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A New Approach to the Saturnian Verse and Its Relation to Latin Prosody*

Jed Parsons
University of California at Berkeley

Introduction

Modern attempts to understand the Saturnian meter on either a quantititative, accentual, or syllabic basis have failed to specify a system that can account for all the surviving verses.[1] Furthermore, none has succeeded in accounting for important prosodic phenomena such as elision. This paper will depart from the path of previous inquiries by seeking a metrical solution in the rhythmic features native to the Latin language itself. Before proceeding with my argument, I will first introduce the features of Latin prosody on which this analysis is based. This introduction will draw from modern theories about metrics, which use some technical terms in ways that may seem foreign or contradictory to the classicist. When ambiguities or conflicts in terminology arise, I will do my best to clarify them. Following my argument, I will conclude with some observations on the development of word accentuation in Latin, which may explain why the Romans themselves ultimately forgot how to scan the Saturnian verse.

Prosody

All speakers have an intuitive knowledge of their own language. This knowledge refers to embedded structures and rules of which speakers may in fact have only a dimly conscious awareness, or none at all. Although this article is about a Latin topic, some examples in English may help to clarify some fundamental concepts.

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[1]The standard bibliography includes, for a quantitative solution, Leo, Burger, de Groot, and Cole; for an accentual solution, Lindsay 1893; for a syllable-counting solution, Pighi (see below, n. 25). For recent discussions and assessments of the bibliography, see both Kloss and Goldberg (60).

Consider the word *Mississippi*. We sense that this word consists of two disyllabic rhythmic components, *misi* and *sipi*.[2] We may call these components RHYTHMIC FEET. Each foot is trochaic, carrying a stress accent on its first syllable: *mísi* and *sípi*. Of the two prominent accents on this word, the latter is the principal accent: *Mìssissíppi*. We can say that the last syllable is the HEAD of this word, since it contains greater cumulative emphasis. We can define PRIMARY STRESS as falling on the head of the foot that is the head of the word.

In English, Stress Clash occurs where the feet bearing primary stress in two different words lie in adjacency. Speakers resolve this clash by moving one of the clashing accents to another stressed syllable in the same word. Thus we say *Mississíppi*, but *Mìssissippi múd*.[3] This syntactic structure is a noun phrase, in which the noun *mud* is the head and bears cumulatively primary stress. To preserve the prominence of *mud*, and to resolve Stress Clash, the accent on *Mississippi* moves.[4] This process is known as the Rhythm Rule of stress retraction. It is called a rule because, at some level, the brains of English speakers consistently produce this output without any conscious thought. English speakers also refer to the rhythmic structure of a word in the process of Expletive Infixation.[5] Here, expletives are inserted at foot boundaries: *Not more Missifrigginsippi mud!* No speaker would produce the forms **Mifrigginsissippi* or **Mississifrigginpi*, since these violate the rhythmic foot structure of the word.[6]

All these processes are manifestations of PROSODY.[7] Prosody is the domain of linguistic rhythm defined by prominence relations.[8] It is the realm of such features as stress, pitch, and duration.[9] In all languages, prosodic structure is

[2]I have omitted the geminate consonants for simplicity, because although they are present in the orthography, they are absent in actual speech.

[3]For more on accent remapping in English, see the classic treatment in Chomsky and Halle; more recently, and with newer approaches, Hayes 1995, from whom this example is taken.

[4]Unless pragmatics interferes. Focality on the adjective can take precedence over the primary stress normally allotted to the head in a noun phrase: *What kind of mud did you say? Mississíppi mud!*

[5]Expletive Infixation is discussed by McCarthy 1982.

[6]The asterisk signifies either, as here, an ill-formed word, or, more generally, a hypothetical or reconstructed form.

[7]For a more complete introduction to these concepts, see the presentation in Hanson and Kiparsky 1997. For a quick and dirty discussion of the relevant terminology here, see Cutler and Ladd 141–46.

[8]High and low tones in pitch contours in English are anchored to the stressed syllables of rhythmic feet. See Hayes 1995: 5–23.

[9]The term PROSODY has been used elsewhere with a slightly different meaning. Classicists may, for example, be familiar with the definition in Devine and Stephens 33 n. 1. In this paper,

realized as a recursive hierarchy of binary constituents. Of each constituent, the element that is most prominent is designated the head. The hierarchy is composed, from the bottom up, of phonological segments that are grouped into MORAS. The mora is the minimum unit of syllabic duration. Moras are grouped maximally by pairs into SYLLABLES, syllables into FEET, and feet into PROSODIC WORDS. Such a constituent may or may not coincide with a morphological word. Poetic METER is the stylization of prosody. It is a totalizing and regularized recurrence of structures of prominence. All English poetic meters, including successful imports such as haiku, are compatible with the prosodic structure of English speech.[10] As we turn now to Latin, the importance of prosody at many levels will be clear.

Latin Prosody

In his 1994 article, Armin Mester looked again at the earlier observations of Niedermann (1908) and Burger (1928) that the morphology of Latin had a tendency to form rhythms of the pattern ⏑ ⏑ | ⏑ ⏑. Mester demonstrated that a preference for binary, moraic trochees of this shape motivated a number of innovations at the lexical and morphological levels, and that it was behind certain prosodic phenomena, such as the location of the stress accent. In Latin, a light syllable is monomoraic; a heavy syllable is bimoraic, having about twice the duration of a light syllable. A trochee is here defined as a left-headed binary foot—that is, a foot whose left-most element has greater prominence and is therefore the only candidate for carrying a stress accent.

