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# Abstract similarities between Greek and Latin dialogue meters

## 1. Introduction

Any theory of poetic form that contemplates the connection between the structure of poetry and the structure of language must assume a distinction between *natural* and *artificial* form. Natural form is grounded in the linguistic system, based on linguistically relevant categories, rule-governed, and may be learned in the same way as linguistic grammar. Many aspects of meters appear as "stylized phonology": the structure of the line imitates the prosodic hierarchy (Hayes 1988, 1989); the alternation between strong and weak positions mimics the common alternating stress patterns found in languages, and natural linguistic constraints such as avoidance of lapses and clashes of prominence find their place in both meter and language (cf. Golston 1998). But the linguistic system does not completely determine the poetic grammar, because poetry, to a far greater extent than grammars of languages, is subject to consciously imposed constraints. In this sense, the structure of verse contains not only natural but artificial aspects as well. Artificial aspects of form may not make use of linguistically relevant categories, and may not be learned explicitly, rather than in an internalized fashion.

Tension between natural form and arbitrariness is manifest in cases where one language borrows a meter from another. In the recipient language, the poet's task is to imitate the meter of the donor language as closely as possible. The problem is that what is natural in one language may run counter to the linguistic system of another, and the borrower is left to find the compromise between not innovating too far from the source and not stretching the limits of his native phonology.

The history of Greek meters in Latin presents a good opportunity to investigate this tension, because a number of factors favor both the development of new natural features of the meter as well as artificial preservation of the features of the donor language. On the one hand, the traditions possess an explicit nomenclature and a theory of meter. Latin phonology is, in relevant respects, similar to Greek phonology – e.g. in possessing a syllable weight distinction – to make a faithful transfer of the basic metrical principles possible. On the other hand, Latin phonology is sufficiently different from Greek to make that transfer non-trivial. In particular, Latin is widely recognized to have possessed a dynamic accentual system, in contrast to the pitch accent of Greek (Allen 1965, 1973).

In this paper I will investigate the borrowing and innovation in the meter of the Early Latin comic playwright Titus Maccius Plautus. While imitating the Greek New Comedy, he imposes a characteristically Latin 'flavor' on the meter. The question is, what is *Latin* about Plautus's versification? Why are some features transferred intact, while others are lost? What is the origin of Plautus's innovations in the metrical constraints? The answer I will give at the end of this investigation is that Plautus consciously borrowed the superficial aspects of meter in Greek comedy: the number of positions in the line and the core correspondence rules. Both the Greek and the Latin meters are characterized by additional bridge constraints, no less important than the correspondence rules, but less accessible to introspection by the practitioners. Those additional constraints at first appear rather different between Greek and Latin, and must constitute an innovation on the borrower's part. But if formulated in terms of deeper properties of the phonological structure of the two languages, the constraints are surprisingly parallel, and reflect the natural tendency of the meter toward hierarchical organization.

In the remainder of the paper, I will discuss the relevant aspects of the Greek and Latin systems. For each language, I begin with a brief description of its prosody, i.e. the metrically significant facts about its stress system, describing its analysis in terms of foot structure. Then I move on to the metrical constraints and their interpretation in terms of that analysis, focusing on the bridge constraints. I conclude by comparing the two systems and arguing that their apparent diversity

masks a deeper similarity, which must have arisen naturally rather than through borrowing.

## 2. Greek prosody

Greek possessed a pitch accent, realized with a high tone. It was subject to several generalizations, some governing the type of melody (rising or falling) permitted on a given syllable, others governing the placement of the accent in the word. Only the latter type of generalization is relevant here.

The placement of the accent of a large class of Greek words, including finite verbs, most neuter nouns, and certain classes of compounds, is predictable. Ignoring the final consonant, accent falls on the penultimate syllable if the final syllable is light. Otherwise, the antepenultimate syllable is accented. The analysis of this generalization, known as RECESSIVE accent, originally due to Sauzet (1989), assigns a moraic trochee as close to the right edge of the word as possible, with final consonant extrametricality. The pitch accent melody is obtained by aligning a HL* tonal sequence with the head of that foot (the notation means that the L* tone is placed on the head of the foot, and the H tone on the syllable immediately preceding it, if any). If the word ends in a heavy syllable, that syllable is parsed into a foot, and the penult is accented; otherwise, the foot comprises the final two syllables, and the antepenult receives the high pitch (see also Golston 1990, and Steriade 1988 for an alternative analysis).

