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Tables beyond O'Neill

Introduction

More than sixty years ago, E.G. O'Neill published his well-known tables of localizations of metrical word-types within hexameters from different poets and eras. These have since become a major source not only for metricians. Nevertheless O'Neill's account has some shortcomings which render his tables little useful for certain types of studies: to amend these, I give here a new series of structurally similar, yet more specific tables. Necessarily these need an awful amount of paper; what O'Neill could cover within fifteen pages, is expanded to several dozens here. Still I am convinced that many questions of especially Homeric versification must be treated in respect to the criteria employed here.

First of all O'Neill confined his tables to metrical forms as they appear in the verse. This approach may suffice for purely metrical considerations of the more traditional sort, concerned especially with caesuras and bridges; and it is exactly this field which O'Neill himself seems to have had in mind exclusively. But many times we are confronted with questions of the kind, is the distribution of a certain word typical, in the sense that the poet uses it within the verse just as he uses other words of similar shape? In this case, O'Neill's tables are useless, because a great part of the words correspond to more than one metrical shape, which depends also on the onset of the following word. Of the first line of the Iliad, for instance, only the scansion of Πηληϊάδεω is fixed as — — ∪∪ —, while μῆνιν may appear as —∪ or — —[1], ἄειδε as ∪—∪ or ∪— —[2], Ἀχιλῆος as ∪∪ — — or ∪∪ —∪[3], and θεά as ∪— or ∪∪[4]. Without knowing which percentage of words with similar shape and ending are rendered as short, as long, and as verse final, we cannot retrieve any relevant information from O'Neill's tables.[5] Accordingly I print the numbers for all the particular word shapes that

[1] Only verse finally: Il. 5,34, etc.

[2] Only verse finally as imperfect: Il. 18,570 and Od. 1,326.

[3] Il. 9,107, etc. With Πηληϊάδεω preceding Il. 15,64, etc.

[4] Theog. 426; Hymns 30,16.

[5] O'Neill tries to meet the problems raised by the verse final syllable by giving his Table Twenty-Nine: Natural Quantities in Position 12. But his 'natural' quantities have little to do with the metrical quantities that those syllables would have inside the verse. Moreover, final 'natural' quantities, though a traditional notion in

are metrically relevant. Thus not only the metrical shape, consisting of longs and shorts, but also the onset and the shape of the final syllable is taken into consideration. To keep the extent within reasonable boundaries, however, we must confine ourselves to the most primary distinctions. So we distinguish between three types of onset, vocalic (V-), single consonantal (C-) and double or more consonantal (CC-), neither separating *muta cum liquida* from other types of initial consonance, nor taking into account former initial *Ϝ*- or lost double consonance like *sm-, let alone *su̯-. On the other hand, there are four primary types of word end: with short vowel (-V̆), with long vowel or diphthong (-V̄), with single consonant after short vowel (-V̆C), and with invariably long syllable, regardless if by long vowel plus at least one consonant or, much less frequently, by short vowel plus double or triple consonant (here notated as -S̄C). Again we set aside finer differences as between long vowels, short, and long diphthongs, or between different types of 'simple' and 'over'lengths.[6] So we arrive at a total of at most twelve word shapes per metrical shape. But not all of them apply for all metrical shapes: no shape with short last syllable can end in -S̄C; nor can any with short last-but-one syllable, preceded by a long.

Another issue is that of the type of boundaries that are investigated most usefully. It has long been argued, and I have proved elsewhere,[7] that the versification of hexameter poetry is best considered by using appositive group boundaries instead of the word boundaries of Byzantine writing, even if the former seem less well defined at first glance. To display the peculiarities of the 'inner metrics' of a certain author or poem, appositive groups are preferable, and it is indispensable to give the respective data here. But for certain problems the numbers for simple word boundaries are needed as well, so it seems wise to print both. It is worth noting that quite often the difference is not even of metrical shape but only of ending, namely in the cases of elided monosyllabic postpositives: in Iliad 1,5, the word Διὸς is of the shape C∪⏑V̆C, but the appositive group, Διὸς δ', is C∪—S̄C. Here follows a list of forms which I have counted as appositive:[8]

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classical scholarship, are cross-linguistic as well as, in Greek context, metrical nonsense (cf. Devine/Stephens 1994 79–84).

[6] I am preparing a book including more detailed discussion of such differences.