Latin's system for analyzing a domain into moraic trochees is slightly different from that of English. It first designates the right-most syllable of the domain as extrametrical (i.e., invisible to the application of prosodic rules). Then it groups maximally bimoraic pairs by scanning the domain from one end to the other. Solitary moras are said to be "stranded," trapped between heavy syllables (naturally bimoraic) or pairs of light syllables that have already been grouped into trochees. These stranded moras will be passed over by processes that operate on complete feet. The following examples illustrate right-to-left analysis into moraic trochees. Here, and throughout, complete feet are enclosed in square brackets, and extrametrical constituents are enclosed in angle brackets.

I use the term in its most general sense: a domain defined *between* segments rather than on segments.

[10]See Kiparsky 1977; Liebermann and Prince; Hayes 1982; Hanson and Kiparsky 1997.

(1)

farcīre	→	[far][cī]⟨re⟩
facilius	→	fa[cili]⟨us⟩
dēsidiābulum	→	[dē][sidi][ā]bu⟨lum⟩

Many people find that extrametricality is not intuitively obvious. It does not mean that the constituent is outside of a metrical phrase, but rather that it is "invisible" to the application of prosodic rules. The concept of extrametricality is in fact already familiar to classicists in verse-final *syllaba anceps*, known more precisely (though more awkwardly) as the *syllaba indifferens*, which always receives the same metrical treatment regardless of its quantity.[11] It is also part of the accentuation rule in Allen (177), which analyzes domains "exclusive of the final syllable." Prosodic extrametricality is common in many languages where 1) the constituent is peripheral, with a universal tendency to be on the right side of a domain, and 2) the application of extrametricality will not exhaust every syllable in the word. That is, it will not reduce a monosyllable to nothing, as it would for a word like *fās*. There are several advantages to the theory of extrametricality. Above all, it simplifies matters by facilitating the application of binary templates and obviates the necessity to create ternary templates, which are often required only for analysis of the margin of a domain. It also formally acknowledges the different behavior of syllables at the margins of domains.[12]

At this point, an example will serve to clarify these concepts. The designation of the stress accent in Classical Latin may be formulated with a simple set of rules that parse moraic trochees and pass over incomplete feet and extrametrical syllables.[13]

(2) For stress assignment in **Classical Latin**:

1. Final syllable is extrametrical.
2. Parse moraic trochees, moving from right to left.
3. Accent the head of the final (complete) foot.

[11]This designation "final *anceps*" is vague, for it ignores the special behavior of a peripheral constituent. The prosodic phenomena that occur between a line-medial *anceps* and the subsequent syllable cannot all occur between the *syllaba indifferens* and the syllable following it (which is usually the first syllable in the next line).

[12]Fuller explanations are offered by both Liebermann and Prince and Hayes 1995: 57–60 and 110.

[13]See Mester 3–6 and Hayes 1995: 91–92.

For example,

(3)

... [˗]⟨×⟩	farcī̆re
... [˘ ˗]⟨×⟩	facílius
... [˗]˗⟨×⟩	dēsidiā̆bulum

In the last example, the syllable *bu* is stranded and forms an incomplete foot (as does the first syllable of *facilius*). These degenerate feet are passed over in the application of rules that analyze domains into moraic trochees.

These principles account for morphological selection in a wide variety of paradigms in Latin. I will introduce one example here.[14] Present stems in historical **-y-^{O}/e-* have two possible reflexes: verbs in *-īre* and verbs in *-ĕ̄re* < **-ĭ̄re*, canonically called the fourth and the third "*iō*" conjugations respectively.[15] The complementary distribution of forms in long and short *i* facilitates the creation of strings of moraic trochees.[16]

(4)

[˘˘]⟨×⟩	capere, cupere, facere, fodere, fugere, gradī (< *grădĕ̄ī), iacere, lacere, patī (< *păt̆ĕ̄ī), quatere, rapere, sapere, specere
[–][–]⟨×⟩	farcīre, fulcīre, haurīre, mētīre, prūrīre, saepīre, sāgīre, sancīre, sarcīre, sentīre, uāgīre, uincīre
[˘˘][–]⟨×⟩	adorīre, amicīre, aperīre, operīre, sepelīre

Before taking these ideas to an analysis of the Saturnian, let us look once more at the Latin stress accent, which will be relevant again in our later

[14]Mester gives a more detailed discussion of moraic trochee analysis and morphological selection in many other paradigms in Latin.

[15]See, for example, the forms in Meillet and Vendryes 418–20.

[16]Latin's propensity to form these rhythms was shown by Niedermann 51: "La forme *-ī-* du suffixe était de règle après une syllabe brève initiale du mot ou précédée d'une syllabe longue, et la forme *-ī̆-* après une syllabe longue ou après deux syllabes brèves fournissait la monnaie d'une longue." There is a small set of notable exceptions. The pattern ˘ [–]⟨×⟩ is found with a group of stems ending in a short vowel followed by a liquid, nasal, or glide: *ferīre*, *paurīre*, *salīre*, *uenīre* (Niedermann 44, 54). These behave as though they were heavy stems. It is not altogether surprising that there should be some apparent exceptions of this sort. If there is ever ambiguity regarding syllabification based on consonant manners, that ambiguity will likely emanate from sonorant consonants. See Hayes 1989, esp. 269–78, for an account of mora spreading triggered by relative sonority. (I am grateful to Mary Beckman for this reference.) This may violate the Principle of Maximal Onsets, but syllabification is not always defined by strict phonological segmentation. For a different sort of example of this phenomenon, compare the English syllabification of nonmonomorphemic words like *brookite* [brook.ite] with monomorphemic words like *pecan* [pe.can]. See Nespor and Vogel 1986: 62–63.