I will not rehearse Sauzet's and Golston's arguments in favor of this analysis here. Suffice it to say that it is supported by evidence internal to Greek, such as word minimality – the smallest lexical word of the language is identical in size to the moraic trochee (excluding particles and other function words) – as well as on cross-linguistic grounds.

The upshot of the Sauzetian analysis is that, in addition to pitch accent, given by the HL* tonal melody, Greek also possessed another type of prominence, given by the foot structure. While languages with two different prominences are typologically uncommon, they are not

unattested (Devine and Stephens 1994: 210-11). It is reasonable to assume that this second prominence was a matter of stress, and the analysis entails that this stress fell on the final syllable if heavy and the penult otherwise. This assumption need not commit us to a particular phonetic claim about the nature of that stress; as Devine and Stephens point out, the fact that Modern Greek stress reflects the old pitch accent suggests that the second prominence was "nonaccentual and ... phonetically rather weak" (1994: 211). Typologically, languages resort to a wide variety of phonetic realizations of stress; in some cases, the presence of a phonological prominence can be hard to detect phonetically. What matters here is that the final syllable is parsed by the head foot of the word.

## 3. Greek meter

Work on meter independently converges on the same generalization: final heavy syllables are stressed. Here I will outline one of the arguments, showing that a well-known restriction called Porson's Law in Greek dramatic meters is best understood if Greek is assumed to have stress of final heavy syllables (Allen 1973: 304 and ff., Devine and Stephens 1984: 26, 1994: 177 and ff.).

The meters considered are the iambic trimeter and trochaic tetrameter catalectic, whose schemata are shown below (see Raven 1962, West 1982 for a basic description), where –, ∪, and × stand for a bimoraic, monomoraic, and indifferent positions, respectively.

(1) Trimeter × – ∪ – × – ∪ – × – ∪ ×
Tetrameter – ∪ – × – ∪ – × – ∪ – × – ∪ ×

To make it easier to refer to particular metrical positions within then line, I will use a notation based on, but somewhat different from, that of Gratwick 1993, 1999. Anticipating the theoretical arguments made below, the notation groups positions into dipodies (groups of four) rather than feet (groups of two). They are identified by the letters *a*, *B*,

*c*, and *D*. The grouping proceeds right-to-left, and the dipodies are numbered accordingly. The positions are identified by the number of the dipody they occur in. The two meters will be notated as follows:

(2)

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trimeter | | | | $a_3$ | $B_3$ | $c_3$ | $D_3$ | $a_2$ | $B_2$ | $c_2$ | $D_2$ | $a_1$ | $B_1$ | $c_1$ | $D_1$ |
| Tetrameter | $B_4$ | $c_4$ | $D_4$ | $a_3$ | $B_3$ | $c_3$ | $D_3$ | $a_2$ | $B_2$ | $c_2$ | $D_2$ | $a_1$ | $B_1$ | $c_1$ | $D_1$ |

The positions identified by the uppercase letter *B* and *D* are strong; *a* and *c* are weak.

As discussed at length in Prince 1989, both the trimeter and tetrameter are subject to a word boundary constraint (caesura or diaeresis in the trimeter and tetrameter, respectively). The majority of lines have a break after $a_2$; some have a postponed break after $c_2$. Despite the standard metrical schemes presented in the handbooks (Raven 1962: 32, 35; West 1982: 40), both options are available in both meters (see West 1982: 40 fn. 29, 91).

The basic correspondence constraints for tragedy require the strong positions to contain two moras, and *c* positions to contain one mora. The *a* positions may be either mono- or bimoraic. Strong bimoraic positions can be implemented either by a heavy syllable (H), or RESOLVED into two lights (LL); the latter option (RESOLUTION) is not available in the last dipody of the line. Occasionally, the initial weak in the trimeter ($a_3$) may also be resolved. The most salient difference between comedy and tragedy is that in comedy, *c* positions except $c_1$ may be bimoraic, but only if resolved. These constraints are summarized below (see Prince 1989 for a detailed analysis).

