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# WORD JUNCTURE IN LATIN PROSE AND POETRY

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The metrical structures of Latin (and Greek) poetry depend not only upon the sequences of longs and shorts corresponding to the initial and medial syllables of the constituent words of the line of verse but also upon the nature and length of the final syllables produced (or metrically eliminated) by the words placed in conjunction. For this reason alone, the composer of metrical Latin was necessarily concerned with the juxtapositions of words, and these juxtapositions or word junctures are the object of our study. We compare the distribution of these junctures in passages from ten Latin poets and, for comparative purposes, in ten Latin prose writers.[1] Since metrical constraints do not govern the junctures between the words at the ends of lines of poetry and the initial words of the following lines, these receive separate consideration. Finally, on the hypothesis that the distributions of junctures may differ at strongly marked pauses in sense, punctuation is also taken into consideration.[2]

The present study uses a simplified and easily quantified definition of word juncture. In Latin, it can make a difference metrically if a word ends with a vowel, a final -m, or some other consonant; similarly, it can make a difference if the following word begins with a vowel (or h-) or with a consonant (including j- and v-). We thus distinguish three forms of final letter: final consonant, final -m, and final vowel, and two forms of initial letter: initial consonant, and initial vowel. Given these distinctions, we arrive at six different forms of word juncture: 'cc' (final consonant followed by initial consonant), 'cv' (final consonant followed by initial vowel), and so on, i.e., the six possible junctures are 'cc', 'cv', 'mc', 'mv', 'vc', and 'vv'.

Our goal is to see whether and to what extent the distribution of word junctures in prose differs from their distribution in hexameter poetry. We suspect that there is a different 'feel' to the ends of sentences or of phrases or of lines of

[1] The ready availability of large amounts of Latin prose and poetry in machine-readable form on the Packard Humanities Institute compact disk allows the investigation of countable problems with ease. We use this resource on the Ibycus Scholarly Computer.

[2] Much punctuation is the result of an editor's decision, and therefore we have ignored commas on the grounds that these are very vulnerable to editorial whim. On the other hand, we assume the closures of sense represented by strong punctuation will be generally agreed upon, even though one editor's semicolon may be another's period, etc. We avoid this difficulty by not differentiating between 'strong' punctuation marks: period, colon, semicolon, question mark, and exclamation point.

verse, as opposed to the flow of discourse in mid-sentence, and we conclude that we find some evidence for that difference in our inspection.[3]

We begin by testing an initial assumption that sizable Latin texts, whether poetry or prose, tend to have standard and stable proportions of the sorts of initials and finals we have described. We also advance the hypothesis that the effects of the formal constraints of the hexameter will be detected in deviations from the findings for prose.

## I. Poetry vs. prose

The passages were selected from widely separated periods and from different genres. The ten prose passages chosen are listed in Table 1a with prefixed 4-letter abbreviations, the total number of word junctures in each, and the number of punctuated junctures.[4]

The ten passages in dactylic hexameter (hereafter simply termed poetry) are similarly listed in Table 1b, with the number of all junctures and all punctuated junctures. Given the additional features of poetry, the table also contains the total number of junctures occurring between successive verses, the number of such with punctuation, the total number of medial junctures, and the number of these with punctuation.

In Table 2a we list the percentages of occurrence of the six forms of junctures in the prose passages. Since we make comparisons between texts of differing sizes, percentages are more useful than 'raw' data. For convenience, we also list the unweighted means of these percentages, and the 'high' and 'low' for each form of juncture. In Table 2b, we do the same for the junctures in the poetry passages, i.e., we treat these passages as if they were prose, without differentiating between medial and line junctures.

Inspection of the tables reveals that all the poetry passages have smaller percentages of 'mv' and 'vv' than any of the prose passages. Similarly, all the poetry passages have a larger percentage of 'vc' than any of the prose passages. Our first query is answered: poetry and prose differ markedly with regard to these three forms of juncture.

We can at once understand the lower percentages of 'mv' and 'vv' in poetry as due to the avoidance of ecthlipsis and elision. It is not at all clear why poetry should differ so decisively in the case of 'vc'. Even if we surmise, correctly, that 'vc' is a handy juncture to have available to suit the constraints of the meter, it is no handier than 'cv'. Yet Quintilian, Seneca, and Tacitus' *Dialogus* have

[3] We know that in antiquity attention was explicitly given to the grouping of words in Latin. Matters of intonation and cadence are surveyed very usefully in Maurice P. Cunningham, "Some Phonetic Aspects of Word Order Patterns in Latin," *Proceedings of the American Philosophical Society* 101 (1957) 481–505 and in Thomas N. Habinek, *The Colometry of Latin Prose* (Univ. of California Publications, Classical studies, v. 25 [1985]).

[4] There was no attempt to edit the texts on the Packard Humanities Institute Compact Disk (Demonstration CD Rom #1, Copyright 1987) save that initial 'i' and 'u' preceding another vowel were converted to 'j' and 'v', and monoliterals immediately followed by periods (representing *praenomina*) were omitted. Thus, editorial conventions may have slanted results in various ways. However, given the exploratory nature of our enterprise, more refined editing was not necessary.

higher percentages of 'cv' than do Catullus, Persius, or Silius, and we conclude that prose and poetry do not differ markedly in their percentages of 'cv'.

We pursue the matter by considering the following issue. One may hold that even if the ordering of words is changed in poetry to comply with the constraints of the meter, nonetheless the overall store of words with particular sorts of initials and finals may not differ from the store employed in prose. We investigate this issue by extracting from the data listed in Tables 2a and 2b the percentages of occurrence of the three sorts of final letter and the two sorts of initials. (Thus, e.g., the percentage of final consonant, 'fc', in Cato is found by summing the percentages of 'cc' and 'cv', i.e., 28.14 + 13.23 = 41.37). Table 3a lists the percentages of these for the prose works and Table 3b lists the percentages for the poetry passages.

Here inspection shows, first, that all the poetry passages have a lower percentage of final -m than any of the prose passages.

Second, the percentages of final consonants in prose and poetry have about the same range, from about 41 to 51 percent. Concomitantly, final vowels in poetry have a higher range than in prose but there is considerable overlap.

Finally, the poetry passages generally have higher percentages of initial consonant than the prose passages. Cato and Lucretius are the only cases of overlap. Since initial consonants and vowels sum to 100 percent, initial vowels reflect the same distinction: all poetry passages (save Lucretius) have lower percentages of initial vowels than any of the prose passages (save Cato).

Our hypothesis that prose and poetry employ the same store of words (or more exactly, the same store of types of word initials and finals) proves to be false. Poetry differs markedly from prose in the overall frequencies of some of the component types of final and initial letters.

These differences in total store, however, do not suffice. There are also differences in disposition and it is these which we now examine.

## II. Deviations from a Random Model

Given the fact that initial consonants and, to a lesser extent, final vowels are more frequent in poetry than in prose, we shall not be surprised to find that their combination, 'vc', is more plentiful in poetry than in prose.[5] We examine the matter with greater precision by concocting a 'random model' to calculate what percentage of junctures of a particular sort we expect to occur under a simple-minded assumption.[6]

[5] The following may occasion surprise: given the fact that the frequencies of final consonants are about the same in poetry and in prose and the fact that initial vowels are decidedly less frequent in poetry than in prose, we might conclude that their combination, 'cv' will occur less frequently in poetry than in prose, but that is not the case. As we have seen in Tables 2a and 2b, 'cv' is more frequent in poetry (mean = 20.35%) than in prose (mean = 17.27%).

[6] The construction of such models and the use of statistical measures has been discussed in Nathan A. Greenberg, "Aspects of Alliteration: A Statistical Study," *Latomus* 39:3 (1980) 585–611 and "Metrics of the Elegiac Couplet," *CW* 80:4 (March-April, 1987) 233–42.

Taking, for example, the data for the total number of final vowels and the total number of initial consonants in a particular passage as given and assuming (for purposes of the model) that initials and finals are randomly combined, we simply multiply the percentages listed. Thus, for Tacitus' *Annales* 1 (TACA) we multiply the percentage of final vowels in the text as a whole (35.25% or 0.3525) by the percentage of initial consonants in the text as a whole (0.6619) and get an expected estimate of 0.2333 or 23.33% for 'vc'. As we see in Table 2a, the actual percentage of 'vc' in TACA is 24.17%. The deviation between these two (i.e., actual percentage minus estimated percentage) is 0.84.

Comparative data for 'vc' in the prose and poetry passages are given in Table 4. Without exception, the deviations for poetry are of greater magnitude than those for prose and we conclude that the random combination of the components produces much better estimates for prose than for poetry. The mean of the *estimated* percentages of 'vc' for poetry (29.59%) is about 6 percentage points larger than that for prose (23.57%). This is due to the higher percentages of the relevant components in poetry. Note, however, that the mean of the *actual* percentages in poetry (35.32%) is about 11 percentage points higher than that for prose (24.83%). In other words, about one half of the actual difference between poetry and prose is due to the differing sets of components that produce the respective models of estimation, and the other half to the differing magnitudes of deviation from the random models based on those components.

The random model, then, allows us to attach specific magnitudes to each of these two sorts of differences. We can now divide observed differences between those occasioned by the differing sets of components and those due to deviations from the random models based upon those sets of components. The finding of a sizable deviation from the model in poetry should not occasion much surprise; we expect deviations from the random model in poetry because of metrical constraints.

What may be more surprising is the presence of similar deviations in prose. They are not so great in magnitude (they raise the mean of the percentages of 'vc' in prose only one percentage point) but with the very significant exceptions of Livy and Cato, they are there.[7] In all these passages, save for the exceptions noted, we find more cases of 'vc' than predicted by our random model.

Much of the mystery is dispelled by the fact that deviations from the random model do not occur in isolation. Just as a relative scarcity of initial vowels must indicate a relative abundance of initial consonants, a surplus of 'vc' beyond the estimate produced by the random model must necessarily be matched by an equal deficit of 'vv', i.e., fewer cases of 'vv' than predicted.[8]

[7] Note especially the large deviation for Cicero's *pro Archia* (st CICA), where the random model's estimate of 23.30% for 'vc' is raised to an actual 25.89%. (In 'raw' data, an estimated 721.93 is raised to a hefty actual 802.) In other words, it is not unreasonable to conclude that Cicero, in the *pro Archia* (despite the lack of metrical restraints), has a marked deviation, bias, or tendency toward 'vc' rather similar to that found in poetry.

[8] Thus, in Cicero's *pro Archia*, the estimate of 411.07 cases of 'vv' is replaced by an actual 331. The deviation amounts to a positive 80.07 for 'vc' and a negative one of -80.07 for 'vv'.

The model is based on a 3 x 2 tableau of estimates generated by the marginal values of the inputs as follows:

| | 'ic' | 'iv' |
|---|---|---|
| 'fc' | 'cc' | 'cv' |
| 'fm' | 'mc' | 'mv' |
| 'fv' | 'vc' | 'vv' |

As a result, a negative deviation produced in any cell is matched by an equal positive deviation in the cell in the same horizontal row. Here, for example, is the tableau for st TACA in 'raw' values rather than percentages:

Tacitus, *Annales* 1 (st TACA)

| | 'ic' | 'iv' | |
|---|---|---|---|
| fc' | cc 3306<br>(3307.70)<br>-1.70 | cv 1691<br>(1689.30)<br>1.70 | 4997 |
| 'fm' | mc 1196<br>(1284.16)<br>-88.16 | mv 744<br>(655.84)<br>88.16 | 1940 |
| 'fv' | vc 2590<br>(2500.14)<br>-89.86 | vv 1187<br>(1276.86)<br>89.86 | 3777 |
| Totals | 7092 | 3622 | 10714 |

Estimates are derived from the product of horizontal and vertical totals divided by the grand total. Thus, for the cell on the upper left, 'cc', the estimate (in parentheses) is the product of the total for 'fc', 4997, and the total for 'ic', 7092, divided by the grand total, 10714:

4997 x 7092 / 10714 = 3307.70.

The deviation (actual value minus estimated value) for 'cc' is -1.70. This is mirrored by the positive 1.70 in the cell for 'cv' to the right.