[7] Hagel (1994) 79–87.

[8] For details see Hagel (1992) 61–65. Forms used as articles/demonstratives/relatives have been assumed to be prepositive after punctuation, and elsewhere checked manually and assigned non-appositive state where demonstrative and not immediately preceding their noun.

Prepositive: ἀμ, ἀμφ᾽, ἀμφί, ἀντί, ἀν᾽, ἀνά, ἄνευ, ἀπό, ἀπ᾽, ἀφ᾽, δι᾽, διά, εἰν, εἰς, ἐκ, ἐν, ἐνί, ἐξ, ἐπ᾽, ἐπί, ἐς, ἐφ᾽, κάγ, κάδ, κάθ᾽, κάκ, κάμ, κάπ, κάρ, κάτ, κατ᾽, κατά, μά, μετά, μετ᾽, μεθ᾽, νή, ξύν, πάρ, παρ᾽, παρά, περί, πλήν, ποτί, πρό, πρός, προτί, σύν, ὑπ᾽, ὑπεύρ, ὑπέρ, ὑπό, ὑφ᾽. μή, μηδ᾽, μηδέ, μηθ᾽, μητ᾽, μήτε, οὐ, οὐδ᾽, οὐδέ, οὐθ᾽, οὐκ, οὐτ᾽, οὔτέ, οὐχ. αἰ, ἀλλ᾽, ἀλλά, αὐτάρ, εἰ, ἐπεί, ἐπήν, ἢ, ἠδ᾽, ἠδέ, ἠέ, ἦε, ἠθ᾽, ἠμέν, ἤν, ἠτ᾽, ἤτε, ἰδ᾽, ἰδέ, ἵν᾽, ἵνα, καί, ὁθ᾽, ὅθι, ὅπερ, ὁτ᾽, ὅτε, ὅτι, ὅταν, ὄφρ᾽, ὄφρα, τόφρ᾽, τόφρα, τῶ, ὥ, ὦ, ὡς, ὥς. ὁ, ἡ, τό, οἱ, τοί, αἱ, ταί, τά, τώ, τόν, τήν, τούς, τώς (dor.), τάς, τοῖο, τοῦ, τῆς, τοῖιν, τῶν, τάων, τῷ, τῇ, τοῖς, τοῖσι, τοῖσιν, τῇ, τῇσι, τῇσιν, ὅς, ὅν, ἥν, ὥ, ἅ, οὕς, ἅς, οὗ, ἧς, ὧν, ᾧ, ᾗ, οἷς, οἷσι, οἷσιν, ᾗς, ᾗσι, ᾗσιν. εὖ.

Postpositive: ἄν, ἄρ, ἄρ᾽, ἄρα, γε, γάρ, δέ, δή, θην, κε, κεν, μέν, νυ, νυν, περ, ῥα, τε. πῃ, ποι, ποθ᾽, ποθε, ποθεν, ποθι, ποτ᾽, ποτε, που, πω, πως. με, σε, ἑ, μιν, ἥμιν, ἧμιν, ὔμιν, ὗμιν, μευ, σεθεν, σεο, σευ, τευ, ἕθεν, ἑο, εὑ, σφε, σφας, σφεας, σφι, σφιν, σφω, σφωε, σφεων, σφωιν, σφωι, μοι, τοι, σοι, οἱ, σφισι, σφισιν. τις, τι, τινες, τιν᾽, τινα, τινας, τεο, τινος, του, τινων, τινῶν, τινι, τισι, τισιν. εἰμι, εἰμ᾽, ἐσσι, ἐσθ᾽, ἐστ᾽, ἐστι, ἐστιν, εἰμεν, ἐσμεν, ἐστον, ἐστε, εἰσ᾽, εἰσι, εἰσιν, ἐών. φημ᾽, φημι, φησι, φησιν, φαμεν, φατ᾽, φατε, φασ᾽, φασι, φασιν.