discussion. It has long been suspected that preclassical Latin observed different accentuation rules. Strong evidence for the accentuations *fácilius* and *adsímiliter* is given by Sturtevant, who demonstrates that there is a correspondence between word accent and metrical ictus in Plautus and Terence.[17] Sturtevant shows that, while there is approximately a fifty percent chance that the penult of any syllable group – ⏑, and the antepenult of ⏑ ⏑ ⏑, will fall on the verse ictus, for morphological words of this shape the same syllable (the locus of the Classical accent) will fall on the ictus 83% of the time.[18] Given this tendency for accent and ictus to coincide, Sturtevant hypothesizes special accentuation patterns for certain words. For example, he proposes that *adsímiliter* and *fácilius*, on the one hand, and *ministérium* and *calefíeri* on the other, were the correct accentual patterns.[19] Using the moraic trochee model, Andrew Garrett has formulated a rule for Plautine accentuation that will account for all these forms.[20]

[17]It has long been recognized by both sides of the accent-ictus debate that scholars tend to project onto Latin the prosody of their native languages. Thus it is the general belief of German, English, and American scholars that coincidence of stress and ictus was intentional. The French and Italians, on the other hand, tend to claim that Latin had an "accent de hauteur" or "di tipo musicale." To support this assertion, they often resort to the testimony of the grammarians, who speak of *acutae*, *graues*, and *flexae* syllables, and they claim that coincidence of stress and ictus is as arbitrary as it is (or seems to be) in Homer. Since pitch is often one manifestation of stress, we may expect to the grammarians to speak of it in a discussion of stress. But the grammarians' testimony on Latin accentuation often misleadingly imports features of Greek prosody. Compare Quint. 1.5.30–31, a slavishly Hellenistic account of Latin accentuation that regulates the location of grave and acute accents, and even prohibits a circumflex on the antepenult, all in strict accord with Greek rules. These rules are as erroneous as those of English grammarians, who, taking Latin as their model, proscribe against split infinitives and phrase-final prepositions. Such pedantic fantasies do not constitute useful linguistic evidence. As for the coincidence of stress and ictus in Latin, I will make further arguments in favor of it below. In particular, moraic trochee analysis coupled with the data from, e.g., Sturtevant, makes a strong argument in favor of the accent-ictus side (*pace* Fortson 168). There are some apparent exceptions, but part of the problem in assessing the data from the dramatists is our overall ignorance of the triggers of stress retraction in Latin, which seems certainly to have been a feature of the language. See recently Fortson, who argues for the accentuation *meús pater*, but *páter méus*.

[18]Sturtevant 238. I suspect that the coincidence was near 100%, but we cannot see this because we do not presently understand the prosodic and pragmatic factors that caused accentual remapping.

[19]See also Soubiran 280: "Les chiffres ... sont nets: pour ces deux places, ⏑ ⏑ ⏑ ⏑ = 13, ⏑ ⏑ ⏑ ⏑ ⏑ = 146 chez Plaute. C'est donc le rhythme du mot, non les constraintes du mètre, qui dictait le choix du poète."

[20]Garrett demonstrated this in his 1996 seminar on Latin linguistics at Berkeley. As far as I know, he is the first to have solved the problem of Plautine accentuation using the moraic trochee model. Allen 188–91 discussed the accentual pattern of words like *fácilius*, but treated them as anomalous.

(5) For stress assignment in **Plautine Latin**:
1. Final syllable is extrametrical.
2. Parse moraic trochees from left to right.
3. Accent the head of the final foot.

These rules differ from the Classical rules proposed above only in the direction of analysis.[21]

Thus we have these Plautine accentuations (with normal iambic shortening):

(6)

adsimiliter	→	[ad][símili]li⟨ter⟩
facilius	→	[fáci]li⟨us⟩
principium	→	[prin][cípi]⟨um⟩
minīsterium	→	[mini][stéri]⟨um⟩[22]
calĕfieri	→	[cale][fie]⟨ri⟩[23]

Whatever may have motivated the shift from Plautine to Classical accentuation—a reanalysis of ambiguous forms with no stranded syllables seems likely—moraic trochee analysis enables us to explain accentual data from two different periods. In addition to determining the location of the principal stress accent, it has been shown that a preference for binary, moraic feet also motivated morphological selection in Latin. We may therefore conclude that it was an essential rhythmic feature of the language.

Latin Prosody and the Saturnian Verse

I assume that meter is the stylization of rhythm. A language will select a given metrical pattern because the pattern is inherently suitable to it. In other words, we should expect to find native rhythmic features in a language's meters. The contrapositive should also be true: Languages select against meters that do not suit their native prosody. In the following analysis, I argue that patterns of bimoraic feet, which underlie the processes of morphological and phonological determination in Latin, are at the core of the Saturnian verse.

[21]This formulation defeats arguments that use pairs like *fácilius* and *ministérium* against the accent-ictus theory. Cf. Oniga 224–25: "...Risulta difficile capire perché tale accentazione avrebbe dovuto conservarsi solo nei quadrisillabi del tipo facilius, e non, poniamo, in quelli del tipo principium, che differiscono da facilius solo per iniziare con una sillaba lunga." This difference, as the scansions in example 6 illustrate, is not trivial, as Oniga imagines, but essential.