For comparative purposes, percentages of the total number of junctures involved rather than actual figures are used throughout. Here is the same tableau in percentage form:

Tacitus, *Annales* 1 (st TACA) in percentages. N = 10714

| | ic | iv | |
|---|---|---|---|
| fc | cc 30.85<br>(30.87)<br>0.02 | cv 15.79<br>(15.77)<br>0.02 | 46.64 |
| fm | mc 11.17<br>(11.99)<br>0.82 | mv 6.94<br>(6.12)<br>0.82 | 18.11 |
| fv | vc 24.17<br>(23.33)<br>0.84 | vv 11.08<br>(11.92)<br>0.84 | 35.25 |
| Totals | 66.19 | 33.81 | 100.00 |

The model does not allow us to designate one deviation as more meaningful than the other, but the avoidance of hiatus in prose, like the avoidance of elision in poetry, has long been noted and it is not a great leap of faith to associate our findings with that avoidance.

The cases of Livy and Cato (where the random models fit very well) are important because they suggest that our random model is not unreasonable as a description of what can happen in the Latin language. Further, we know from Table 3a that the total percentages of final vowel and initial vowel in Livy are close to the means. Hence, we conclude that there is no evidence whatever for the avoidance of hiatus in Livy. The case for Cato is a little different since he has the lowest percentage of initial vowels found in our prose passages. On the other hand, his percentage of final vowels is higher than all our prose authors except Sallust and so we may conclude that here too there is no avoidance of hiatus.

It should be clear that only minimal claims are made here for the random model.[9] It simply allows us to see what the distribution of phenomena in the text would be like if they were randomly combined without bias, i.e., if final vowels were followed by the same proportion of initial consonants as appear in the work as a whole. It is no more than a measure, but as we look at passage after passage and compare the degree to which each deviates from its model, we achieve a comparative stance which yields insight of a sort.

All the data of the sort we have been discussing thus far are presented in Tables 5a and 5b. As an example, consider the entry for Tacitus' *Annales* 1 in Table 5a:

| | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|
| st TACA | 46.64 | 18.11 | 35.25 | 66.19 | -0.02 | -0.82 | 0.84 | 10714 |

('st' is the prefix for all junctures in prose; 'fc' = percentage of final consonants; 'fm' = percentage of final m; 'fv' = percentage of final vowels; 'ic' = percentage of initial consonants. The rightmost entry 'N' is the actual number of junctures at issue. The three entries to the right preceding 'N' are the deviations for the combinations of 'cc', 'mc', and 'vc'. Note that the deviations come in pairs: one finds 'dcv', 'dmv', and 'dvv' by reversing respectively the signs for 'dcc', 'dmc', and 'dvc'. Thus the deviations for st TACA (all junctures in Tacitus *Annales* 1) are:

'dcc = -0.02; 'dcv' = +0.02;
dmc' = -0.82; 'dmv' = +0.82;
dvc' = +0.84; 'dvv' = -0.84.

From the above array, it can be seen that the bulk of the deviations in TACA are almost equally split between the combinations that contain final -m ('fm') and those that contain final vowel ('fv').

The deviations from the model in poetry are much larger. As an example, we extract from Table 5b the data for the first book of Horace's *Epistles*:

[9] See Appendix 4 on the topic of statistical procedures.

| | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|
| pt HEP1 | 50.31 | 11.78 | 37.91 | 72.67 | -9.04 | 1.47 | 7.57 | 6692 |

On the basis of these, we can, for example, derive the raw data for the combination 'vv' , i. e., the estimate 693.39 and the actual number 187.[10] The disparity between these is very large. We already know from Table 2b that HEP1 has the lowest percentage of 'vv' of any of our passages. We can now say that Horace's avoidance of elision is extraordinary and the nature and degree of that avoidance can now be described more precisely. As we see from Table 5b, Horace does not have an unusually low percentage of initial vowels. The percentage of final vowels is the lowest in the poetry passages, but Juvenal is very similar here. Horace differs most markedly from the rest in his avoidance of the juxtaposition of the initial and final vowels present in his work.

If we now look at all the deviations in Tables 5a and 5b, an unexpected difference between poetry and prose emerges. All the poetry passages have negative deviations for 'cc', 'mv', and 'vv' and the corresponding positive deviations for 'cv', 'mc', and 'vc'. With the exception of Cato and Livy, the prose passages also have negative (if mild) deviations for 'cc' and 'vv'. When we turn to 'mv', however, we see that all the prose passages (with the exceptions of Quintilian and Seneca) reverse the trend found in poetry and have curious positive deviations or biases toward 'mv' as opposed to the unanimous negative deviations for 'mv' in poetry.

We found above that the largest disparity in components between poetry and prose had to do with final -m. Our most surprising finding in the deviations from the random model also involves that same final letter. Perhaps there was some feeling that the avoidance of 'mv' was a poetic trait which good prose should not possess, just as good prose was not supposed to exhibit regular meter.[11]

[10] We derive the estimated and actual 'raw' values of 'vv' for HEP1 as follows:
The proportion with final vowel ('fv') is 0.3791 (37.91%).
The proportion with initial vowel ('iv') is 100% – 72.67% or 0.2733 (27.33%).
The estimated proportion of 'vv' is the product:

0.3791 x 0.2733 = 0.1036 or 10.36%.

The deviation 'dvv' is -7.57.
Add the deviation, negative in this instance, to the estimated percentage and we get the percentage of actual 'vv':

10.36% – 7.57% = 2.79% or 0.0279.

The number 'N' of all junctures is 6692.
The estimated number of 'vv' is: 6692 x 0.1036 = 693.39.
The actual number of 'vv' is: 6692 x 0.0279 = 187.

[11] On the latter point, cf. e.g., Quintilian, *Inst.* 9.4.72:

> Versum in oratione fieri multo foedissimum est totum, sed etiam in parte deforme, utique si pars posterior in clausula deprehendatur aut rursus prior <in> ingressu.

## III. Line vs. medial junctures

Finer distinctions must now be drawn. We turn first to the poetry passages for the distinction between medial junctures ('mt') and line junctures ('lt') . The data for medial junctures in poetry are listed in Table 5c and for line junctures in Table 5d. Since the vast majority of the junctures in poetry are medial, it is not surprising that Tables 5b (for all junctures in poetry) and 5c (for medial junctures) are very similar. It will be of more interest to inspect the data for line junctures where metrical constraints do not apply.

For convenience of comparison, here, extracted from Tables 5a, 5b, 5c, and 5d, are the unweighted means for all junctures in prose, all junctures in poetry, and the subdivisions of the latter, medial junctures and line junctures:

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) |
|---|---|---|---|---|---|---|---|---|
| prose | mean | 46.04 | 17.46 | 36.51 | 64.46 | -0.87 | -0.40 | 1.27 |
| poetry | mean | 47.99 | 10.74 | 41.26 | 71.56 | -6.69 | 0.93 | 5.76 |
| medial | mean | 47.76 | 10.14 | 42.10 | 72.61 | -7.63 | 1.07 | 6.56 |
| line | mean | 49.21 | 14.00 | 36.79 | 65.94 | -1.38 | 0.36 | 1.02 |

We have two preliminary hypotheses: either (1) line junctures, given the lack of metrical constraint, will resemble prose junctures, or (2) given the deviations of medial junctures from the random model, line junctures will deviate in the opposite direction in a sort of compensatory manner.

First we note that the deviations of the line junctures are similar to those of prose in their magnitude, witness to the predictable lack of metrical constraint in the line junctures. Note, however, the reversal of signs for 'dmc(-dmv)'; the positive deviations toward 'mv' which we have remarked in prose are not shared by the line junctures of poetry (with the exceptions of Juvenal and Lucan). Instead the line junctures of poetry share the aversion (though much slighter) found in the medial junctures of poetry.

This is quite startling, since we have hypothesized quite the contrary, i.e., that, since the medial junctures contain a bias against 'mv', the line junctures in a sort of compensatory manner would contain at the very least the sort of bias toward 'mv' found in prose. That is not the case.

When we compare the means of the components, we see that none of the prose means holds a position between the means for medial and line junctures. At the very least, our second hypothesis about compensatory distributions in the line junctures does not hold.

Line junctures have a larger percentage of final consonants ('fc') than medial junctures which in turn have a larger percentage than prose. Once again, line junctures do not abide by our hypothesis that they will resemble prose. As an additional complication, we also account for the higher percentage of final consonants in line junctures by pointing out that a large proportion of the line junctures in poetry are punctuated, but this remains to be discussed below.

The matter of 'fm' is also interesting. Punctuation plays a part here as well, but at this point we surmise that an avoidance of 'fm', in comparison with the usage in prose, is characteristic of poetry as a whole including line junctures.

In general, our most important finding here is that the line junctures in poetry do not differ from the medial junctures of poetry as much as we had expected. Our hypothesis was that poets would exploit the freedom from metrical constraint at line-end. This proves not to be the case. Apparently, the habits poets develop to comply with meter in the midst of the line do not simply disappear at line-end; some persist and the predicted opportunities for compensation vs. the constraints of the meter are not exploited.

## IV. Punctuated vs. Unpunctuated Junctures

The distinction between punctuated and unpunctuated junctures applies to both prose and poetry[12] and so we begin once again with prose. The components and deviations for unpunctuated junctures in prose ('su') are presented in Table 6a1 and for punctuated junctures ('sp') in Table 6a2. The latter reveals the extraordinarily anomalous percentages of Cato for punctuated final consonants and final vowels. (Only the percentage of punctuated final -m lies within

[12] We can derive a measure of mean sentence length (or at least the mean punctuated sense unit length) from the data in Tables 1a and 1b. What follows is a ranked list of the prose (s) and poetry (p) passages with the mean number of junctures per punctuated juncture:

| | | | st/sp or pt/pp |
|---|---|---|---|
| 1 | s | CICA | 21.82 |
| 2 | s | TACD | 21.58 |
| 3 | p | LV3L | 20.07 |
| 4 | p | CA64 | 18.11 |
| 5 | s | QUTL | 17.99 |
| 6 | s | CBG1 | 17.56 |
| 7 | s | SALJ | 16.60 |
| 8 | s | LIV1 | 14.31 |
| 9 | p | LU10 | 14.21 |
| 10 | p | VFL1 | 14.15 |
| 11 | s | TACA | 13.86 |
| 12 | p | SILI | 13.68 |
| 13 | s | SEND | 13.47 |
| 14 | p | VAN1 | 13.20 |
| 15 | p | STA1 | 12.46 |
| 16 | p | JUVL | 12.19 |
| 17 | p | HEP1 | 12.04 |
| 18 | s | CIA1 | 11.16 |
| 19 | p | PERS | 10.44 |
| 20 | s | CATO | 9.76 |

Predictably, Cato has the shortest sentences, Cicero the longest. Note the divergences between the individual works of Cicero (ranks 1 and 18) and of Tacitus (ranks 2 and 11). Sentence length alone is not a good test of authorship.

reasonable bounds.) We therefore omit the data for punctuated Cato in comparing the means for the various categories of prose:

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) |
|---|---|---|---|---|---|---|---|---|
| All junctures | Mean | 46.04 | 17.46 | 36.51 | 64.46 | -0.87 | -0.40 | 1.27 |
| Unpunctuated | Mean | 44.81 | 18.04 | 37.15 | 64.36 | -0.89 | -0.42 | 1.31 |
| Punctuated | Mean | 66.66 | 9.55 | 23.79 | 66.42 | -0.93 | 0.14 | 0.79 |

As we know from Table 1a, the great majority of junctures in prose are unpunctuated. Hence, we expect and find great similarity between the data for all junctures and for unpunctuated junctures. The interesting changes appear when we look at the means for punctuated junctures. The mix of final letters is vastly changed: final consonants are up by about 20 percentage points and final -m is reduced to a mean reminiscent of the medial junctures of poetry. Final vowels are also reduced far below anything we have thus far seen in prose.

Aside from final components, however, little differentiation can be made between punctuated and unpunctuated junctures in prose. The readings for initial components are inconclusive and differences in deviations from the random models are relatively slight.[13]

In prose, in sum, the major differences between punctuated and unpunctuated junctures are seen in the percentages of the final components. These percentages differ to such a degree that they account for the vast bulk of the discerned differences in distribution between punctuated and unpunctuated junctures in prose. These are listed by individual prose passage in Table 7a. Inspection reveals that all the prose passages have markedly larger percentages of punctuated 'cc' than of unpunctuated 'cc', save for the anomalous Cato. The divergence is particularly large in Quintilian and Tacitus.[14]

[13]Tables 6a1 and 6a2 reveal that the prose bias toward 'mv' is retained, as expected, in unpunctuated junctures. It is weakened or reversed in the punctuated junctures, save for Cato where, curiously, we find our strongest recorded deviation toward 'mv' in any prose passage. See note 14 below.