(3) CORRESPONDENCE CONSTRAINTS

ALL STYLES

a. All positions are either bimoraic or monomoraic.
b. Strong positions are bimoraic.

TRAGEDY

c. *c* positions are monomoraic.
d. Weak positions except $a_3$ are monosyllabic.
e. All positions within the last dipody are monosyllabic.

COMEDY
c'. $c_1$ is monomoraic
d'. *c* positions do not contain a heavy syllable

These constraints gloss over several other details, such as the indifference of line-final positions and the absence of resolution line-finally and pre-caesurally. These details will not be relevant for what follows.

Prince (1989) interprets the different behavior of the two types of weak positions, *a* and *c*, as a reflection of higher-level grouping of metrical feet into dipodies, following Hayes' work on the relationship between meter and the prosodic hierarchy (1988, 1989). While Prince assumes an iambic structure in the trimeter and a trochaic structure in the tetrameter, as suggested by the names of the meters, it is standardly recognized that the structure of the two meters is more parallel than their traditional designations as iambic and trochaic might suggest (e.g. West 1982: 40, Raven 1968: 27). The tetrameter is identical to the trimeter with three positions added at the left edge. Constraints such as Porson's Law, Knox's bridges, and other facts investigated by Devine and Stephens 1984, exist in parallel versions for the trimeter and tetrameter. The location of the caesura is parallel between the two meters, as I mentioned above (West 1982: 40, 91).[1] Furthermore, there are no constraints referring to constituency that are *distinct* for the two meters.

I will assume that the constituent structure of both meters is trochaic, as illustrated below.[2]

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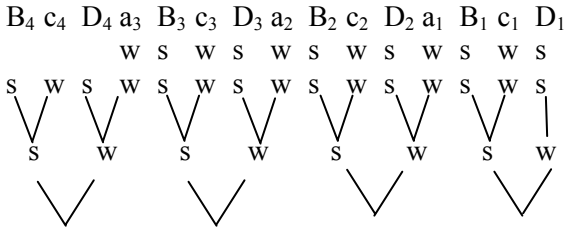
[1] Prince 1989, who follows the standard metrical schemes depicted in the handbooks, overlooks the parallelism of the location of the caesura/diaeresis in the two meters in his analysis.

[2] For reasons of space, I will not justify the choice of trochaic (rather than iambic) structure here. What is crucial is that the constituent structure in the two meters must be identical, a point I take to be fairly uncontroversial, *contra* Prince 1989. The discussion below can be reframed in terms of an all-iambs analysis just as well as in terms of the all-trochee analysis.

(4)




Two clarifications on this proposal are due. First, I am not making any claims here about the grouping above the level of the dipody; hence, the highest nodes in the tree in (4) remain unlabeled. Second, the initial position in the trimeter appears orphaned in this structure. I will assume here that this position is adjoined to the following foot. Nothing will crucially depend on this assumption, however.

In addition to the basic correspondence rules, the meter of tragedy is constrained by the following restriction (Raven 1962, West 1982).

(5) PORSON'S LAW
*$a_1$* and *$a_3$* may not contain the final heavy syllable of a polysyllabic word.

At first, the Law appears rather unmotivated. However, a detailed study of the interaction of the Law with various types of boundaries has revealed that the Law prohibits phonological prominence from occurring in *a*. One reasonable interpretation is that the prominence in question is really word stress, and that Porson's Law singles out the *a* positions as inimical to word stress. Thus, the metrical evidence converges on the same generalization about Greek stress that was proposed by Golston 1990 to account for accentuation: word-final heavy syllables bear main stress. Furthermore, as Devine and Stephens (1994: 121 and ff.) discuss at length, there is evidence for secondary stress in Greek as well. The simplest assumption is that secondary stress was due to a full right-to-left parse of the word into moraic trochees, placing it on all heavy syllables and on the initial light syllables in sequences of two lights.