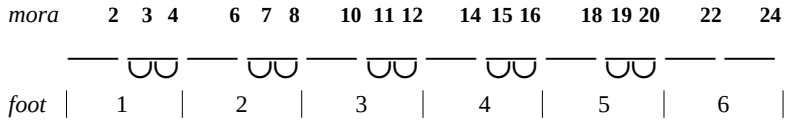
Neither available space nor time permitted to include the whole of Greek hexameter poetry. The selection given here represents simply for what I have available metrical and prosodical data in electronic format. It comprises the full text of: Homer's Iliad, and Odyssey; Hesiod's Theogony and Works, counted together, because their relative shortness makes statistical distinctions between them little significant; Aratus' Phainomena; the Argonautica by Apollonius (Apollon.); Kallimachus' hexametric hymns (Kallim.); the hexametric poetry by Theocrit; the Posthomerica by Quintus of Smyrna; the Paraphrase of St. John's Gospel ascribed to Nonnos (par. ev. Ioh.); and finally Nonnos' Dionysiaka (Dionys.).

For obvious reasons, I have used the texts as they are available from the Thesaurus Linguae Graecae project, even where another edition might have been preferable. The texts have been processed exclusively with the help of software developed by myself for exactly this purpose; where metrical and prosodic information could not be deduced directly from the written text, it has been provided manually.[9] This will be the main source of errors, which are always mine. Still I am convinced that the number of such errors is minute (especially for the Iliad, where I have been working with the data for a dozen of years) in respect to the amount of text processed, and that the tables are reliable for all practical purposes. Where for a given work and word shape only a small sample is available, I suggest a quick re-evaluation for optimal security.

[9] See Hagel (1992) 58–60; 63; Hagel/Danek (1996) 111–113.

The tables proceed from the shorter (and more frequent) shapes to the longer (and less frequent) ones, just as in O'Neill's paper. Within one metrical shape the word shapes are ordered first by onset, then by ending, in the following order: V-, C-, CC-; -V̆, -V̄, -V̆C, -S̄C. As regards the minimum frequency of a shape that justifies including it in our tables, I have decided to print only those that appear at least 500 times in total.

The number of instances of a shape is given for each author or work. Together with the percentages for the individual positions in the verse, they provide the basis for eventual statistical tests. Verse positions are those where a given form ends. They are counted in *morae* from the start of the verse, instead of measuring in longs as often done. So our numbers are twice those found at O'Neill:



In almost all cases this system suffices for our purposes. Ambiguities arise only where monosyllabic word shapes can appear both as long and as short. In this case we must distinguish between the foot final verse positions, 4, 8, 12, 16, and 20, in dactylic and in spondaic feet and count these as different verse positions, as they reflect fundamentally different metrical usages of a form. I have marked the short ('dactylic') form as 4d, etc., the long ('spondaic') one as 4s, etc. So, for instance, the particle τε appears at position 8d in Il.1,5 οἰωνοῖσί τε πᾶσι, but at 8s in 2,349: γνώμεναι εἴ τε ψεῦδος.

For the sake of convenience, here is a list of traditional names of verse positions, together with their location:

mora	boundary	
	traditional name	Fränkel's siglum[10]
2		A1
3	first trochee	A2
4		A3
6	trithemimer	A4
10	penthemimer	B1
11	trochaic middle caesura	B2
12	middle dieresis	
14	hephthemimer	C1
15	Hermann's bridge	
16	bucolic dieresis	C2
24	verse end	

O'Neill has also provided numbers to measure the degree to which a form is restricted to just a subset of its possible locations within the verse, which restriction he calls 'localization'. Although this is an excellent idea, the numbers he gives do not serve their purpose, all the

[10] See Fränkel (1960).

more since they are based on a subjective evaluation.[11] But as I have shown previously[12] there is a simple mathematical way to gain an exact measure of localization, namely by

$$localization = \frac{1}{n}\sqrt{\frac{a}{a-1}\sum_{i=1}^{a}\left(x_i - \frac{n}{a}\right)^2}$$

where n is the number of instances of a given word shape, a the number of verse positions in which it may appear, and x_i the number of instances at each of these positions. The possible localization values range from zero for exactly equal distribution between all possible positions, and 1 for total restriction to one position. In the tables, the numbers are printed as percentages, just for the sake of readability.

I shall not go into a discussion of the interrelation between meter, localization, and formulaic language here,[13] nor will I argue for the primacy of either rhythm and aesthetics or traditional diction. If the following tables provide just another tool for those who deal with questions of this kind, I am well content.

References

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[11] See Hagel (1994) 81 with note 13.

[12] Hagel (1994) 81–83, with the decduction of the formula.

[13] Cf. the preliminary statements in Hagel (1994) 87–89.