[14]There are higher percentages of unpunctuated 'vc' and 'vv' in all the passages save Cato. Unpunctuated 'mv' has a higher percentage in all passages, but the data for punctuated 'mv' are scanty in two of the passages. Note the estimated and actual numbers (not percentages) of 'mv' among the punctuated junctures of prose:

| | mv # actual | (mv #) (estimate) |
|---|---|---|
| CATO Cato, *de Agri Cultura*, all | 65 | (47.94) |
| CBG1 Caesar, *de Bello Gallico*, bk 1 | 13 | (14.48) |
| CIA1 Cicero, *ad Atticum*, 1–43 | 47 | (50.71) |
| CICA Cicero, *pro Archia*, all | 7 | (7.40) |
| LIV1 Livy, *ab Vrbe Condita*, 1.1–59 | 46 | (41.82) |
| QUTL Quintilian, *Institutio Oratoria*, bk 1 | 16 | (19.54) |
| SALJ Sallust, *Iugurtha*, 1–80 | 18 | (21.11) |
| SEND Seneca, *Dialogi*, bks 1–2 | 29 | (28.84) |
| TACA Tacitus, *Annales* 1 | 9 | (9.78) |
| TACD Tacitus, *Dialogus de Oratoribus*, all | 21 | (19.63) |

When we turn to poetry in Tables 6b1 and 6b2, at first sight the differences between punctuated and unpunctuated junctures do not seem as striking as they are in prose. Here are the means for the various categories in the poetry passages:

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) |
|---|---|---|---|---|---|---|---|---|
| All junctures | Mean | 47.99 | 10.74 | 41.26 | 71.56 | -6.69 | 0.93 | 5.76 |
| Unpunctuated | Mean | 47.36 | 10.71 | 41.93 | 71.78 | -6.95 | 0.96 | 6.00 |
| Punctuated | Mean | 56.14 | 11.11 | 32.75 | 68.88 | -3.06 | 0.58 | 2.47 |

The percentage of final consonants, 'fc', goes up in the punctuated junctures ('pp') and the percentage of final vowels, 'fv', goes down, but not to the degree we find in prose. The percentage of final -m, 'fm', hardly changes at all, in contrast to prose. Note that the deviations are about halved. This last curious finding (with no similar occurrence in prose) is to be associated with the fact that a significant fraction of the strong punctuations in poetry occur at the line junctures where there are no metrical constraints, and, hence, this fraction of punctuated junctures will not participate in the deviations from the model associated with medial junctures.

We now refine our inspection by including the important distinction between medial and line junctures in poetry. This distinction is further complicated because individual differences in the distribution of punctuated junctures between medial and line junctures become important. As we see from Table 1b, only 9 of the 133 punctuated junctures in Catullus occur medially.[15] In stark

The deviations are modest save for CATO where there is a positive penchant for punctuated 'mv'. Instances in CICA and TACD are few enough to be listed. The passages from the *pro Archia* (CICA):

| | |
|---|---|
| est certum quid respondeam. Ego multos homines | 15.4 |
| valuisse doctrinam. Atque idem ego | 15.9 |
| neque locorum; at haec studia adulescentiam | 16.12 |
| defendendum putem? atque sic a summis | 18.10 |
| posteritate adaequandam. An vero omnia | 30.1 |
| expressam et politam? Ego vero omnia | 30.9 |
| memoriam sempiternam. Haec vero sive | 30.11 |

The passages from the *Dialogus* (TACD):

| | |
|---|---|
| toto pectore incumbam.' 'Adeo te tragoediae | 3.3.6 |
| colam.' 'Ego vero' inquit | 4.2.6 |
| splendidissimorum hominum? idque scire non | 6.2.4 |
| propitiare, suam experiri liberalitatem! adice... | 9.6.1 |
| studium. effervescit enim vis pulcherrimae | 10.6.1 |
| orationum gloria partum. ac iam me deiungere | 11.2.6 |
| nec mirum; erant enim haec nova | 19.4.1 |
| sed plane post Gabinianum? at ego non | 26.9.3 |
| consecutum. his accedebat splendor | 37.4.1 |

[15] The instances in CA64 are so few that they may be listed outright:

heroes, salvete, deum genus! o bona matrum 23
ipse suum. Theseus pro caris corpus Athenis 81
consilium? tibi nulla fuit clementia praesto, 137
nam quo me referam? quali spe perdita nitor? 177
Idaeosne petam montes? at gurgite lato 178
an patris auxilium sperem? quemne ipse relique 180
nulla fugae ratio, nullast spes: omnia muta, 186
non vacuus: namque ille tulit radicitus altas 288
veridicum oraclum: sed vos, quae fata sequuntur, 326

Other instances of rare types of punctuated medial juncture:

Horace

vv porrigere: 'hic multum in Fabia valet, ille Velina; 6.52
vv certare.' Eutrapelus cuicumque nocere volebat 18.31
mv me tibi, si cenas hodie mecum.' 'ut libet.' 'ergo 7.70

Juvenal

vv ingenium par materiae? unde illa priorum 1.151
vv quis melior plorante gula? ergo omnia fiunt, 5.158
mv lanternam; illud enim uestris datur alueolis quod 5.88

Lucretius

mc praesidium. misero misere" aiunt "omnia ademit 898

Persius

mv O curas hominum! o quantum est in rebus inane! 1.1
mv laudatur: 'bellum hoc.' hoc bellum? an, Romule, ceues? 1.87
vv en pallor seniumque! o mores, usque adeone 1.26
vv Iliade. audaci quicumque adflate Cratino 1.123
vv hunc cuinam? cuinam? uis Staio? an scilicet haeres? 2.19
vv unus ait comitum. uerumne? itan? ocius adsit 3.7
vv iure; etenim id summum, quid dexter senio ferret, 3.48
vv 'liber ego.' unde datum hoc sumis, tot subdite rebus? 5.124

Silius

vv sibila; inaccensi flagrant altaribus ignes. 1.95
vv insignis Rutulo Murrus de sanguine; at idem 1.377

Statius

vv auguria! expavit vitreo sub gurgite remos. 1.26
vv virginea; o multum steriles damnatus in annos 1.800
vv dasne? an gens humilis tibi degeneresque videmur? 1.901
mv dona deum; ereptum superis Mars efferat aurum. 1.425

Vergil

mv nauibus (infandum!) amissis unius ob iram 1.251
vv posthabita coluisse Samo. hic illius arma, 1.16
vv bella gero. et quisquam numen Iunonis adorat 1.48
vv contigit oppetere! o Danaum fortissime gentis 1.96
vv corda uolente deo; in primis regina quietum 1.303
vv et uera incessu patuit dea. ille ubi matrem 1.405
vv laetitiaque metuque; auidi coniungere dextras 1.514

contrast, 139 of the 248 punctuated junctures in Lucan, a healthy majority, occur medially, and apart from Lucretius, punctuated medial junctures comprise robust proportions of all the punctuated junctures in the poetry passages.[16]

Data for punctuated and unpunctuated line and medial junctures in poetry are listed in Tables 6c1-6d2. Here are the means for the various categories (we omit Catullus in the calculation of the mean for punctuated medial junctures because Catullus has so few that their inclusion in the mean is misleading):

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) |
|---|---|---|---|---|---|---|---|---|
| mt | Mean | 47.76 | 10.14 | 42.10 | 72.61 | -7.63 | 1.07 | 6.56 |
| mu | Mean | 47.26 | 10.19 | 42.56 | 72.55 | -7.67 | 1.05 | 6.62 |
| mp | Mean | 64.02 | 7.33 | 28.64 | 73.25 | -6.18 | 1.50 | 4.69 |
| lt | Mean | 49.21 | 14.00 | 36.79 | 65.94 | -1.38 | 0.36 | 1.02 |
| lu | Mean | 48.00 | 14.69 | 37.32 | 66.25 | -1.48 | 0.51 | 0.97 |
| lp | Mean | 52.36 | 12.69 | 34.95 | 65.16 | -1.13 | 0.06 | 1.07 |

vv permittit patria? hospitio prohibemur harenae; 1.540
vv hospitia: haud tanto cessabit cardine rerum. 1.672

Valerius

mv abripiam? invisae Pelias freta tuta carinae 1.154
vv pulvere; at interea clari decus adiacet orbis 1.452

[16] The data (excerpted from Table 1b) ordered by percentage:

| | | pp | mp | (mp/pp)*100 |
|---|---|---|---|---|
| CA64 | Catullus 64 | 133 | 9 | 6.77 % |
| LV3L | Lucretius 3 | 367 | 34 | 9.26 |
| VAN1 | Vergil, *Aeneid* 1 | 370 | 102 | 27.57 |
| SILI | Silius Italicus 1 | 313 | 92 | 29.39 |
| HEP1 | Horace, *Epistulae* 1.1–20 | 556 | 189 | 33.99 |
| VFL1 | Valerius Flaccus 1 | 396 | 178 | 44.95 |
| JUVL | Juvenal 1–5 | 527 | 237 | 44.97 |
| STA1 | Statius, *Achilleis* 1 | 493 | 228 | 46.25 |
| PERS | Persius 1–6 | 428 | 212 | 49.53 |
| LU10 | Lucan 10 | 248 | 139 | 56.05 |

The low percentages of medial punctuated junctures in Catullus and Lucretius seem to be an indication of early date. The percentage in Silius (SILI) is quite close to that found in Vergil (VAN1). It is also worth noting that Lucan (LU10), despite the large number of medial punctuated junctures, has no cases of punctuated medial 'mv', a characteristic shared with the passages from Catullus, Lucretius, and Silius. Further, there are no cases of punctuated medial 'vv' in the Lucan passage although even the Lucretius passage has four of these:

corpoream docet esse. ubi enim propellere membra, 3.162
perquam corporibus factum constare. id ita esse 180
aut animam liquisse; ubi iam trepidatur et omnes 598
accidere. id quoniam mors eximit, esseque probet 864

As in the case of prose, the vast majority of medial junctures is unpunctuated and the differences between all medial junctures ('mt') and unpunctuated medial junctures ('mu') are insignificant. On the other hand, a very healthy proportion of line junctures are punctuated, so that the means for all line junctures ('lt') are located, as is to be expected, somewhere between the means for unpunctuated line junctures ('lu') and punctuated line junctures ('lp').

Turning first to unpunctuated and punctuated medial junctures, inspection of Tables 6c1 and 6c2 reveals that there is no overlap between the percentages of final consonant and final vowel. Here, punctuated medial junctures are clearly differentiated from unpunctuated medial junctures. This is a characteristic which medial junctures share with the junctures of prose. Even in the case of final -m, where there is some overlap, in all of the poetry passages, taken individually (see Table 7b), punctuated medial junctures have a lower percentage of final -m.

Aside from these final components, little differentiation can be made between punctuated and unpunctuated medial junctures. The data for initial components and deviations are mixed. Distributions for punctuated and unpunctuated medial junctures in each work are listed in Table 7b. Here again, as in the case of prose, the medial junctures of all the poetry passages (save Catullus) have markedly larger percentages of punctuated 'cc'.

The data for line junctures are presented in Tables 6d1 and 6d2 and 7c. Inspection soon makes it apparent that there are no reliable differentiators between those line junctures that are punctuated and those that are not. Line junctures lack the differentiations between final components which we have found in prose and in medial junctures. This is a most surprising finding. It is very striking that we are unable to discriminate between unpunctuated and punctuated line junctures on the basis of the percentages of their final components, whereas we can easily do so in the cases of the medial junctures of poetry and the junctures of prose. It is very surprising to find a resemblance between prose junctures and medial junctures which is not shared by line junctures.

Line junctures, medial junctures, and prose junctures all have peculiar natures of their own and we can now consider their similarities and differences. Note again the following means:

| | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) |
|---|---|---|---|---|---|---|---|
| su Mean | 44.81 | 18.05 | 37.15 | 64.36 | -0.89 | -0.42 | 1.31 |
| sp Mean | 66.66 | 9.55 | 23.79 | 66.42 | -0.93 | 0.14 | 0.79 |
| mu Mean | 47.26 | 10.19 | 42.56 | 72.55 | -7.67 | 1.05 | 6.62 |
| mp Mean | 64.02 | 7.33 | 28.64 | 73.25 | -6.18 | 1.50 | 4.69 |
| lu Mean | 48.00 | 14.69 | 37.32 | 66.25 | -1.48 | 0.51 | 0.97 |
| lp Mean | 52.36 | 12.69 | 34.95 | 65.16 | -1.13 | 0.06 | 1.07 |

It seems clear, first, that there is some linkage between the larger deviations found in medial junctures and their higher percentage of initial consonants.