Porson's Law can be conceived as part of a larger generalization about Greek dramatic meters. Recall the restrictions on weak positions in the basic correspondence constraints in (3): *c* positions are

monomoraic in tragedy, and may be resolved in comedy. If we assume secondary stress on non-final moraic trochees, the basic correspondence constraint for *c* can be understood to prohibit ANY word stress, primary or secondary, from occurring there. In other words, the restriction on the *c* position in tragedy is the stronger version of Porson's Law: the latter prohibits only the primary stress from occurring in *a*; the former prohibits all stresses from occurring in *c*. In comedy, likewise, *c* is subject to the same restriction, with the added relaxation that the prohibition applies only to heavy syllables, not to sequences of two lights.

(6)

| | TRAGEDY | COMEDY |
|---|---|---|
| *c* | no stress | no stressed heavy syllables |
| *a* | no primary stress | |

In terms of the proposed constituent structure in (4), the upshot of these constraints is to constrain more stringently the weak position in the strong half of the dipody. As I will argue below, apparently unrelated Latin metrical constraints impose a very similar pattern of restrictions.[3]

## 4. Latin prosody

The familiar Latin stress rule assigns stress to the penult if it is heavy and antepenult otherwise. The standard analysis assumes final extrametricality and a moraic trochee built as close to the right edge as

[3] A additional detail is that Porson's Law does not apply when the word ending in $a_1$ is followed by a clitic. This suggests that the main stress rule of the language applied not within phonological words, but within clitic groups.

possible.[4] This is illustrated with all the possible shapes of trisyllabic words below.

| (7) | (fáci)le | 'easy.NEUT' | (cán)dida | 'white.FEM.NOM' |
|---|---|---|---|---|
| | (méli)us | 'better' | (cán)didā | 'white.FEM.ABL' |
| | a(mṓ)re | 'love.ABL' | dē(pṓ)ne | 'set aside.IMP' |
| | a(mṓ)rem | 'love.ACC' | dē(pṓ)nō | 'set aside.1SG' |

A number of classic arguments have been used to support the moraic trochee analysis, among them word minimality, allomorphy, syncope, and iambic shortening (Prince 1990, Mester 1994).

Disyllabic words shaped LL are parsed into a single moraic trochee, e.g. (*béne*). The footing of LH words like *cánō* is more problematic, because the string LH cannot be parsed with perfect moraic trochees. Two reasonable parses are (*cá*)*nō*, with a degenerate foot, and (*cánō*), with a heavy syllable in the weak position of a non-canonical trochee. It is the latter option that is chosen in iambic words in Latin (Prince 1990, Mester 1994). In Plautus, iambic words often occupy a single metrical position. This type of resolution is standardly interpreted as due to iambic shortening, a phonological process that converts non-canonical (LH) feet into unmarked moraic trochees (LL) by either shortening the long vowel in words like *canō*, or rendering the coda non-moraic in words like *canit* 'sing.3SG'.

In addition, it is uncontroversial that Latin had secondary stress, obtained by an exhaustive parse of the word into moraic trochees (e.g. Soubiran 1988, among others). The directionality in Classical Latin was right-to-left, in Plautine Latin, left-to-right.

While the LH sequence of a disyllabic word is parsed by a single foot, the same sequence at the beginning of longer words such as *a*(*mán*)*te* and *mi*(*sér*)*rumum* 'most.miserable.ACC' was not. I refer the reader to Prince 1990 and Prince and Smolensky 2004[1993] for a full analysis. The key is that Latin categorically prihibits subminimal (L) feet, categorically prohibits final stress except in monosyllables, and

[4] This rule works for Classical Latin stress. In Plautine Latin, the generalization is the same except stress is assigned to the *preantepenultimate* syllable in words like *fácilia*, *séquimini*.

avoids (LH) feet as long as the other conditions are met. It follows that *cánō* is parsed as (LH) but not *(L)H or *L(H), while *amánte* comes out as L(H)L but not *(LH)L.