[22]With iambic shortening in the first foot.

[23]This word also occurs in tmesis, with iambically shortened *calĕ*.

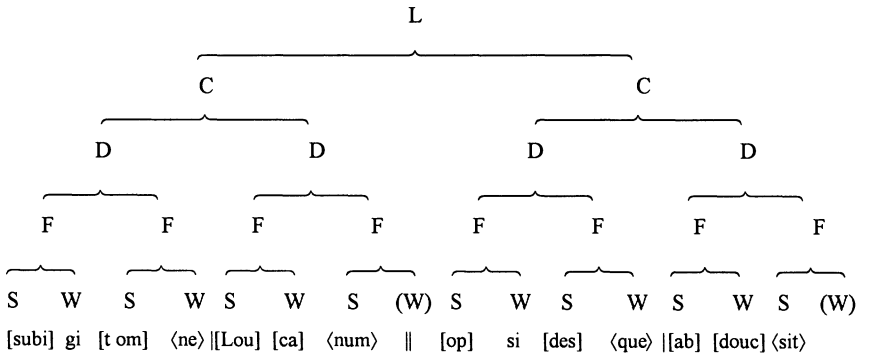
The Saturnian verse can be parsed into a hierarchical set of constituents. Each constituent in the hierarchy consists of at most two elements. The left-most element of each consistuent is designated the head. At least on the level of the moraic trochee, as the discussion of stress accent has shown, the head may exhibit greater prominence than its sister element. Because constituents are maximally binary, a regular pattern of greater prominence alternating with lesser will occur. At the highest level, the Saturnian line consists of two COLA (C), which are separated by the principal caesura. Each colon is subdivided into two DIPODES (D), which are themselves separated by lesser caesurae. Each dipode consists of two metrical (not prosodic) FEET (F), and each metrical foot consists of two metrical POSITIONS (P), the first of which I tentatively designate "strong" and the second "weak." The size of a metrical position is maximally a moraic trochee (i.e., μμ = ⏑ ⏑ = –). The minimum size of a moraic trochee is zero (i.e., unrealized), but I propose that it can be so only if it is under a weak foot. I assume that moraic feet are scanned from left to right, as in Plautine (but not Classical) Latin. The hierarchy may be schematized in the following way. A vertical bar indicates the boundary of a prosodic phrase, and a double bar will accumulate at the principal caesura.

(7)
1. L → C | C
2. C → D | D |
3. D → F F
4. F → Ps Pw
5. P → [μ(μ)]

Each dipode is coextensive with a prosodic phrase, and is treated as such for the purpose of analysis into moraic trochees. Therefore the final syllable of a dipode will be prosodically extrametrical. Once again, "extrametrical" means invisible to the application of a prosodic rule, not somehow outside the meter. I claim that the categories of this hierarchy and those of the prosodic structure upon which it is built are cumulative. I predict, therefore, that there is a tendency for the left-most of any two elements in a constituent to have greater prominence, whether in terms of stress (as in the case of metrical feet), duration (as in the case of alternating cola), or any other feature that can be contrastive. That is, there is a recurring contrast between a prominent first element (the head) with a nonprominent second element felt at every level of the hierarchy.

The following tree diagram illustrates the scansion of *CIL* I^2.7.6. Some elements are unrealized, as is typical with the Saturnian.[24] In the tree, I have marked the prominence of metrical feet, and I have labeled metrical positions as S (strong) and W (weak).

(8)



In the following analyses of verses, the bracket notation is retained, cumbersome though it is, to clearly demonstrate prosodic analysis into moraic feet.[25] I assume that trochees were analyzed from left to right (as in the Plautine system). Degenerate (i.e., monomoraic) feet are not enclosed in any brackets.

(9) ui[rum] mi⟨hi⟩| Ca[me]⟨na⟩|| [in]se⟨ce⟩| [uer][su]⟨tum⟩

(Liv. Andr. 1)

[mea] [pue]⟨ra⟩| [quid][uer]⟨bi⟩|| [ex] tu[o‿o]⟨re⟩| [supra] [fu]⟨git⟩

(Liv. Andr. 3)

[24]Stress languages may permit the nonrealization of multiple constituents in their meters. Empty spaces in the line are nonetheless metrically salient. For comparison, Mary Beckman has shown me a Japanese syllabic meter of the form σσ σσ σσ σ∅ / σσ σσ σ∅ ∅∅. Hayes and McEachern discuss the saliency of empty beats at the end of a line.