Apparently, the constraints of the meter demand both the deviations from the model and a higher incidence of initial consonants. The presence or absence of punctuation is an irrelevant factor here. Line junctures resemble prose junctures in their smaller deviations and in their level of initial components.

Punctuation does make a big difference in the mix of final components for medial and prose junctures, but hardly any difference for line junctures. It is as though punctuation at the end of a line of verse does not need the support implicit in the lower percentages of 'fm' and 'fv' found in punctuated junctures in prose and in the punctuated medial junctures of poetry. This suggests that line endings do not need the reinforcement inherent in the differences found between punctuated and unpunctuated junctures elsewhere, presumably because a pause or cadence is present in any case.

The percentages of final -m in line junctures, whether punctuated or not, occupy a peculiar position midway between the extremes of punctuated and unpunctuated prose but higher than the limits of both punctuated and unpunctuated medial junctures in poetry. This suggests again that line junctures do not need the reinforcement found in the differentiation between punctuated and unpunctuated junctures in prose. It also suggests that line junctures share poetry's general avoidance of 'fm', with perhaps some compensation for the more extreme avoidance of 'fm' in medial junctures.

## Conclusions

We surmise that in Latin, as in English, cadences, pauses of intonation, and closures of sense are marked in various ways. We have presented here one approach to that complex matter and it seems to us a progressive step to have been able to differentiate in the aggregate between the junctures that occur at verse-ending, whether punctuated or not, and the punctuated and unpunctuated junctures that occur in prose or in the middle of the verse.

We have also shown a way to differentiate between the variations introduced by the store of words used by an author and the arrangement of that store of words, whether under metrical constraint or not. That there is a difference between prose and poetry has never been an issue; the quantifying of that issue opens new horizons in comparative assessment. For example, do our findings distinguishing prose and medial junctures correlate with a (favored?) placement of finite verbs at sentence-end in the former but not in the latter? Is there in fact a tendency to place finite verbs at sentence-end in prose and medially in poetry but not at the end of lines of poetry? There is much that we can now examine more precisely, including tendencies with regard to elision and hiatus in both prose and poetry.

The four appendices below extend matters in various directions. Appendix 1 is a cautionary note indicating the degree of variation to be found in a single large work. Appendix 2 is an anecdotal test of the method as applied to a naive division of a prose text into cola or sense units. Appendix 3 points the way toward the possibilities inherent in the extension of the methods described here to completely scanned metrical texts. Appendix 4 deals with our reluctance,

informed we hope, to employ statistical measures and indicators of inferential validity.

The statistical description of such details as the percentages of final -m in punctuated junctures as contrasted with their occurrences elsewhere is not calculated in itself to raise the esthetic pitch of any literary conversation.[17] Nonetheless, we are surely no worse off (the texts remain inviolate and open to more capable scrutiny) and we may be better off in possessing such information. We hope fondly that literary conversations of the sort we all value will be enhanced if conducted at a higher level of empirical awareness.

[17] It may be noted that Quintilian deplored the presence of final -m in Latin: "...nos illa quasi mugiente littera cludimus, in quam nullum Graece verbum cadit." *Inst.* 12.10.31.

## Appendix 1

The availability of texts on the PHI compact disk makes extension of the counts very easy. It may be of interest to see the degree of conformity present over the whole of the *Aeneid*. Here are results for punctuated and unpunctuated line and medial junctures for all twelve books of the work. There are some large disparities, particularly among the percentages for punctuated medial junctures.

Unpunctuated line junctures

| | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|
| lu VAN1 | 45.90 | 20.70 | 33.40 | 62.30 | -1.34 | 1.66 | -0.32 | 487 |
| lu VAN2 | 45.75 | 20.27 | 33.98 | 61.00 | -1.85 | 0.76 | 1.09 | 518 |
| lu VAN3 | 48.79 | 15.60 | 35.60 | 55.82 | -1.96 | 0.74 | 1.22 | 455 |
| lu VAN4 | 48.25 | 19.08 | 32.68 | 66.67 | -2.56 | -1.32 | 3.87 | 456 |
| lu VAN5 | 50.72 | 14.03 | 35.25 | 63.49 | -1.63 | 0.99 | 0.64 | 556 |
| lu VAN6 | 46.69 | 17.15 | 36.16 | 61.46 | -2.89 | 0.50 | 2.39 | 589 |
| lu VAN7 | 52.31 | 16.90 | 30.78 | 59.96 | -0.76 | 0.01 | 0.76 | 562 |
| lu VAN8 | 51.62 | 16.60 | 31.78 | 62.55 | -2.13 | 2.17 | -0.04 | 494 |
| lu VAN9 | 45.92 | 16.70 | 37.39 | 57.89 | -2.63 | 3.40 | -0.77 | 551 |
| lu VA10 | 48.57 | 13.66 | 37.77 | 59.19 | -0.58 | -0.16 | 0.74 | 593 |
| lu VA11 | 48.76 | 16.86 | 34.38 | 66.28 | 0.57 | -1.26 | 0.68 | 605 |
| lu VA12 | 48.56 | 16.93 | 34.50 | 65.34 | -0.10 | -0.20 | 0.30 | 626 |

Punctuated line junctures

| | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|
| lp VAN1 | 55.39 | 16.73 | 27.88 | 59.85 | -1.18 | -1.09 | 2.27 | 268 |
| lp VAN2 | 58.45 | 12.32 | 29.23 | 54.93 | -0.77 | 0.62 | 0.14 | 284 |
| lp VAN3 | 58.40 | 11.45 | 30.15 | 62.60 | -1.44 | 2.37 | -0.94 | 262 |
| lp VAN4 | 52.23 | 14.57 | 33.20 | 60.32 | -1.95 | -0.69 | 2.65 | 247 |
| lp VAN5 | 57.96 | 12.74 | 29.30 | 55.10 | -1.04 | -0.97 | 2.01 | 314 |
| lp VAN6 | 50.48 | 15.34 | 34.19 | 61.66 | -1.73 | -0.19 | 1.92 | 313 |
| lp VAN7 | 57.87 | 10.63 | 31.50 | 59.45 | -0.94 | -0.41 | 1.35 | 254 |
| lp VAN8 | 62.71 | 15.25 | 22.03 | 50.85 | 0.74 | -0.98 | 0.24 | 236 |
| lp VAN9 | 58.56 | 15.21 | 26.24 | 64.64 | 1.69 | 0.05 | -1.75 | 263 |
| lp VA10 | 56.55 | 12.14 | 31.31 | 55.27 | 1.65 | -1.60 | -0.05 | 313 |
| lp VA11 | 57.28 | 16.50 | 26.21 | 60.52 | 1.58 | 1.01 | -2.60 | 309 |
| lp VA12 | 60.68 | 15.17 | 24.15 | 55.11 | -0.62 | 2.17 | -1.54 | 323 |

Unpunctuated medial junctures

| | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|
| mu VAN1 | 46.18 | 10.81 | 43.01 | 69.76 | -7.20 | 0.89 | 6.32 | 4028 |
| mu VAN2 | 44.77 | 10.25 | 44.98 | 68.26 | -5.93 | -0.38 | 6.32 | 4235 |
| mu VAN3 | 42.82 | 11.73 | 45.45 | 68.86 | -6.34 | 0.19 | 6.15 | 3725 |
| mu VAN4 | 44.24 | 11.45 | 44.32 | 69.85 | -6.35 | 0.41 | 5.94 | 3748 |
| mu VAN5 | 47.48 | 9.75 | 42.77 | 68.93 | -6.74 | 0.35 | 6.39 | 4583 |
| mu VAN6 | 45.38 | 9.91 | 44.70 | 69.20 | -7.09 | 0.56 | 6.53 | 4821 |
| mu VAN7 | 44.78 | 10.12 | 45.10 | 68.77 | -6.61 | 0.23 | 6.39 | 4326 |
| mu VAN8 | 46.31 | 10.65 | 43.04 | 68.11 | -7.16 | 0.52 | 6.64 | 3822 |
| mu VAN9 | 45.32 | 10.89 | 43.80 | 68.89 | -7.21 | 0.60 | 6.61 | 4336 |
| mu VA10 | 48.28 | 10.12 | 41.60 | 68.88 | -7.22 | 0.85 | 6.37 | 4824 |
| mu VA11 | 46.35 | 10.53 | 43.12 | 66.65 | -6.93 | 0.55 | 6.38 | 4891 |
| mu VA12 | 46.00 | 10.14 | 43.87 | 67.95 | -6.57 | 0.20 | 6.37 | 5111 |

Punctuated medial junctures

| | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|
| mp VAN1 | 58.82 | 6.86 | 34.31 | 65.69 | -5.31 | 1.37 | 3.93 | 102 |
| mp VAN2 | 59.26 | 9.63 | 31.11 | 70.37 | -6.15 | 2.11 | 4.03 | 135 |
| mp VAN3 | 58.06 | 13.98 | 27.96 | 78.49 | -1.49 | -0.22 | 1.71 | 93 |
| mp VAN4 | 71.19 | 5.93 | 22.88 | 60.17 | -9.78 | 2.36 | 7.42 | 118 |
| mp VAN5 | 71.70 | 5.66 | 22.64 | 70.75 | -3.56 | 0.71 | 2.85 | 106 |
| mp VAN6 | 60.71 | 12.86 | 26.43 | 79.29 | -5.99 | 1.23 | 4.76 | 140 |
| mp VAN7 | 70.51 | 10.26 | 19.23 | 74.36 | -6.28 | 1.35 | 4.93 | 78 |
| mp VAN8 | 76.83 | 3.66 | 19.51 | 64.63 | -8.19 | 1.29 | 6.90 | 82 |
| mp VAN9 | 68.03 | 6.12 | 25.85 | 68.71 | -5.24 | 1.24 | 4.01 | 147 |
| mp VA10 | 62.50 | 7.14 | 30.36 | 69.05 | -8.04 | 2.21 | 5.82 | 168 |
| mp VA11 | 69.03 | 2.65 | 28.32 | 73.45 | -6.45 | 0.70 | 5.75 | 113 |
| mp VA12 | 76.30 | 3.70 | 20.00 | 75.56 | -3.57 | 0.91 | 2.67 | 135 |

## Appendix 2

It has always seemed to me that Latin is a more difficult language to read than Greek, and I have wondered why this should be the case. The lapidary character of Latin, the lack of all those little words so usefully present in Greek, has seemed to me to be a part of the difference. (It may be the pitch accent of Greek that necessitated the presence of those helpful little words.) It is hard to believe that Latin was really more difficult and I have thought a solution lies, perhaps, in an aspect of language that does not appear on the printed (or written) page. Silent reading may not have been customary in antiquity;[18] the reading aloud of Latin must have been accompanied by a reassuring set of pauses and cadences that surely made the language more readily comprehensible to the listener. (The fact that these pauses are not always indicated on the written page should not deter us; the lack of word-division in ancient manuscripts is equally startling.)