Furthermore, Mester (1994) has argued that, in addition to main-stress feet exemplified in (7) above, Latin must have parsed the final syllables of polysyllabic words into what he calls subsidiary feet. This argument is based on the fact that the final syllables of HLH words can undergo a process parallel to iambic shortening, called cretic shortening. At the same time, the subsidiary feet were covert, in the sense that there is no evidence of any kind that their head was endowed with any kind of phonetic prominence; they reflect purely abstract organization of syllables into higher constituents. The upshot is that words shaped HLL and HLH are footed (H)(LL) and (H)(LH), respectively.

The assumptions about footing of Latin words are summarized below, where I repeat the data from (7) above with subsidiary feet and secondary-stress feet added, and include the footing of disyllables.

| | | | | |
|---|---|---|---|---|
| (8) | (fáci)le | 'easy.NEUT' | (cán)(dida) | 'white.FEM.NOM' |
| | (méli)(us) | 'better' | (cán)(didā) | 'white.FEM.ABL' |
| | a(mṓ)re | 'love.ABL' | (dȅ)(pṓ)ne | 'set aside.IMP' |
| | a(mṓ)(rem) | 'love.ACC' | (dȅ)(pṓ)(nō) | 'set aside.1SG' |
| | (béne) | 'well' | (pṓ)ne | 'put.IMP' |
| | (cánō) | 'sing.1SG' | (pṓ)(nō) | 'put.1SG' |

## 5. Latin meter

The Latin equivalents of the Greek iambic trimeter and trochaic tetrameter are called the iambic senarius and trochaic septenarius. Their basic schemata are identical to the Greek ones shown in (2). The correspondence rules in Plautus are the same as the rules of Greek comedy (see (3) above), with the following relaxation: heavy syllables are admitted to all positions except $c_1$, i.e. (3d') does not apply in

Plautus. Just as in Greek, some details are missing, e.g. the indifference of the line-final position.

(9) CORRESPONDENCE RULES (PLAUTUS)
a. All positions are either bimoraic or monomoraic.
b. Strong positions are bimoraic.
c. $c_1$ is monomoraic.

### *5.1 Resolution*

The metrical evidence converges on the same moraic trochee as the linguistic evidence. The resolution facts, in particular, support the analysis of Latin stress summarized above. While resolution is widely permitted in Plautus, not any two light syllables can occupy a single metrical position. In particular, a word boundary cannot intervene between two syllables in resolution. Such a restriction is best interpreted in terms of the following addition to the correspondence rules:

(10) A resolved bimoraic position comprises a linguistic foot.[5]

This constraint is well-supported cross-linguistically, as similar constraints occur in other meters with resolution, such as English (Prince 1989, Hanson 1991).

Split resolutions are acceptable when the boundary is between clitics. Clitic boundaries also do not count as word boundaries for a number of other restrictions, suggesting that the domain of footing was the clitic group, not the word.

An additional piece of evidence for (10) comes from the resolution pattern in sequences of three light syllables (LLL), where two options are available – resolving the first two (2+1) or the second two (1+2) syllables. Drexler 1967 and Soubiran 1988 have exhaustively demonstrated that while 2+1 is the preferred pattern, the likelihood of

[5] The constraint cannot say, as an anonymous reviewer suggests, that *any* bimoraic position comprises a linguistic foot. The reason is that iambic words are footed (LH), but can span two positions, the second of which is bimoraic.

1+2 increases if there is a morpheme boundary after the first syllable. Thus, the first three light syllables of *benevolens* 'willing' are always metrified as 2+1, but the first three syllables of words like *re-fugiat* 'flee.SBJ.3SG' are more likely to appear in the 1+2 configuration (Soubiran 1988: 216ff., 279ff.). These facts are natural if (10) is embraced, along with the reasonable and cross-linguistically motivated assumption that foot boundaries tend to align with morphological boundaries. The footing (*bene*)(*volens*) and *re*(*fugi*)*at* would account for the observed resolution effects. The claim is undermined by the fact that such alignment is optional, but the statistical tendencies are well-document and lean in the direction that supports (10).