[25]This analysis bears a surface similarity to the scheme proposed in Pighi. His analysis, which diverges from the quantitative and accentual analyses of his contemporaries, was effectively a syllable-counting scheme, though he called it a "rhythmic" scheme: "Ora che abbiamo eliminato il ritmo quantitativo, l'intensitivo, e il sillabico, l'interpretazione di questa struttura ritmica [4 or 5σ | 4σ || 4σ | 4σ ||] si presenta da sé" (337). His formulation is vague, and I do not see that he explains what syllable-counting has to do with rhythm, or how his version of it differs from "il ritmo sillabico." Nonetheless, I think it fitting to mention his ideas here. Pighi is not generally cited in other literature on the Saturnian. He may have distressed his colleagues by calling the quantitative systems of a number of distinguished scholars, such as Leo and Havet, "lo scandalo della filologia" (331).

u[trum] [genu]⟨a⟩ | [am][ploc]⟨tens⟩ || [uir]gi⟨nem⟩| [o][ra]⟨ret⟩
(Liv. Andr. 14)

[noc][tu] [Troi]⟨ad⟩ | [ex][i]⟨bant⟩|| [capi]ti⟨bus⟩| o[per]⟨tis⟩
(Naev. 5.2)

[blan][de_et] [doc]⟨te⟩ | [per][con]⟨tat⟩ || [Ae][ne]⟨a⟩| [quo] [pac]⟨to⟩
(Naev. 20)

Throughout the hierarchy, the alternation between strong and weak is felt at every level, with the first of any two sister constituents generally fuller than the second. Scholars have long perceived a lilt in the Saturnian, an effect produced by the greater fullness of the first hemistich in comparison to the second.[26] Scholars have also noted that phonological units in the Saturnian tend to be coextensive with syntactic ones.[27] This results naturally from dipodes being prosodic phrases. This will be discussed further below.

Elision and Clitics

When the line is regarded as consisting of four dipodes which constitute distinct prosodic phrases, some important problems are immediately solved. In each prosodic phrase normal prosodic phenomena, such as elision, aphaeresis, and apocope, will occur.[28] Furthermore, these prosodic phenomena will not occur across dipode boundaries.[29] Such constraints are familiar to traditional classical metrics, where elision, which occurs naturally in a line, is forbidden from occurring across line boundaries. This is because the line-end syllable is extrametrical. (I ignore the few scattered exceptions, which are traditionally explained as literary stylization.)

[26]In the analysis of Beare 130, the Saturnian was nothing more than this: "one short group of words followed by another short group of words of about equal (or slightly less) weight."

[27]E.g., Cole 18; Goldberg 59.

[28]On the long-standing problem of elision in Saturnians, de Groot has said, "Il est impossible de décider si l'élision est admise quelque part."

[29]This is also consistent with the pattern that Saturnian dipodes are coextensive with syntactic phrases. Compare the prosodic phenomenon *raddoppiamento sintattico* (RS) in Italian, in which stressed final vowels cause gemination in following word-initial consonants in the same syntactic constituent. The phrase *una casa della città vecchia* can be realized as [*una casa*]$_{NP}$ [*della* [*città v:ecchia*]$_{NP}$]$_{PP}$ "a house in the old city" (with gemination), or [*una casa* [*della città*]$_{PP}$ *vecchia*]$_{NP}$ "an old house in the city" (no gemination). I am grateful to Enrica Sciarrino for verifying these examples. For more on RS, see Napoli and Nespor 1979. Other cool prosodic phenomena in Italian, such as stress retraction and "Gorgia Toscana," are discussed in Nespor and Vogel 1982.

A few lines that have traditionally been problematic are easily scanned. In the following examples, an × marks places where possible elision is prevented.

In Naevius 25.1–2:

(10) [post][quam⌣a]⟨uem⟩ | [as][pex]⟨it⟩|| [in] [tem]⟨plo⟩ | [An][chi]⟨sa⟩
(11) [sac][ra⌣in] [men]⟨sa⟩ | Pe[na]ti⟨um⟩ ||[or]di⟨ne⟩ | [po][nun]⟨tur⟩

In *CIL* I^2 10.4:

(11) [quibu'][si⌣in][lon]⟨ga⟩ | [licu][is]⟨set⟩[30] || [tibe⌣u]ti⟨er⟩ | [ui]⟨ta⟩

Furthermore, the placement of clitics corresponds to what we would expect from Latin phrase structure rules as they are usually reconstructed. In the Saturnian, clitics (including unemphatic pronouns, possessive adjectives, the copula, prepositions, and lexical clitics like *et* and *que*) bind with words in the same dipode. There is no enclisis across prosodic phrases. This will be evident in *CIL* I^2.10 below. Here are some further examples:

(12) mea puera | quid uerbi ||ex tu⌣ore | supra fugit? (Liv. Andr. 3)
neque tamen | te⌣oblitu' sum || Laertie | noster (Liv. Andr. 4)
blande⌣et docte | percontat || Aenea | quo pacto (Naev. 20)
plerique⌣omnes | subiguntur || sub unum | iudicium (Naev. 52)

To sum up so far: the literary Saturnian verse is a stylization of the native prosodic structure of Latin. In each line, the four dipodes are distinct prosodic phrases of maximally eight moras in duration (four feet). Each dipode is a prosodic domain in itself. Phenomena of the prosodic phrase, such as elision, must occur within the dipode, never across its boundaries. As a result, smaller syntactic units, which are defined in part by phenomena such as accent contours, do not normally span multiple dipodes.[31] This is consistent with the hierarchy as it

[30]The inscriber has written *licuset*: I restore the omitted *i* and the geminate *s*. In this case, the inscriber's error is not likely to represent contemporary pronunciation. Orthographic reduction of geminates was common practice; the omission of the vowel was probably a simple mistake.

[31]A reader has remarked that this constraint does not allow for discontinuous prepositional phrases, which are common in other literary Latin, such as *in Phrygiis Iunonem et Pallada siluis* (Ov. *Ars* 1.625). Strictly speaking, this is true. In the Saturnian, prepositions normally govern the heads of noun phrases. While these can span whole lines, as in Livius 13, there is

is generally construed: morphological word < clitic group < prosodic phrase < intonational phrase < utterance.[32] There are two or three apparent exceptions, in which words do cross a dipode boundary, which will be discussed below.