Accordingly, not long ago (when the text of Cicero's *pro Archia* became available on the PHI disk), I introduced line-endings and indentations so that phrases were placed on separate lines to point up the periodic structures and the parallelisms and ellipses of the text. This was done before the project of this paper was conceived and certainly before its results were known. Hence it was a matter of interest to me to see if that text, divided as it was into separated lines, would yield interesting results if submitted to the same analysis which has been used here for hexameter texts; i.e., would the line junctures differ from the medial junctures? Here are the results:

| | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|
| lt CICA | 52.24 | 18.45 | 29.31 | 64.59 | -1.99 | -0.11 | 2.10 | 737 |
| lu CICA | 48.58 | 19.20 | 32.22 | 64.44 | -2.26 | -0.18 | 2.44 | 599 |
| lp CICA | 68.12 | 15.22 | 16.67 | 65.22 | -0.95 | 0.22 | 0.72 | 138 |
| mt CICA | 41.59 | 19.57 | 38.84 | 63.49 | -1.80 | -0.99 | 2.79 | 2361 |
| mu CICA | 41.49 | 19.60 | 38.91 | 63.51 | -1.79 | -0.99 | 2.78 | 2357 |
| mp CICA | 100.00 | 0.00 | 0.00 | 50.00 | 0.00 | 0.00 | 0.00 | 4 |
| st CICA | 44.13 | 19.30 | 36.57 | 63.72 | -1.81 | -0.78 | 2.58 | 3098 |
| su CICA | 42.93 | 19.52 | 37.55 | 63.70 | -1.87 | -0.83 | 2.70 | 2956 |
| sp CICA | 69.01 | 14.79 | 16.20 | 64.79 | -1.05 | 0.28 | 0.77 | 142 |

Note that no claims are made for the validity of my division into lines beyond the fact that it was done before the idea of these counts was envisioned. Almost all punctuation is situated at the end of lines, as is to be expected. The major finding has to do with the 599 lines which do not end in punctuation as contrasted with the 2357 unpunctuated medial junctures:

| | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|
| lu CICA | 48.58 | 19.20 | 32.22 | 64.44 | -2.26 | -0.18 | 2.44 | 599 |

[18] The classical article on the subject is B. M. W. Knox, "Silent Reading in Antiquity," *GRBS* 9 (1968) 421–35.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| mu CICA | 41.49 | 19.60 | 38.91 | 63.51 | -1.79 | -0.99 | 2.78 | 2357 |

Sizable differences are found in the percentages of 'fc' and 'fv': the line endings have more of the former and less of the latter, echoing, although to a lesser degree, the tendencies more obvious in punctuated junctures. I find it curious that the unpunctuated line junctures have no diminution in the frequency of 'fm', but one cannot have everything.

## Appendix 3

More can be done with the nature of metrical constraint if one has completely scanned texts available in machine-readable form. As an example we append the distribution of medial junctures in Lucretius 3. Positions within the verse are signified by the number of preceding morae counting from the beginning of the verse. Thus, e.g., position 10 is located after the first syllable in the third foot, and, as we see below, medial juncture occurs more often here than anywhere else in the verse.

(Percentages sum horizontally to 100%.)

| Posit. | # of | cc | cv | mc | mv | vc | vv |
|---|---|---|---|---|---|---|---|
| | junctures | % | % | % | % | % | % |
| 2 | 536 | 45.71 | 17.54 | 9.89 | 2.99 | 9.14 | 14.74 |
| 3 | 149 | 0.00 | 40.94 | 0.00 | 1.34 | 43.62 | 14.09 |
| 4 | 519 | 5.39 | 41.81 | 4.24 | 3.08 | 32.37 | 13.10 |
| 6 | 728 | 38.65 | 13.07 | 17.61 | 1.51 | 18.43 | 10.73 |
| 7 | 147 | 0.00 | 31.97 | 0.00 | 0.00 | 63.27 | 4.76 |
| 8 | 238 | 13.03 | 32.35 | 4.20 | 6.30 | 24.79 | 19.33 |
| 10 | 975 | 36.55 | 14.48 | 18.48 | 0.92 | 26.18 | 3.39 |
| 11 | 75 | 0.00 | 36.00 | 0.00 | 0.00 | 48.00 | 16.00 |
| 12 | 290 | 27.24 | 22.76 | 14.14 | 2.41 | 25.52 | 7.93 |
| 14 | 689 | 39.68 | 11.77 | 15.41 | 3.63 | 23.84 | 5.67 |
| 15 | 20 | 0.00 | 60.00 | 0.00 | 0.00 | 30.00 | 10.00 |
| 16 | 673 | 26.15 | 24.52 | 14.86 | 1.78 | 28.83 | 3.86 |
| 18 | 90 | 36.67 | 13.33 | 3.33 | 4.44 | 12.22 | 30.00 |
| 19 | 516 | 0.00 | 16.47 | 0.00 | 0.00 | 76.36 | 7.17 |
| 20 | 556 | 0.18 | 46.94 | 0.00 | 0.00 | 49.46 | 3.42 |
| 22 | 67 | 46.27 | 13.43 | 2.99 | 1.49 | 31.34 | 4.48 |
| | | | | | | | |
| Medial | 6269 | 24.48 | 23.14 | 10.29 | 1.88 | 31.90 | 8.30 |
| Line | 1095 | 31.51 | 19.27 | 9.49 | 3.93 | 25.94 | 9.86 |
| All | 7364 | 25.55 | 22.55 | 10.17 | 2.19 | 31.00 | 8.53 |

Listings like this allow us to designate precisely where and how the metrical constraints of the verse contribute to the apportionment of the various sorts of junctures. Not only are there more junctures at position 10 than elsewhere, but 'mc' occurs proportionally more there than anywhere else.

As another example, we can examine the degree to which elision is avoided at different positions within the verse. Consider the 7 instances of 'vv' at position 7, after the first breve in the second foot. Here is a listing:

| | |
|---|---|
| nunc animam quoque ut in membris cognoscere possis | 117 |
| qui datus est, neque ea causa convellitur ipse, | 340 |
| res occurrere et effugium praecludere eunti | 524 |
| nec sine corpore enim vitalis edere motus | 560 |
| corporibus; neque enim poterunt subtiliter esse | 739 |
| vis animi, nisi erit consors in origine prima? | 771 |
| post mortem fore ut aut putescat corpore posto | 871 |

Of the 147 junctures occurring at this position, there are 47 instances of 'cv', 93 instances of 'vc', and the 7 instances of 'vv' listed above. The random model for this juncture would call for 36.7 instances of 'vv', a sizable deviation from what is found. The same model calls for 29.7 instances of 'cc', but of course the meter will not allow this. If we redistribute the inadmissible cases proportionally, the expected value for 'vv' becomes even larger. It would be possible to compare the degree of avoidance of elision at each position of the verse. More can be done in the formulation of a useful model and many more questions of equal interest and complexity would arise with comparative data.

## Appendix 4

Statisticians are not classicists and classicists are not statisticians, and it is the experience of the author that for the most part neither group has or seeks great insight into the problems of the other. While statisticians tend not to enter the inhospitable territory of the humanities, classicists in our present age of computerized statistical packages have begun to wield these complicated and poorly-understood paraphernalia with effortless abandon. It behooves classicists, our present audience, to enter statistical waters in very gingerly fashion. We have concocted here as simple-minded a model as possible because we believe it will be comprehensible to all, and, if it is misused or abused, that misuse will be apparent to all.

Language was long ago ably characterized by Gustave Herdan as an aspect of human behavior where choice and chance are mingled in wondrous fashion[19] and the resultant confusion is not yet dispelled. It therefore should occasion no surprise that simple models based upon random variation alone may prove inadequate.[20] Given our doubts about their appropriateness, we have avoided the panoply of tests used for rigorous statistical inference from sample to universe. We do not claim to have set forth a sample satisfactory for such purposes, particularly since the limits and the characteristics of the universe we deal with are unclear. Rather, in the present study we have inspected closely the differences between texts which, taken one by one, are of greater interest than the putative collective entity they comprise. In this sense, it matters not whether the differences we have found are the result of choice or chance; these differences characterize these texts.

In addition, the computer's capacity for the complete inspections of very large passages lessens the need for the rigorous move from sample to universe. Given the classicist's interest in particular texts and given their size, each of our passages may well constitute as much of a 'universe' as is useful in any meaningful way. Our purpose, then, is exact description rather than deceptively precise claims of inferential rigor.

To be sure, we allude to poetry and prose in general, but it should be understood that we are speaking only of the twenty passages under limited scrutiny here. It may be that our loose generalizing has some cogency which goes beyond the twenty passages here. Indeed we believe this to be true, but we have not demonstrated this truth, a very ambitious notion. If others more adept will be able to sort out the facts contained herein so as to extract more meaningful

[19] Gustave Herdan, *The Advanced Theory of Language as Choice and Chance* (Springer Verlag 1966). Note the following: "...statistical methods should be tailored to the real needs of the user, which often means giving up exactness for the sake of usefulness...While established techniques are important...knowing when to use them and when not to use them is more important" (10–11).

[20] The data in note 16 above can be subjected to the chi squared test resulting in a score of 156.68 for 9 degrees of freedom. The standard statistical tables inform us that the probability of obtaining a score as high as 21.666 by chance is less than 0.01, less than one chance in a hundred. The utility of this rigor is dubious. Would anyone believe that we are dealing here with a random distribution? But even if we were, the data would nonetheless be valid and valuable from a descriptive point of view.

results, no one will be more gratified than the author. We are engaged in a corporate endeavor. In the interim, what we have here is a humanistic attempt at persuasion and all, humanists and statisticians, should recognize this.

## TABLES

### Table 1a

The prose passages (4-letter abbreviations are prefixed):

| | | st | sp |
|---|---|---|---|
| CATO | Cato, *de Agri Cultura*, all | 16545 | 1696 |
| CBG1 | Caesar, *de Bello Gallico*, bk 1 | 8113 | 462 |
| CIA1 | Cicero, *ad Atticum*, 1-43 | 17991 | 1612 |
| CICA | Cicero, *pro Archia*, all | 3098 | 142 |
| LIV1 | Livy, *ab Vrbe Condita*, 1.1-59 | 16852 | 1178 |
| QUTL | Quintilian, *Institutio Oratoria*, bk 1 | 15907 | 884 |
| SALJ | Sallust, *Iugurtha*, 1-80 | 14542 | 876 |
| SEND | Seneca, *Dialogi*, bks 1-2 | 9359 | 695 |
| TACA | Tacitus, *Annales* 1 | 10714 | 773 |
| TACD | Tacitus, *Dialogus de Oratoribus*, all | 9298 | 431 |

st = all junctures in prose
sp = punctuated junctures in prose

### Table 1b

Poetry passages (with abbreviations)

| | | pt | pp | lt | lp | mt | mp |
|---|---|---|---|---|---|---|---|
| CA64 | Catullus 64 | 2426 | 133 | 407 | 124 | 2019 | 9 |
| HEP1 | Horace, *Epistulae* 1.1-20 | 6692 | 556 | 1005 | 367 | 5687 | 189 |
| JUVL | Juvenal 1-5 | 6422 | 527 | 993 | 290 | 5429 | 237 |
| LU10 | Lucan 10 | 3523 | 248 | 547 | 109 | 2976 | 139 |
| LV3L | Lucretius 3 | 7364 | 367 | 1095 | 333 | 6269 | 34 |
| PERS | Persius 1-6 | 4468 | 428 | 654 | 216 | 3814 | 212 |
| SILI | Silius Italicus 1 | 4283 | 313 | 693 | 221 | 3590 | 92 |
| STA1 | Statius, *Achilleis* 1 | 6142 | 493 | 958 | 265 | 5184 | 228 |
| VAN1 | Vergil, *Aeneid* 1 | 4885 | 370 | 755 | 268 | 4130 | 102 |
| VFL1 | Valerius Flaccus 1 | 5605 | 396 | 848 | 218 | 4757 | 178 |

pt = all junctures in poetry
pp = all punctuated junctures in poetry
lt = line junctures in poetry
lp = punctuated line junctures in poetry
mt = medial junctures in poetry
mp = punctuated medial junctures in poetry

Table 2a

Percentages of All Junctures in Prose (st)

| | cc | cv | mc | mv | vc | vv | N |
|---|---|---|---|---|---|---|---|
| st CATO | 28.14 | 13.23 | 11.61 | 6.15 | 27.40 | 13.47 | 16545 |
| st CBG1 | 28.89 | 17.70 | 10.97 | 6.51 | 23.99 | 11.94 | 8113 |
| st CIA1 | 27.90 | 16.75 | 10.56 | 6.03 | 27.26 | 11.51 | 17991 |
| st CICA | 26.31 | 17.82 | 11.52 | 7.78 | 25.89 | 10.68 | 3098 |
| st LIV1 | 28.68 | 14.86 | 11.76 | 7.08 | 24.19 | 13.42 | 16852 |
| st QUTL | 30.59 | 19.98 | 10.28 | 5.51 | 23.88 | 9.76 | 15907 |
| st SALJ | 26.60 | 16.29 | 9.81 | 6.21 | 28.14 | 12.96 | 14542 |
| st SEND | 29.93 | 19.49 | 10.51 | 5.90 | 23.50 | 10.67 | 9359 |
| st TACA | 30.86 | 15.78 | 11.16 | 6.94 | 24.17 | 11.08 | 10714 |
| st TACD | 29.78 | 20.75 | 10.27 | 8.00 | 19.92 | 11.28 | 9298 |
| st Mean | 28.77 | 17.27 | 10.85 | 6.61 | 24.83 | 11.68 | |
| st high | 30.86 | 19.98 | 11.76 | 8.00 | 28.14 | 13.47 | |
| st low | 26.31 | 13.23 | 9.81 | 5.51 | 19.92 | 9.76 | |

N = number of junctures at issue.
Percentages total 100 horizontally.
The mean is the column total divided by 10.