A further piece of evidence for (10) points specifically to the moraic trochee analysis with subsidiary feet, as outlined in the preceding section. While resolution of two word-final light syllables is generally avoided, it is possible under certain circumstances (Questa 1967: 129, 138). In words consisting of three light syllables (LLL), resolution of final LL is categorically excluded; such words always appear in the 2+1 configuration. But resolution of final LL in words shaped HLL is attested (see also Soubiran 1988: 209, 274). This pattern is readily explained in light of (10) and the moraic trochee analysis with subsidiary feet, where the two types of words are footed (LL)L and (H)(LL), respectively.

Equipped with this analysis of Latin stress, I move on to the bridge constraints employed by Plautus.

### *5.2 Higher-level grouping*

Plautus's meters at first appear rather unstructured, because, unlike in Greek, any weak position but the last can be realized bimoraically, with either a heavy syllable or resolution. Not only is the difference between *a* and *c* weaks obliterated, but even the basic rhythmic alternation between strong and weak may be obscured, because very few lines consist of a sequence of perfect LH iambs, while nearly a quarter have only bimoraic positions up to the obligatory penultimate light (one all-LH lines and 91 all-bimoraic lines out of 414 in the *Menaechmi*, by Gratwick's count (1993: 259; Fortson 2008: 35, fn.7)).

However, even if the basic Plautine constraints do not refer to *a* and *c* separately and thus give no evidence of the ramified structure in (4), the two halves of the Latin dipody are asymmetric in a more subtle way. Two other constraints, traditionally called Meyer's and Luchs' Laws, relate the presence of word boundaries after strong positions (*B* and *D*) to the mora count of the preceding weak positions (*a* and *c*), as follows: if a word boundary follows *B* or *D*, the preceding *a* or *c* must be bi- or monomoraic, respectively (Lindsay 1900, 1922, Questa 1967, Soubiran 1988). The first half of this restriction is Luchs' Law; the second half is Meyer's Law. (Luchs' Law only applies to the last dipody – to the $B_1$ and $a_1$ positions, whereas Meyer's Law exerts its pressure throughout the line).

(11) a. **Luchs' Law**
If a polysyllable ends in $B_1$, the preceding $a_1$ is bimoraic.
b. **Meyer's Law**
If a polysyllable ends in *D*, the preceding *c* is monomoraic.

The upshot of these constraints is that, just as in the corresponding Greek meters, *c* is preferentially monomoraic, but only when the following strong position ends a word. These constraints are a Latin innovation; Greek shows no tendency to relate word boundaries to mora count of positions in the same way. Thus, the tendency to differentiate *a* and *c* was at once relaxed and made more strict by Plautus. On the one hand, Plautus limits the environments in which the mora count of *a* and *c* is regulated. But on the other hand, Plautus makes the difference between *a* and *c* more extreme, by not only requiring *c* to contain one mora, but also by prohibiting *a* from the same.

For the same reasons as in Greek, the constituent structure of the senarius and the septenarius must be assumed to be identical. The meters are 'right-aligned'; there are no constraints that distinguish them in a way suggesting different constituency. I will once again assume the trochaic structure depicted in (4) above.

Despite the simplicity of their statement, a troubling aspect of Luchs' and Meyer's Laws is the arbitrariness of the restriction they impose. Why should the word boundary after one position be related to the mora count of a neighboring position, and why in this particular

way? In the remainder of this section I will suggest that Luchs' and Meyer's Laws are best understood as restrictions on *stress feet* rather than word boundaries, and once understood in this way, they appear as natural rather than arbitrary. The approach pursued here is related and complemetary to that of Fortson 2008.

### *5.3 Luchs' Law*

Let us begin with Luchs' Law. The following representative examples of line endings show that when a line ends in an iambic word (12a), the preceding two positions are filled with either a HH or LLH sequence, making the *a* position bimoraic. On the other hand, whenever *a* is monomoraic, it either belongs to a word comprising the last four positions of the line, as in (12b), or it is itself followed by a word boundary, as in (12c). The constructed configurations shown in (12d) illustrate what is excluded by Luchs' Law: in these cases, *aB* either comprises or ends a word, and *a* is monomoraic. The syllables occupying the positions $a_1B_1$ are underlined.