Inscriptional Evidence

Putting aside linguistic evidence for the moment, there is some evidence of a different sort for the prosodic boundary or caesura between dipodes. This may be found in the inscriptions of Saturnians.

Here is *CIL* I^2.1531 as inscribed:

(13) QVOD · RE · SVA · D[IF]EIDENS · ASPER[E]
AFLEICTA · PARENS · TIMENS ·[33]
HEIC · VOVIT · VOTO · HOC
SOLVT[O · DE]CVMA · FACTA
POLOVCTA LEIBEREIS · LVBE[34]
TES DONV · DANVNT ·
HERCOLEI · MAXSVME
MERETO SEMOL · TE
ORANT · SE · [V]OTI · CREBRO
C O N D E M N E S

Example 14 presents this poem scanned into verses. I have marked interpunctuation where the inscriber has placed it. I have also designated inscriptional line ends with a #.

(14)

quod · re · sua ·	| difeidens·	|| asper[e] #	| afleicta ·
parens · timens #	| heic · uouit·	|| uoto · hoc #	| soluto [·]
decuma · facta #	| poloucta	|| leibereis ·	| lube#tes

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nothing in the surviving corpus like the Ovidian line. In only a few cases do we find prepositions governing words that are not syntactically the heads of their noun phrases. One is Naevius 52, *sub unum iudicium*. Here pragmatics must be a factor, with contrastive focus on *plerique* and *unum*. Another example is CIL I^2.10: *quibus sei in longa licu[is]set tibe utier uita*. Here again pragmatics must be a factor. The adjective *longa* contrasts with the message of the whole monument, which is that the dead man's life was too short. A similar explanation for the initial position of *tibe* is also plausible. Focality causes accentual remapping in all stress languages I know (compare the English example above, n. 4); the resulting prosodic contour would in fact be normal in these cases. A slightly odd example is *hospes gratum est quom apud meas restitistei seedes* (CIL I^2.1202). This text, however, which was written around 140 B.C.E.—after the demise of the Saturnians—has other peculiarities as well, and I do not think it is indicative of Saturnians as a whole.

[32]See, e.g., Zwicky 379–97. For the status of the clitic group somewhere between phonological word and prosodic phrase, see Nespor and Vogel 1986: 145–63.

[33]*CIL* I.1175 shows no punctuation here, nor do I see any in the *CIL* I.2 fasc. 4 photograph.

[34]One may restore *n* after nasalized *e*, but the inscription shows that it was not pronounced.

donu · danunt · #	Hercolei·	|| maxsume · #	mereto
semol · te# orant ·	se · uoti·	|| crebro #	condemnes

Of the nine line ends (not including the final one), seven occur at dipode boundaries. Note also that the inscriber has left extra spaces at metrical line-ends. Compare also *CIL* I^2.10.

(15)
QVEI · APICE INSIGNE · DIAL[IS · FL]AMINIS · GESISTEI
MORS · PERFE[CIT ·]TVA · VT · ESSENT · OMNIA
BREVIA · HONOS · FAMA · VIRTVSQVE
GLORIA · ATQVE · INGENIVM · QVIBVS SEI
IN · LONGA · LICVSET · TIBE VTIER ·[35] VITA
FACILE · FACTEIS [ ][36] SVPERASES · GLORIAM
MAIORVM QVA · RE · LVBENS · TE · IN GREMIV
SCIPIO RECIPT · TERRA · PVBLI
PROGNATVM · PVBLIO · CORNELI

(16)

quei · apice insigne	Dial[is	|| fl]aminis ·	gesistei #
mors · perfe[cit ·]	tua ·ut ·essent ·	|| omnia #	breuia ·
honos · fama ·	uirtusque #	|| gloria · atque ·	ingenium ·
quibu' sei # in ·longa	licu[i]set ·	|| tibe utier ·	uita #
facile · facteis	superases ·	|| gloriam #	maiorum
qua · re · lubens	te · in gremiu #	|| Scipio	recipit ·
terra · Publi #	prognatum ·	|| Publio ·	Corneli

Here again the majority of inscriptional line ends occurs at dipode boundaries (seven out of eight). For a total of seventy-three morphological word breaks, there are forty-six dipode boundaries (not including the end of the last word). That is, about 63% of word breaks coincide with dipode boundaries. Of the twenty-five places that lack punctuation, twenty, or 80%, coincide with these boundaries. If we discount inscriptional line ends, the ratio remains the same. Of nine word breaks that lack punctuation and are not at inscriptional line ends, seven occur at dipode boundaries.

It is often the practice of inscribers to mark the boundaries of words with punctuation (and so I have assumed that, where the stone is chipped, there was punctuation). Some inscriptions manifest rigorous punctuation between all morphological words, though occasionally there is no punctuation within clitic groups. In the above inscriptions, interpunctuation is periodically omitted under

[35]This punct is printed in *CIL* I.33 and seems to be supported by Degrassi 134.

[36]The masonry join is chipped here, making it impossible to tell whether there was punctuation originally.

such circumstances. The statistically significant number of omitted punctuations coincides precisely with the location of dipode boundaries. If the purpose of interpunctuation was to distinctly separate entities regarded as "words" in places where the reader might desire some assistance, then two distinct but concordant conclusions can be drawn. On the one hand, clitic groups were considered single words of a sort, and might not be punctuated. On the other hand, as the poem was read, the meter implied natural breaks between dipodes, with the result that interpunctuation was deemed superfluous; the meter itself provided the interpunctuation.