Table 2b

Percentages of All Junctures in Poetry (pt)

| | cc | cv | mc | mv | vc | vv | N |
|---|---|---|---|---|---|---|---|
| pt CA64 | 26.34 | 15.58 | 9.15 | 1.98 | 41.59 | 5.36 | 2426 |
| pt HEP1 | 27.52 | 22.79 | 10.03 | 1.75 | 35.12 | 2.79 | 6692 |
| pt JUVL | 29.48 | 20.49 | 9.43 | 2.68 | 32.92 | 5.00 | 6422 |
| pt LU10 | 30.43 | 20.78 | 7.15 | 1.31 | 36.72 | 3.60 | 3523 |
| pt LV3L | 25.55 | 22.55 | 10.17 | 2.19 | 31.00 | 8.53 | 7364 |
| pt PERS | 29.32 | 19.07 | 8.08 | 2.44 | 33.71 | 7.38 | 4468 |
| pt SIL1 | 27.51 | 18.12 | 7.78 | 2.59 | 36.08 | 7.92 | 4283 |
| pt STA1 | 26.92 | 21.47 | 7.31 | 1.66 | 36.32 | 6.32 | 6142 |
| pt VAN1 | 25.79 | 21.13 | 9.01 | 3.03 | 33.58 | 7.46 | 4885 |
| pt VFL1 | 27.54 | 21.54 | 7.93 | 1.77 | 36.13 | 5.10 | 5605 |
| pt Mean | 27.64 | 20.35 | 8.60 | 2.14 | 35.32 | 5.95 | |
| pt high | 30.43 | 22.79 | 10.17 | 3.03 | 41.59 | 8.53 | |
| pt low | 25.55 | 15.58 | 7.15 | 1.31 | 31.00 | 2.79 | |

Table 3a

Components of All Junctures in Prose (st)

| | fc | fm | fv | ic |
|---|---|---|---|---|
| st CATO | 41.37 | 17.76 | 40.88 | 67.15 |
| st CBG1 | 46.59 | 17.48 | 35.93 | 63.85 |
| st CIA1 | 44.66 | 16.58 | 38.76 | 65.72 |
| st CICA | 44.13 | 19.30 | 36.57 | 63.72 |
| st LIV1 | 43.54 | 18.84 | 37.62 | 64.63 |
| st QUTL | 50.58 | 15.79 | 33.63 | 64.75 |
| st SALJ | 42.89 | 16.02 | 41.09 | 64.54 |
| st SEND | 49.42 | 16.41 | 34.17 | 63.94 |
| st TACA | 46.64 | 18.11 | 35.25 | 66.19 |
| st TACD | 50.53 | 18.27 | 31.20 | 59.97 |
| st Mean | 46.04 | 17.46 | 36.51 | 64.45 |
| st high | 50.58 | 19.30 | 41.09 | 67.15 |
| st low | 41.37 | 15.79 | 31.20 | 59.97 |

Percentages of final consonants ('fc'), final -m ('fm'), final vowels ('fv'), and initial consonants ('ic') including consonantal 'i' and 'j'.

Percentages for initial vowel ('iv'), including initial 'h', are supplied by subtracting 'ic' from 100. The mean is the column total divided by 10.

Table 3b

Components of All Junctures in Poetry (pt)

| | fc | fm | fv | ic |
|---|---|---|---|---|
| pt CA64 | 41.92 | 11.13 | 46.95 | 77.08 |
| pt HEP1 | 50.31 | 11.78 | 37.91 | 72.67 |
| pt JUVL | 49.97 | 12.11 | 37.92 | 71.83 |
| pt LU10 | 51.21 | 8.46 | 40.33 | 74.31 |
| pt LV3L | 48.11 | 12.36 | 39.53 | 66.73 |
| pt PERS | 48.39 | 10.52 | 41.09 | 71.11 |
| pt SIL1 | 45.63 | 10.37 | 44.00 | 71.37 |
| pt STA1 | 48.39 | 8.97 | 42.64 | 70.55 |
| pt VAN1 | 46.92 | 12.04 | 41.04 | 68.38 |
| pt VFL1 | 49.07 | 9.70 | 41.23 | 71.60 |
| pt Mean | 47.99 | 10.74 | 41.26 | 71.56 |
| pt high | 51.21 | 12.36 | 46.95 | 77.08 |
| pt low | 41.92 | 8.46 | 37.91 | 66.73 |

Table 4

Data for 'vc' in All Prose and Poetry Junctures

| | Actual Percentage of 'vc' | (Estimated Percentage) | dvc (Actual minus estimate) |
|---|---|---|---|
| st CATO | 27.40 | (27.45) | -0.05 |
| st CBG1 | 23.99 | (22.94) | 1.05 |
| st CIA1 | 27.26 | (25.47) | 1.79 |
| st CICA | 25.89 | (23.30) | 2.59 |
| st LIV1 | 24.19 | (24.31) | -0.12 |
| st QUTL | 23.88 | (21.78) | 2.10 |
| st SALJ | 28.14 | (26.52) | 1.62 |
| st SEND | 23.50 | (21.85) | 1.65 |
| st TACA | 24.17 | (23.33) | 0.84 |
| st TACD | 19.92 | (18.71) | 1.21 |
| st Mean | 24.83 | (23.57) | 1.27 |
| high | 28.14 | (27.45) | 2.59 |
| low | 19.92 | (18.71) | -0.12 |
| pt CA64 | 41.59 | (36.19) | 5.40 |
| pt HEP1 | 35.12 | (27.55) | 7.57 |
| pt JUVL | 32.92 | (27.24) | 5.68 |
| pt LU10 | 36.72 | (29.97) | 6.76 |
| pt LV3L | 31.00 | (26.38) | 4.62 |
| pt PERS | 33.71 | (29.22) | 4.49 |
| pt SIL1 | 36.08 | (31.40) | 4.68 |
| pt STA1 | 36.32 | (30.08) | 6.24 |
| pt VAN1 | 33.58 | (28.06) | 5.51 |
| pt VFL1 | 36.13 | (29.52) | 6.61 |
| pt Mean | 35.32 | (29.59) | 5.76 |
| high | 41.59 | (36.19) | 7.57 |
| low | 31.00 | (26.38) | 4.49 |

Table 5a

Components and Deviations for All Junctures in Prose (st)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| st | CATO | 41.37 | 17.76 | 40.88 | 67.15 | 0.36 | -0.31 | -0.05 | 16545 |
| st | CBG1 | 46.59 | 17.48 | 35.93 | 63.85 | -0.86 | -0.19 | 1.05 | 8113 |
| st | CIA1 | 44.66 | 16.58 | 38.76 | 65.72 | -1.44 | -0.34 | 1.78 | 17991 |
| st | CICA | 44.13 | 19.30 | 36.57 | 63.72 | -1.81 | -0.78 | 2.58 | 3098 |
| st | LIV1 | 43.54 | 18.84 | 37.62 | 64.63 | 0.54 | -0.42 | -0.12 | 16852 |
| st | QUTL | 50.58 | 15.79 | 33.63 | 64.75 | -2.15 | 0.05 | 2.10 | 15907 |
| st | SALJ | 42.89 | 16.02 | 41.09 | 64.54 | -1.08 | -0.53 | 1.61 | 14542 |
| st | SEND | 49.42 | 16.41 | 34.17 | 63.94 | -1.67 | 0.02 | 1.65 | 9359 |
| st | TACA | 46.64 | 18.11 | 35.25 | 66.19 | -0.02 | -0.82 | 0.84 | 10714 |
| st | TACD | 50.53 | 18.27 | 31.20 | 59.97 | -0.52 | -0.69 | 1.21 | 9298 |
| st | Mean | 46.04 | 17.46 | 36.51 | 64.45 | -0.87 | -0.40 | 1.27 | |
| st | high | 50.58 | 19.30 | 41.09 | 67.15 | 0.54 | 0.05 | 2.58 | |
| st | low | 41.37 | 15.79 | 31.20 | 59.97 | -2.15 | -0.82 | -0.12 | |

Table 5b

Components and Deviations for All Junctures in Poetry (pt)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| pt | CA64 | 41.92 | 11.13 | 46.95 | 77.08 | -5.97 | 0.57 | 5.40 | 2426 |
| pt | HEP1 | 50.31 | 11.78 | 37.91 | 72.67 | -9.04 | 1.47 | 7.57 | 6692 |
| pt | JUVL | 49.97 | 12.11 | 37.92 | 71.83 | -6.42 | 0.73 | 5.68 | 6422 |
| pt | LU10 | 51.21 | 8.46 | 40.33 | 74.31 | -7.62 | 0.87 | 6.76 | 3523 |
| pt | LV3L | 48.11 | 12.36 | 39.53 | 66.73 | -6.55 | 1.93 | 4.62 | 7364 |
| pt | PERS | 48.39 | 10.52 | 41.09 | 71.11 | -5.09 | 0.60 | 4.49 | 4468 |
| pt | SIL1 | 45.63 | 10.37 | 44.00 | 71.37 | -5.06 | 0.38 | 4.68 | 4283 |
| pt | STA1 | 48.39 | 8.97 | 42.64 | 70.55 | -7.22 | 0.98 | 6.24 | 6142 |
| pt | VAN1 | 46.92 | 12.04 | 41.04 | 68.38 | -6.29 | 0.78 | 5.51 | 4885 |
| pt | VFL1 | 49.07 | 9.70 | 41.23 | 71.60 | -7.60 | 0.99 | 6.61 | 5605 |
| pt | Mean | 47.99 | 10.74 | 41.26 | 71.56 | -6.69 | 0.93 | 5.76 | |
| pt | high | 51.21 | 12.36 | 46.95 | 77.08 | -5.06 | 1.93 | 7.57 | |
| pt | low | 41.92 | 8.46 | 37.91 | 66.73 | -9.04 | 0.38 | 4.49 | |

Table 5c

Components and Deviations for All Medial Junctures in Poetry (mt)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| mt | CA64 | 40.42 | 11.14 | 48.44 | 78.45 | -6.35 | 0.62 | 5.73 | 2019 |
| mt | HEP1 | 50.91 | 10.83 | 38.26 | 72.18 | -10.18 | 1.54 | 8.64 | 5687 |
| mt | JUVL | 50.67 | 11.33 | 38.00 | 72.44 | -7.53 | 0.95 | 6.58 | 5429 |
| mt | LU10 | 51.01 | 7.56 | 41.43 | 76.51 | -8.95 | 1.24 | 7.72 | 2976 |
| mt | LV3L | 47.65 | 12.17 | 40.18 | 66.69 | -7.26 | 2.17 | 5.09 | 6269 |
| mt | PERS | 48.90 | 10.49 | 40.61 | 71.89 | -5.68 | 0.67 | 5.02 | 3814 |
| mt | SIL1 | 45.29 | 9.72 | 44.99 | 73.76 | -6.08 | 0.43 | 5.65 | 3590 |
| mt | STA1 | 47.28 | 8.43 | 44.29 | 71.47 | -8.33 | 1.02 | 7.31 | 5184 |
| mt | VAN1 | 46.49 | 10.71 | 42.79 | 69.66 | -7.17 | 0.90 | 6.26 | 4130 |
| mt | VFL1 | 48.98 | 9.04 | 41.98 | 73.05 | -8.74 | 1.20 | 7.55 | 4757 |
| mt | Mean | 47.76 | 10.14 | 42.10 | 72.61 | -7.63 | 1.07 | 6.56 | |
| mt | high | 51.01 | 12.17 | 48.44 | 78.45 | -5.68 | 2.17 | 8.64 | |
| mt | low | 40.42 | 7.56 | 38.00 | 66.69 | -10.18 | 0.43 | 5.02 | |