(12) a. laevā tibī (*Poen.* 1073)
'your left hand'

mercēdem ferās (*Poen.* 15)
'earn [your] pay'

sapiunt magis (*Bacch.* 408)
'know better'

b. miserrumum (*Bacch.* 1067)
'most miserable'

indīligentia (*Per.* 557)
'negligence'

c. sinite trānsigī (*Poen.*117)
'let [it] go through'

esse crēdidit (*Men.* 1145)
'believed to be'

d. *bonā tibi
*abstinēs manum

rūre redierit (*Merc.* 586)
'will have returned from the country'

The following illustrates the foot structure of the representative examples, including the licit lines in (13a) and the excluded ones in (13b).

| (13) | $D_2$ | $a_1$ | $B_1$ | $c_1$ | $D_1$ | EXAMPLES |
|---|---|---|---|---|---|---|
| a. | | (H) | (H)# | (L | H) | laevā tibī; mercēdem ferās |
| | | (LL) | (H)# | (L | H) | sapiunt magis |
| | (LL) | L# | (H) | (L | H) | sinite trānsigī; esse crēdidit |
| | (H) | L# | (LL) | (L | H) | rūre redierit |
| | | L | (H) | (L | H) | miserrumum; indīligentia |
| b. | | (L | H)# | (L | H) | *bonā tibi |
| | (H) | (L | H)# | (L | H) | *abstinēs manum |

The attested types in (13a) differ from the unmetrical ones in (13b) in the location of the foot boundary. In (13a), the position $B_1$ contains a moraic trochee, while in (13b), $B_1$ begins in the middle of a foot. Luchs' Law, I propose, captures a symptom of a deeper constraint which involves this difference in location of foot boundaries relative to $B_1$, stated as follows.

(14) LUCHS' LAW (revised)
The position $B_1$ contains a linguistic foot.

Luchs' Law is subject to some systematic apparent exceptions, which no longer need to be understood as such under the present proposal (see also Fortson 2008). For example, the expression *malam crucem* 'to hell', a fixed idiom, can occur line-finally, unlike other sequences of iambic words such as *bonum patrem* 'good father'. If *malam crucem*, due to its idiomatic status, was treated as a single phonological word similar to *miserrumum*, and was thus accented *malám crucem*, then the *B* position is not misaligned with a moraic trochee.

Other apparent exceptions involve sequences of a consonant-final clitic followed by a LLH word, e.g. *ab animō* 'from the spirit', *ut aliī* 'so that others', etc., which can occur in the $D_2a_1B_1$ sequence in the line (*Trin.* 47, *Ps.* 810). These appear to be exceptions, because if clitic's consonant is resyllabified as the onset of the following word, the sequence would be phonologically indistinguishable from a LLLH word, which should be footed (LL)(LH), thus violating (14). But the assumption of resyllabification here is flawed; the correct parse is (*ab*).(*áni*)(*mum*), i.e. a HLLH sequence whose final syllable

constitutes a foot and thus obeys Luchs' Law. Independent confirmation for this parse comes from the fact that sequences like *ab animum* are categorically excluded from line-end (Soubiran 1970), which can only be explained with the parse (H)(LL)(H) but not (LL)(LH).

### *5.4 Meyer's Law*

Meyer's Law requires *c* to be monomoraic if a word boundary follows *D*. The following representative examples of line endings illustrate its effect in $c_2D_2$: the lines in (15a) contain a word boundary after $D_2$, and the preceding $c_2$ is monomoraic. The lines in (15b) show that $c_2$ may contain two moras, but only when $D_2$ occurs in the middle of a word. (15c) illustrates other cases where $c_2$ is monomoraic. Hypothetical lines excluded by Meyer's Law are shown in (15d). The syllables occupying $c_2D_2$ are underlined.