With such a small sample, conclusions must be drawn with caution. Nevertheless, I find these statistics compelling. In any case, the coincidence of inscriptional line-end with dipode boundary is significant.

Penta- and Hexasyllabic Words

A question arises whether the length of the dipode, maximally four bimoraic feet, is lexically too restrictive. What if the poet wanted to use a long word? Thomas Cole has observed that certain metrical patterns are "never found in the portion of a half-line which precedes the [principal caesura]."[37] These patterns are – ⏑ – – ⏑, ⏑ – ⏑ – ⏑, – ⏑ – ⏑ –, and ⏑ – – ⏑ –. He remarks that there is no comparable restriction on the sequence of heavy and light syllables in tetrasyllabic sequences. My schema formally states that this must be the case, because these four metrical patterns could not be contained within a dipode that must consist maximally of four moraic trochees. Cole's relevant statement is essentially correct, that "the composers of the Saturnian regarded a succession of two short syllables as equivalent, at certain points in the verse at any rate, to a single syllable, whether long or short, so that pentasyllabic units could substitute for tetrasyllabic ones...." This is the surface result of the constraint that the prosodic unit of the dipode may contain no more than four moraic trochees. Pentasyllabic words such as *inserinuntur* (Liv. Andr. 34B) and *Sicilienses* (Naev. 46B) conform, but pentasyllabic words in which more than two single moras are stranded will violate the rule.

Nearly all Saturnians observe this constraint, but there are two noteworthy exceptions, one a pentasyllabic and one a hexasyllabic word. The pentasyllabic offender is furthermore cut in stone, so I cannot resort to arguing it away on

[37]Cole 25.

textual grounds.[38] In *CIL* I^2.9, *Tempestatebus* cannot be contained within a single dipode, for it scans as [Tem][pes][ta]te⟨bus⟩. Furthermore, the word is preceded by the single word *dedet*, the first word in the line, which, left on its own, would form a first dipode of unparalleled brevity. Forms of *dare* are also often clitics in Latin. All these factors suggest that we might resort to breaking *Tempestatebus* across two dipodes:

(17) [de][det] [Tem][pes]||[ta]te⟨bus⟩ ||

The same solution may be applied to the latter half of the line in Naevius 38, *exta ministratores*. After normal iambic shortening,[39] the pentasyllabic *ministratores* would indeed fit snugly within a single colon, and so could be left alone. But leaving the solitary *exta* would result in an unusual imbalance where the second dipode in the colon would be twice as heavy as the first. If we employ the same repair strategy we used on *CIL* I^2.9, we can correct the line thus:

(18) || [ex]ta [minī][stra]||[to]⟨res⟩

Again, I acknowledge that this may or may not be accurate, since this repair is not metrically required. Repairs must, however, be made on the one surviving hexasyllabic word at Naevius 3.2:

(19) consul partem | exerciti || in expeditionem

In fact, according to the rule that prepositions form a prosodic unit with the words they govern, the latter half of this line consists entirely of a single heptasyllabic prosodic word. If we perform the same repair strategy as we used on the pentasyllabic words and fill the first of the two final cola with as many feet as possible, we find:

(20) || i[n ex][pedi]ti|[o]⟨nem⟩

[38]I must disagree with Kloss 97, who claims that that the textual fragments and (complete!) epigraphic poems are metrically "oft nicht besonders ähnlich." Any treatment of literary texts must be able to account for texts carved in stone, which cannot be emended to suit the theory.

[39]Compare the treatment of *ministerium* in Plautus (Lindsay 1900: 34). See also Lindsay 1896: 172–73; Sturtevant 242; Prosdocimi 604.

It is an interesting result of these repairs that the syllable that would bear primary stress under either the Plautine or the Classical system has been relocated to the head of a dipode.

(21) dedet Tempes|tátebus
exta ministra|tóres
in expediti|ónem

If these verses were written at a time when Latin words still had primary stress, then this could be evidence that the location of the secondary stress accent was calculated, as one would expect, by a rule such as the antepenultimate rule. The hypothesized transition from Old Latin initial stress to Plautine and Classical (ante)penultimate stress implies a re-analysis whereby speakers swapped the primary and secondary accents. These lines are the only concrete evidence I know of for this hypothesis.

Some More Scanned Saturnians

Up to this point I have focused on verses inscribed in stone. I present here a short sample of scanned verses from the textual tradition. This sample is short in the interest of space; the entire corpus can be successfully scanned in strict accordance with all the rules presented above. I print the text as it is in Buechner. I will not burden the reader with bracketed foot notation at this point.

From Livius Andronicus:

7. tuque mihi | narrato || omnia | disertim
9. in Pylum | deueniens || aut ibi⟨dem⟩ | ommentans (suppl. Buechner)
10. ibidemque | uir summus || adprimus | Patroclus
11. partim errant | nequinont || Graeciam | redire
13. apud nympham | Atlantis || filiam | Calypsonem
14. utrum genua | amploctens || uirginem | oraret
18. namque nullum | peius || macerat | humanum
quamde mare | saeuom: || uires cui | sunt magnae
⟨eum⟩ topper | confringent || importunae | undae (suppl. Lindsay)
20. nexebant | multa⌣inter se || flexu nodum | dubio (*nodorum* codd.)
23. quando dies | adueniet || quem profata | Morta est
34. simul duona | eorum || portant | ad nauis
multa⌣alia | in isdem || inserinuntur | ...