Table 5d

Components and Deviations for All Line Junctures in Poetry (lt)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| lt | CA64 | 49.63 | 10.81 | 39.56 | 70.27 | -3.42 | 0.27 | 3.16 | 407 |
| lt | HEP1 | 46.97 | 17.11 | 35.92 | 75.42 | -2.49 | 0.92 | 1.56 | 1005 |
| lt | JUVL | 46.12 | 16.41 | 37.46 | 68.48 | -0.47 | -0.26 | 0.73 | 993 |
| lt | LU10 | 52.29 | 13.35 | 34.37 | 62.34 | -0.23 | -0.46 | 0.69 | 547 |
| lt | LV3L | 50.78 | 13.42 | 35.80 | 66.94 | -2.48 | 0.51 | 1.97 | 1095 |
| lt | PERS | 45.41 | 10.70 | 43.88 | 66.51 | -1.76 | 0.22 | 1.54 | 654 |
| lt | SIL1 | 47.47 | 13.71 | 38.82 | 58.87 | 0.48 | 0.59 | -1.06 | 693 |
| lt | STA1 | 54.49 | 11.90 | 33.61 | 65.55 | -0.96 | 0.97 | -0.01 | 958 |
| lt | VAN1 | 49.27 | 19.29 | 31.44 | 61.43 | -1.34 | 0.70 | 0.64 | 755 |
| lt | VFL1 | 49.65 | 13.33 | 37.03 | 63.56 | -1.13 | 0.14 | 0.99 | 848 |
| lt | Mean | 49.21 | 14.00 | 36.79 | 65.94 | -1.38 | 0.36 | 1.02 | |
| lt | high | 54.49 | 19.29 | 43.88 | 75.45 | 0.48 | 0.97 | 3.16 | |
| lt | low | 45.41 | 10.70 | 31.44 | 58.87 | -3.42 | -0.46 | -1.06 | |

Table 6a1

Components and Deviations for All Unpunctuated Junctures in Prose (su)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| su | CATO | 41.04 | 18.92 | 40.04 | 67.67 | 0.35 | -0.29 | -0.06 | 14849 |
| su | CBG1 | 44.95 | 18.08 | 36.98 | 64.16 | -0.78 | -0.25 | 1.03 | 7651 |
| su | CIA1 | 43.29 | 17.05 | 39.66 | 64.97 | -1.58 | -0.36 | 1.93 | 16379 |
| su | CICA | 42.93 | 19.52 | 37.55 | 63.70 | -1.87 | -0.83 | 2.70 | 2956 |
| su | LIV1 | 41.76 | 19.62 | 38.62 | 65.12 | 0.68 | -0.48 | -0.20 | 15674 |
| su | QUTL | 49.38 | 16.28 | 34.33 | 64.41 | -2.24 | 0.06 | 2.17 | 15023 |
| su | SALJ | 41.53 | 16.63 | 41.85 | 64.65 | -1.10 | -0.60 | 1.70 | 13666 |
| su | SEND | 48.60 | 16.71 | 34.68 | 63.68 | -1.70 | 0.03 | 1.67 | 8664 |
| su | TACA | 45.05 | 18.83 | 36.12 | 65.81 | -0.08 | -0.83 | 0.91 | 9941 |
| su | TACD | 49.60 | 18.78 | 31.62 | 59.42 | -0.59 | -0.67 | 1.26 | 8867 |
| su | Mean | 44.81 | 18.04 | 37.15 | 64.36 | -0.89 | -0.42 | 1.31 | |
| su | high | 49.38 | 19.62 | 41.85 | 67.67 | 0.68 | 0.06 | 2.70 | |
| su | low | 41.04 | 16.28 | 31.62 | 59.42 | -2.24 | -0.83 | -0.20 | |

Table 6a2

Components and Deviations for All Punctuated Junctures in Prose (sp)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| sp | CATO | 44.22 | 7.55 | 48.23 | 62.56 | 0.58 | -1.01 | 0.43 | 1696 |
| sp | CBG1 | 73.81 | 7.58 | 18.61 | 58.66 | -0.65 | 0.32 | 0.34 | 462 |
| sp | CIA1 | 58.56 | 11.79 | 29.65 | 73.33 | -1.25 | 0.23 | 1.02 | 1612 |
| sp | CICA | 69.01 | 14.79 | 16.20 | 64.79 | -1.05 | 0.28 | 0.77 | 142 |
| sp | LIV1 | 67.32 | 8.49 | 24.19 | 58.15 | 0.33 | -0.35 | 0.02 | 1178 |
| sp | QUTL | 70.81 | 7.47 | 21.72 | 70.36 | -1.98 | 0.40 | 1.57 | 884 |
| sp | SALJ | 64.16 | 6.51 | 29.34 | 62.90 | -0.51 | 0.36 | 0.15 | 876 |
| sp | SEND | 59.57 | 12.66 | 27.77 | 67.19 | -1.61 | -0.02 | 1.63 | 695 |
| sp | TACA | 67.14 | 8.80 | 24.06 | 71.15 | -0.29 | -0.18 | 0.47 | 773 |
| sp | TACD | 69.61 | 7.89 | 22.51 | 71.23 | -1.32 | 0.18 | 1.14 | 431 |
| (omitting sp CATO) | | | | | | | | | |
| sp | Mean | 66.66 | 9.55 | 23.79 | 66.42 | -0.93 | 0.14 | 0.79 | |
| sp | high | 73.81 | 14.79 | 29.65 | 73.33 | 0.33 | 0.40 | 1.63 | |
| sp | low | 58.56 | 6.51 | 16.20 | 58.15 | -1.98 | -0.35 | 0.02 | |

Table 6b1

Components and Deviations for All Unpunctuated Junctures in Poetry (pu)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| pu | CA64 | 41.78 | 11.16 | 47.06 | 77.28 | -5.90 | 0.44 | 5.46 | 2293 |
| pu | HEP1 | 50.44 | 11.44 | 38.12 | 72.34 | -9.57 | 1.52 | 8.05 | 6136 |
| pu | JUVL | 49.82 | 12.20 | 37.98 | 71.82 | -6.61 | 0.74 | 5.87 | 5895 |
| pu | LU10 | 50.05 | 8.40 | 41.56 | 74.32 | -7.94 | 0.97 | 6.98 | 3275 |
| pu | LV3L | 47.59 | 12.51 | 39.90 | 66.71 | -6.83 | 2.05 | 4.78 | 6997 |
| pu | PERS | 47.77 | 10.74 | 41.49 | 71.53 | -5.16 | 0.51 | 4.66 | 4040 |
| pu | SIL1 | 44.80 | 10.25 | 44.95 | 72.01 | -5.25 | 0.33 | 4.92 | 3970 |
| pu | STA1 | 47.11 | 8.98 | 43.92 | 70.90 | -7.62 | 1.04 | 6.59 | 5649 |
| pu | VAN1 | 46.15 | 11.88 | 41.97 | 68.95 | -6.57 | 0.90 | 5.67 | 4515 |
| pu | VFL1 | 48.09 | 9.52 | 42.39 | 71.93 | -8.04 | 1.06 | 6.98 | 5209 |
| pu | Mean | 47.36 | 10.71 | 41.93 | 71.78 | -6.95 | 0.96 | 6.00 | |
| pu | high | 50.44 | 12.51 | 47.06 | 77.28 | -5.16 | 2.05 | 8.05 | |
| pu | low | 41.78 | 8.40 | 37.98 | 66.71 | -9.57 | 0.33 | 4.66 | |

Table 6b2

Components and Deviations for All Punctuated Junctures in Poetry (pp)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| pp | CA64 | 44.36 | 10.53 | 45.11 | 73.68 | -7.12 | 2.77 | 4.35 | 133 |
| pp | HEP1 | 48.92 | 15.47 | 35.61 | 76.26 | -3.13 | 0.80 | 2.34 | 556 |
| pp | JUVL | 51.61 | 11.20 | 37.19 | 71.92 | -4.29 | 0.68 | 3.61 | 527 |
| pp | LU10 | 66.53 | 9.27 | 24.19 | 74.19 | -3.40 | -0.43 | 3.82 | 248 |
| pp | LV3L | 58.04 | 9.54 | 32.43 | 67.03 | -1.30 | -0.40 | 1.70 | 367 |
| pp | PERS | 54.21 | 8.41 | 37.38 | 67.06 | -4.10 | 1.37 | 2.73 | 428 |
| pp | SIL1 | 56.23 | 11.82 | 31.95 | 63.26 | -1.70 | 1.15 | 0.56 | 313 |
| pp | STA1 | 63.08 | 8.92 | 27.99 | 66.53 | -2.01 | 0.35 | 1.66 | 493 |
| pp | VAN1 | 56.33 | 14.02 | 29.65 | 61.46 | -2.27 | -0.53 | 2.80 | 370 |
| pp | VFL1 | 62.12 | 11.87 | 26.01 | 67.42 | -1.23 | 0.08 | 1.15 | 396 |
| pp | Mean | 56.14 | 11.11 | 32.75 | 68.88 | -3.06 | 0.58 | 2.47 | |
| pp | high | 66.53 | 15.47 | 45.11 | 76.26 | -1.23 | 2.77 | 4.35 | |
| pp | low | 44.36 | 8.41 | 24.19 | 61.46 | -7.12 | -0.53 | 0.56 | |

Table 6c1

Components and Deviations for Unpunctuated Medial Junctures in Poetry (mu)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| mu | CA64 | 40.40 | 10.95 | 48.66 | 78.51 | -6.29 | 0.56 | 5.73 | 2010 |
| mu | HEP1 | 50.76 | 10.86 | 38.38 | 72.10 | -10.19 | 1.52 | 8.67 | 5498 |
| mu | JUVL | 50.27 | 11.44 | 38.29 | 72.36 | -7.46 | 0.91 | 6.56 | 5192 |
| mu | LU10 | 50.12 | 7.72 | 42.16 | 76.21 | -9.19 | 1.27 | 7.92 | 2837 |
| mu | LV3L | 47.55 | 12.22 | 40.22 | 66.72 | -7.28 | 2.17 | 5.11 | 6235 |
| mu | PERS | 48.14 | 10.52 | 41.34 | 71.93 | -5.59 | 0.59 | 5.00 | 3602 |
| mu | SIL1 | 44.68 | 9.78 | 45.54 | 73.67 | -6.13 | 0.40 | 5.73 | 3498 |
| mu | STA1 | 46.43 | 8.49 | 45.08 | 71.37 | -8.40 | 1.00 | 7.40 | 4956 |
| mu | VAN1 | 46.18 | 10.81 | 43.01 | 69.76 | -7.20 | 0.89 | 6.32 | 4028 |
| mu | VFL1 | 48.05 | 9.06 | 42.89 | 72.85 | -8.95 | 1.19 | 7.76 | 4579 |
| mu | Mean | 47.26 | 10.19 | 42.56 | 72.55 | -7.67 | 1.05 | 6.62 | |
| mu | high | 50.76 | 12.22 | 48.66 | 78.51 | -5.59 | 2.17 | 8.67 | |
| mu | low | 40.40 | 7.72 | 38.29 | 66.72 | -10.19 | 0.40 | 5.00 | |

Table 6c2

Components and Deviations for Punctuated Medial Junctures in Poetry (mp)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| mp | CA64 | 44.44 | 55.56 | 0.00 | 66.67 | -18.52 | 18.52 | 0.00 | 9 |
| mp | HEP1 | 55.03 | 10.05 | 34.92 | 74.60 | -9.84 | 2.02 | 7.81 | 189 |
| mp | JUVL | 59.49 | 8.86 | 31.65 | 74.26 | -9.16 | 1.86 | 7.30 | 237 |
| mp | LU10 | 69.06 | 4.32 | 26.62 | 82.73 | -5.34 | 0.75 | 4.60 | 139 |
| mp | LV3L | 64.71 | 2.94 | 32.35 | 61.76 | -1.73 | 1.12 | 0.61 | 34 |
| mp | PERS | 61.79 | 9.91 | 28.30 | 71.23 | -7.22 | 1.91 | 5.31 | 212 |
| mp | SIL1 | 68.48 | 7.61 | 23.91 | 77.17 | -5.02 | 1.74 | 3.28 | 92 |
| mp | STA1 | 65.79 | 7.02 | 27.19 | 73.68 | -7.25 | 1.41 | 5.84 | 228 |
| mp | VAN1 | 58.82 | 6.86 | 34.31 | 65.69 | -5.31 | 1.37 | 3.93 | 102 |
| mp | VFL1 | 73.03 | 8.43 | 18.54 | 78.09 | -4.78 | 1.28 | 3.50 | 178 |
| (Omitting CA64) | | | | | | | | | |
| mp | Mean | 64.02 | 7.33 | 28.64 | 73.25 | -6.18 | 1.50 | 4.69 | |
| mp | high | 73.03 | 10.05 | 34.92 | 82.73 | -1.73 | 2.02 | 7.81 | |
| mp | low | 55.03 | 2.94 | 18.54 | 61.76 | -9.84 | 0.75 | 0.61 | |

