None of these types of evidence is present for positions 1, 1½ (Fränkel's A1 and A2 caesurae) or 9 (Porter's C2 caesura). Kirk was incorrect in asserting that the lack of words of certain metrical shapes is the major factor responsible for caesurae in positions 2/3 and 7/8. Nor should he convince us with his attempt to explain the infrequency of word-end in positions 3½, 4, and 7½ by the assumption of various euphonic factors.

One might conclude with Fränkel that the hexameter is a four-colon structure, and go even further to imagine that the four cola reflect its origin as an amalgam of smaller, originally independent, metrical segments. Such a notion is, however, made less attractive by a variety of questions still unanswered about the four-colon theory. Why is observance of the A and C caesurae so irregular that they

<sup>45</sup> The only 'colon-end' shape that conforms to West's rule is  $\cup\cup\cup$ , infrequent in all positions except 12 and 5½. Yet it is surely more plausible to attribute the infrequency of this shape in position 9½ to the avoidance of word-end in 7½ than to the poet's 'instinct' to reserve this one metrical shape for the colon-end.

<sup>46</sup> The shape  $\cup\cup\cup\cup$  cannot appear in position 10 for the same reason that  $\cup\cup\cup$  cannot appear in 9½: avoidance of word-end at 7½.

have been commonly deemed accidental? What is true for word-end applies as well to sense-units, since there is, as Kirk observed, a greater tendency for formulaic expressions to conform to half-line or third-line than to quarter-line metrical units. Did the colon once combine the functions of sense-units and metrical-units? If so, why do we find a large number of verses in Homer in which sense-units and metrical-units do not correspond? This is the question Kirk posed for the four-colon theory, and while I would reject some elements of his solution, I believe that the question deserves greater attention.

Grounded as it is upon the assumption that the hexameter is a two-colon verse, most recent speculation into its origin looks to various combinations of two shorter verses joined at the mid-line caesura. This approach derives immediate appeal from the regularity of word-end and the frequency of sense-division at the mid-line. Still, such theories will lack plausibility until their advocates manage to comprehend within them in a convincing way both Meyer's Law and Hermann's Bridge.<sup>47</sup> Only in this way will they reconcile a two-colon model of the hexameter with its three observable caesurae.<sup>48</sup>

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<sup>47</sup> *Cf. supra* n.3. Of those mentioned there, Peabody has given the most thought to the A and C caesurae, and my findings here are generally consistent with his point of view. Since his argument is based upon similarities between the caesural properties of the hexameter and those of Indic and Iranian meters, it would be interesting to learn whether one finds corresponding traces of bridged positions associated with caesurae in those traditions.

<sup>48</sup> I should like to express my gratitude to Professor Richard Hamilton of Bryn Mawr College for the many important and helpful suggestions that he offered in the development of this article.