From Naevius:

6. eorum sectam | sequuntur || multi | mortales
multi_alii | e Troia || strenui | uiri
ubi foras | cum auro || illi⟨n⟩c[40] | exibant (suppl. Vahlens)
8. inerant | signa_expressa || quomodo | Titani
bicorpores | Gigantes || magnique | Atlantes
Runcus ac | Purpureus || filii | Terras
15. patrem suum | supremum || optumum | apellat
21. iamque_eius mentem | fortuna || fecerat | quietem
43. conuenit | regnum simul || atque locos | ut haberent
44. septimum | decimum_annum || ilico | sedent

CIL I^2.7:

Cornelius | Lucius || Scipio | Barbatus
Gnaiuod patre | prognatus || fortis uir | sapiensque
quoius forma | uirtutei || parisuma | fuit
consol censor | aidilis || quei fuit | apud uos
Taurasia | Cisauna || Samnio | cepit
subigit omne | Loucanam || opsidesque | abdoucsit[41]

CIL I^2.11:

Magna | sapientia || multasque | uirtutes
aetate | quom parua || posidet | hoc saxsum
quoiei uita | defecit || non honos | honore
is hic situs | quei nunquam || uictus est | uirtutei.
annos gnatus | XX || is I[oc]eis | mandatus
ne quairatis | honore || quei minus sit | mandatus....

Stress and Ictus, and the Loss of the Saturnian

Quianam Saturnium populum pepulisti?
Naevius 61

My analysis implies that the head of each dipode should have greater prominence than the other metrical positions in it. In other words, ictus should coincide with stress accent (which the evidence from Plautus and Terence proves was typical of

[40]Perhaps *illinc⟨e⟩*?

[41]The *s*, not printed in *CIL*, was restored by Wölfflin 1890. His restoration has apparently been overlooked by many modern publications.

Latin metrics). It has long been hypothesized that Proto-Italic was a word-initial stress language. Evidence for this assumption lies chiefly in the fact that vowel weakening and syncope are visible word-medially throughout the Latin lexicon, but not word-initially.[42] This suggests that, at an earlier stage, the language had an initial word accent that protected the initial syllable from weakening. Such a system is also implied by the Saturnian, if stress and ictus are to coincide. We may then posit the following rules for Old Latin accentuation.

(22) For stress assignment in **Old Latin:**

1. Final syllable is extrametrical.
2. Parse moraic trochees from left to right.
3. Incomplete feet are banned, except in word-initial position.
4. Place the primary accent on the head of the first foot.
5. Place the secondary accent on the head of the final foot.

Our literary testimony of Latin begins at a time when production of Saturnians is practically at an end, and when the Plautine system of accentuation is in use. This linguistic innovation broke the hierarchical compatibility between the Saturnian meter and Latin prosody. Coincidence of stress and ictus was no longer guaranteed, and so an important feature of the meter was broken, rendering it incomprehensible to native speakers.[43] By historical accident, this linguistic change coincided with a time of rapid expansion and changing artistic taste in Rome. In particular, Greek poetry was quickly becoming the canon against which all Roman poetic production would be measured. It is no surprise that the wretched Saturnian, now not only an old-fashioned Italic relic but seemingly unmetrical babble as well, became a symbol for all that was wrong with old Latin poetry.[44]

In this paper, I have tried to demonstrate that the Saturnian verse was based on Latin's underlying prosodic structure, of which native speakers were

[42]See Vendryes. There are other clues as well, such as the Old Latin use of alliterative verse (89). See also Allen 151–99, and esp. 188–91.

[43]Uri Tadmoor of the University of Hawai'i has informed me of a modern parallel: Israeli students today easily learn poems with the modern Sephardic accentuation, but they have great difficulty memorizing nineteenth-century verses based on the Ashkenazi system of accentuation because, Professor Tadmoor tells me, they "simply don't make sense."

[44]Literary disdain for the Saturnian from Ennius onward is well known. It is usually the first thing (and sometimes the last) that the student of the Saturnian is taught, so it needs no lengthy rehearsal here. The best-known passages are Enn. *Ann.* 207 Skutsch; Verg. *G.* 386; Hor. *Ep.* 2.1.157–60. For the perplexity in the grammatical tradition, see *G.L.* 6.256.10–14 Keil.

intuitively aware. The system I propose is validated by its successful prediction of previously inexplicable phenomena, such as the distribution of elision and the location of clitics. The system also provides further evidence for the theory that Old Latin was a word-initial stress language. The shift to Plautine accentuation left the Saturnian meter irreconcilably at odds with the language's new prosodic structure. In a very short time, its metrical system became unintelligible and was abandoned. [45]

[45]George Sheets has recently argued (in a paper delivered at the 1997 APA convention) that Catullus created Saturnian rhythms throughout poem 34. In a poem marked by archaic diction, archaic rhythms would certainly fit well. There is no reason why a poem that may be scanned as a quantitative meter might not also be engineered as a moraic meter by a clever poet, especially a poet who was himself born in a more "rustic" province, where the archaic language may have persisted longer than at Rome. Indeed, it is possible to scan most of Catullus 34 according to the scheme presented here (including, astonishingly, the rules regarding elision and clitic groups). Sheets' discovery is an exciting one, revealing a new kind of poetic play.

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