Table 6d1

Components and Deviations for Unpunctuated Line Junctures in Poetry (lu)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| lu | CA64 | 51.59 | 12.72 | 35.69 | 68.55 | -2.15 | -0.24 | 2.39 | 283 |
| lu | HEP1 | 47.65 | 16.46 | 35.89 | 74.45 | -4.13 | 1.38 | 2.74 | 638 |
| lu | JUVL | 46.51 | 17.78 | 35.70 | 67.85 | -0.41 | -0.26 | 0.67 | 703 |
| lu | LU10 | 49.54 | 12.79 | 37.67 | 62.10 | 0.06 | -0.41 | 0.35 | 438 |
| lu | LV3L | 47.90 | 14.83 | 37.27 | 66.67 | -3.06 | 1.01 | 2.05 | 762 |
| lu | PERS | 44.75 | 12.56 | 42.69 | 68.26 | -1.78 | -0.12 | 1.91 | 438 |
| lu | SIL1 | 45.76 | 13.77 | 40.47 | 59.53 | 1.36 | 0.28 | -1.63 | 472 |
| lu | STA1 | 51.95 | 12.41 | 35.64 | 67.53 | -1.89 | 1.43 | 0.46 | 693 |
| lu | VAN1 | 45.90 | 20.70 | 33.40 | 62.30 | -1.34 | 1.66 | -0.32 | 487 |
| lu | VFL1 | 48.41 | 12.86 | 38.73 | 65.24 | -1.42 | 0.34 | 1.08 | 630 |
| lu | Mean | 48.00 | 14.69 | 37.32 | 66.25 | -1.48 | 0.51 | 0.97 | |
| lu | high | 51.95 | 20.70 | 42.69 | 74.45 | 1.36 | 1.66 | 2.74 | |
| lu | low | 44.75 | 12.41 | 33.40 | 59.53 | -4.13 | -0.41 | -1.63 | |

Table 6d2

Components and Deviations for Punctuated Line Junctures in Poetry (lp)

| | | fc | fm | fv | ic | dcc (-dcv) | dmc (-dmv) | dvc (-dvv) | N |
|---|---|---|---|---|---|---|---|---|---|
| lp | CA64 | 44.35 | 7.26 | 48.39 | 74.19 | -6.29 | 1.87 | 4.42 | 124 |
| lp | HEP1 | 45.78 | 18.26 | 35.97 | 77.11 | 0.40 | 0.09 | -0.49 | 367 |
| lp | JUVL | 45.17 | 13.10 | 41.72 | 70.00 | -0.58 | -0.21 | 0.79 | 290 |
| lp | LU10 | 63.30 | 15.60 | 21.10 | 63.30 | -1.54 | -0.70 | 2.24 | 109 |
| lp | LV3L | 57.36 | 10.21 | 32.43 | 67.57 | -1.22 | -0.59 | 1.81 | 333 |
| lp | PERS | 46.76 | 6.94 | 46.30 | 62.96 | -1.66 | 0.72 | 0.94 | 216 |
| lp | SIL1 | 51.13 | 13.57 | 35.29 | 57.47 | -1.33 | 1.25 | 0.08 | 221 |
| lp | STA1 | 61.13 | 10.57 | 28.30 | 60.38 | 1.96 | -0.34 | -1.62 | 265 |
| lp | VAN1 | 55.39 | 16.73 | 27.88 | 59.85 | -1.18 | -1.09 | 2.27 | 268 |
| lp | VFL1 | 53.21 | 14.68 | 32.11 | 58.72 | -0.05 | -0.36 | 0.41 | 218 |
| lp | Mean | 52.36 | 12.69 | 34.95 | 65.16 | -1.13 | 0.06 | 1.07 | |
| lp | high | 63.30 | 18.26 | 48.39 | 77.11 | 1.96 | 1.87 | 4.42 | |
| lp | low | 44.35 | 6.94 | 21.10 | 58.72 | -6.29 | -1.09 | -1.62 | |

Table 7a

Unpunctuated (su) and Punctuated (sp)
Prose Junctures by Percentage

| | | cc | cv | mc | mv | vc | vv | N |
|---|---|---|---|---|---|---|---|---|
| su | CATO | 28.09 | 12.93 | 12.52 | 6.41 | 27.05 | 13.00 | 14838 |
| sp | CATO | 28.48 | 15.93 | 3.75 | 3.81 | 30.46 | 17.58 | 1707 |
| su | CBG1 | 28.03 | 16.93 | 11.33 | 6.75 | 24.70 | 12.26 | 7627 |
| sp | CBG1 | 42.39 | 29.83 | 5.35 | 2.67 | 12.76 | 6.99 | 486 |
| su | CIA1 | 26.55 | 16.80 | 10.69 | 6.35 | 27.61 | 12.00 | 16321 |
| sp | CIA1 | 41.14 | 16.29 | 9.22 | 2.88 | 23.77 | 6.71 | 1670 |
| su | CICA | 25.46 | 17.59 | 11.52 | 7.98 | 26.48 | 10.98 | 2934 |
| sp | CICA | 41.46 | 21.95 | 11.58 | 4.27 | 15.25 | 5.48 | 164 |
| su | LIV1 | 27.89 | 13.85 | 12.31 | 7.31 | 24.97 | 13.66 | 15660 |
| sp | LIV1 | 39.68 | 27.52 | 4.70 | 3.86 | 14.17 | 10.07 | 1192 |
| su | QUTL | 29.57 | 19.82 | 10.54 | 5.74 | 24.27 | 10.06 | 15008 |
| sp | QUTL | 47.72 | 22.58 | 5.90 | 1.78 | 17.24 | 4.78 | 899 |
| su | SALJ | 25.75 | 15.77 | 10.15 | 6.48 | 28.76 | 13.09 | 13633 |
| sp | SALJ | 39.83 | 23.65 | 4.84 | 1.98 | 19.36 | 10.34 | 909 |
| su | SEND | 29.24 | 19.37 | 10.69 | 6.03 | 23.74 | 10.93 | 8659 |
| sp | SEND | 38.43 | 21.00 | 8.43 | 4.14 | 20.43 | 7.57 | 700 |
| su | TACA | 29.60 | 15.46 | 11.56 | 7.28 | 24.68 | 11.42 | 9917 |
| sp | TACA | 46.55 | 19.70 | 6.15 | 2.88 | 17.94 | 6.78 | 797 |
| su | TACD | 28.79 | 20.76 | 10.50 | 8.31 | 20.04 | 11.60 | 8846 |
| sp | TACD | 49.33 | 20.36 | 5.75 | 1.99 | 17.48 | 5.09 | 452 |

Table 7b

Unpunctuated (mu) and Punctuated (mp)
Medial Junctures by Percentage

| | | cc | cv | mc | mv | vc | vv | N |
|---|---|---|---|---|---|---|---|---|
| mu | CA64 | 25.43 | 14.97 | 9.16 | 1.79 | 43.93 | 4.73 | 2010 |
| mp | CA64 | 11.11 | 33.33 | 55.56 | 0.00 | 0.00 | 0.00 | 9 |
| mu | HEP1 | 26.41 | 24.35 | 9.35 | 1.51 | 36.34 | 2.04 | 5498 |
| mp | HEP1 | 31.22 | 23.81 | 9.52 | 0.53 | 33.86 | 1.06 | 189 |
| mu | JUVL | 28.91 | 21.36 | 9.19 | 2.25 | 34.26 | 4.03 | 5192 |
| mp | JUVL | 35.02 | 24.47 | 8.44 | 0.42 | 30.81 | 0.84 | 237 |
| mu | LU10 | 29.01 | 21.11 | 7.16 | 0.56 | 40.05 | 2.12 | 2837 |
| mp | LU10 | 51.79 | 17.27 | 4.32 | 0.00 | 26.62 | 0.00 | 139 |
| mu | LV3L | 24.44 | 23.11 | 10.33 | 1.89 | 31.94 | 8.27 | 6235 |
| mp | LV3L | 38.23 | 26.47 | 2.94 | 0.00 | 20.58 | 11.76 | 34 |
| mu | PERS | 29.04 | 19.10 | 8.16 | 2.36 | 34.73 | 6.61 | 3602 |
| mp | PERS | 36.79 | 25.00 | 8.97 | 0.94 | 25.47 | 2.83 | 212 |
| mu | SIL1 | 26.78 | 17.90 | 7.61 | 2.17 | 39.28 | 6.26 | 3498 |
| mp | SIL1 | 47.83 | 20.66 | 7.61 | 0.00 | 21.74 | 2.17 | 92 |
| mu | STA1 | 24.74 | 21.69 | 7.06 | 1.43 | 39.57 | 5.51 | 4956 |
| mp | STA1 | 41.23 | 24.57 | 6.58 | 0.44 | 25.87 | 1.32 | 228 |
| mu | VAN1 | 25.01 | 21.17 | 8.43 | 2.38 | 36.32 | 6.69 | 4028 |
| mp | VAN1 | 33.33 | 25.49 | 5.88 | 0.98 | 26.47 | 7.84 | 102 |
| mu | VFL1 | 26.05 | 22.00 | 7.79 | 1.27 | 39.00 | 3.89 | 4579 |
| mp | VFL1 | 52.24 | 20.79 | 7.87 | 0.56 | 17.98 | 0.56 | 178 |

Table 7c

Unpunctuated (lu) and Punctuated (lp)
Line Junctures by Percentage

| | | cc | cv | mc | mv | vc | vv | N |
|---|---|---|---|---|---|---|---|---|
| lu | CA64 | 33.21 | 18.37 | 8.48 | 4.24 | 26.86 | 8.83 | 283 |
| lp | CA64 | 26.61 | 17.74 | 7.26 | 0.00 | 40.32 | 8.07 | 124 |
| lu | HEP1 | 31.35 | 16.30 | 13.64 | 2.82 | 29.46 | 6.43 | 638 |
| lp | HEP1 | 35.70 | 10.08 | 14.17 | 4.09 | 27.25 | 8.72 | 367 |
| lu | JUVL | 31.15 | 15.36 | 11.81 | 5.97 | 24.89 | 10.81 | 703 |
| lp | JUVL | 31.03 | 14.14 | 8.96 | 4.14 | 30.00 | 11.72 | 290 |
| lu | LU10 | 30.82 | 18.72 | 7.54 | 5.25 | 23.74 | 13.93 | 438 |
| lp | LU10 | 38.53 | 24.77 | 9.18 | 6.42 | 15.59 | 5.50 | 109 |
| lu | LV3L | 28.87 | 19.03 | 10.89 | 3.94 | 26.90 | 10.37 | 762 |
| lp | LV3L | 37.54 | 19.82 | 6.31 | 3.90 | 23.72 | 8.71 | 333 |
| lu | PERS | 28.77 | 15.98 | 8.45 | 4.11 | 31.05 | 11.64 | 438 |
| lp | PERS | 27.78 | 18.98 | 5.09 | 1.85 | 30.09 | 16.21 | 216 |
| lu | SIL1 | 28.60 | 17.16 | 8.47 | 5.30 | 22.46 | 18.01 | 472 |
| lp | SIL1 | 28.06 | 23.07 | 9.05 | 4.52 | 20.36 | 14.93 | 221 |
| lu | STA1 | 33.19 | 18.76 | 9.81 | 2.60 | 24.53 | 11.11 | 693 |
| lp | STA1 | 38.87 | 21.88 | 6.04 | 4.53 | 15.47 | 13.21 | 265 |
| lu | VAN1 | 27.25 | 18.64 | 14.55 | 6.15 | 20.49 | 12.91 | 487 |
| lp | VAN1 | 31.97 | 23.42 | 8.92 | 7.81 | 18.96 | 8.92 | 268 |
| lu | VFL1 | 30.16 | 18.25 | 8.73 | 4.13 | 26.35 | 12.38 | 630 |
| lp | VFL1 | 31.19 | 22.02 | 8.26 | 6.42 | 19.27 | 12.84 | 218 |