(15) a. venit mīlēs mihī (*Bacch.* 844)
'the soldier comes'

praedicās fallāciās (*Pseud.* 1195)
'you are telling [me] about lies'

b. nequeō mīrārī satis (*Capt.* 799)
'I can't help but wonder'

absente nēminem (*Au.* 98)
'no one while I'm absent'

c. lubente fēceris (*Cur.* 665)
'you will have done willingly'

atque conductōribus (*As.* 3)
'also to the contractors'

d. *vendit mīlēs mihī
*veniet mīlēs mihī

The foot structure of these representative examples is shown schematically below.

| (16) | $B_2$ | $c_2$ | $D_2$ | $a_1$ | $B_1$ | $c_1$ | $D_1$ | EXAMPLES |
|---|---|---|---|---|---|---|---|---|
| a. | | (Ĺ | H) # | (L | H) # | (L | H) | venit mīlēs mihī |
| | (H́) | (L | H) # | (H) | (H́) | (L | H) | praedicās fallāciās |
| | (ĹL) | (H)# | (H | H | H) # | (L | H) | nequeō mīrārī satis |
| | | (H) | (H́) | L # | (H́) | (L | H) | absente nēminem |
| | | L | (H́) | L # | (H) | (L | H) | lubente fēceris |
| | (H́) | L # | (H) | L | (H) | (L | H) | atque conductōribus |
| b. | | (H́) | (H)# | (L | H)# | (L | H) | *vendit mīlēs mihī |
| | | (ĹL) | (H)# | (L | H)# | (L | H) | *veniet mīlēs mihī |

As this picture shows, configurations that are excluded by the Law are those where *c* is both bimoraic and contains the stress foot. Just one of these conditions is not enough to condemn a line: in *Bacch.* 844, $c_2$ contains the main stress, but the syllable is light; in *Cap.* 799, it contains a heavy but not main-stressed syllable.

Meyer's Law has long been understood as a restriction on stress: Plautus avoids spondees in *Bc* with a stress in a weak position in the meter (Lindsay 1900: 66; 1922: 15 and ff.); Meyer's Law ensures that a main stress foot cannot fill *c*. If a polysyllable ends in *D*, its main stress will be in *c*; Meyer's Law prevents that position from containing the entire stress foot.

Just as in the case of Luchs' Law, the traditional statement of Meyer's Law in (11b) captures the symptoms of a deeper constraint, stated in (17).

(17) MEYER'S LAW (revised)
The *c* position may not fully contain a main-stress foot.

To summarize this and the preceding section, I have argued that the two constraints in (11) are far from arbitrary, but enforce the dipodic structure of the meters. The effect of Luchs' Law is to make the strong position of the strong branch of the dipody more prominent, by

requiring it to contain a linguistic foot. Meyer's Law requires the weak member of the strong branch of the dipody to be LESS prominent; the cumulative effect of these laws is to impose greater restrictions on the strong branch of the dipody.

## 6. Synthesis

Translated into the terms of linguistic foot structure, both the Greek and the Latin constraints are no longer as arbitrary as they appeared in the traditional formulation. Porson's Law is part of a set of constraints that impose greater restrictions on the strong branches of the dipody, by regulating the prominence that is allowed in the weak positions. Luchs' and Meyer's Law have the same function, as outlined in the last paragraph of the preceding section. In this way, both the Greek and the Latin constraints reinforce the higher-level constituent structure of the meter.

But their shared features and function could not be due to borrowing. For one thing, such a borrowing would have required Plautus to have an explicit theory of higher-level grouping, which was not the case. But more importantly, Porson's Law applied to Greek tragedy and lyric, and was freely violated in both Old Comedy of Aristophanes and the New Comedy of Menander, who was Plautus's primary model. That Porson's Law only applied to the stricter Greek meters is not surprising given that, unlike in Latin, the Greek dipody is signaled by the basic correspondence constraints themselves, both in tragedy and in comedy.

If the commonality is not due to borrowing or common origin, it remains to suggest that the aspect of the meter embodied in Luchs' and Meyer's laws is NATURAL, and arose spontaneously, because metrical grammars, just like grammars of natural languages, are biased toward naturalness. The borrowed aspects of the meter, on the other hand, are the superficial ones: their names (in part), the number of positions in the line, and the basic correspondence rules. This skeleton is fleshed

out under the influence of the native phonology of the borrower's language.

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