

# From Dante to Pinsky: A theoretical perspective on the history of the modern English iambic pentameter

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The modern English iambic pentameter was modeled on the Italian *endecasillabo*, but differs from it with respect to defining characteristics of both stress placement and syllable count. This paper considers the development of these differences from the point of view of the phonological theory of meter proposed in Hanson & Kiparsky (1996), and gives a precise and explanatory account of what was borrowed from Italian and why in English it changed the way it did. First Sidney's meter is shown to have borrowed from Petrarch's its underlying structure and its constraint on syllable count, but to have developed a new constraint on stress of precisely the kind the theory predicts to be optimal for English given the other characteristics. Then Shakespeare's meter is shown to have retained Sidney's meter's underlying structure and its constraint on stress, but to have developed a new constraint on syllable count, again of precisely the kind the theory predicts to be optimal for English given the other characteristics. Thus, formal claims the theory makes about possible metrical forms and languages, preferences among these are shown to be actualized as historical developments.

## 1. Introduction

### 1.1. The historical question

The dominant meter of the Italian poetic tradition is the *ENDECASILLABO*. Illustrated in (1) by a passage from Dante's *Inferno*, the *endecasillabo* is traditionally defined as a line of eleven syllables with the eleventh obligatorily unstressed, and the tenth and either the fourth or sixth obligatorily stressed (see section 3):

- (1) 'Per me si va ne la città dolente,  
per me si va ne l'etterno dolore,  
per me si va tra la perduta gente.  
Giustizia mosse il mio alto fattore;  
fecemi la divina podestate,  
la somma sapienza e 'l primo amore.  
Dinanzi a me non fuor cose create  
se non eterne, e io eterno duro.  
Lasciate ogni speranza, voi ch'intrate'.  
Queste parole di colore oscuro  
vid'io scritte al sommo d'una porta.

(Dante, *Inferno* 3.1-11)

The dominant meter of the English poetic tradition is the IAMBIC PENTAMETER. Illustrated in (2) by the corresponding passage from the contemporary American poet Robert Pinsky's translation of Dante's *Inferno*, the iambic pentameter is traditionally defined as a line of ten syllables, alternately unstressed and stressed, but with some variation allowed in both syllable count and stress placement (see sections 4 and 5):

- (2) "Through me you enter into the city of woes,  
 Through me you enter into eternal pain,  
 Through me you enter the population of loss.  
 Justice moved my high maker, in power divine,  
 Wisdom supreme, love primal. No things were  
 Before me not eternal; eternal I remain.  
 Abandon all hope, you who enter here.  
 These words I saw inscribed in some dark color  
 Over a portal.

(Pinsky, *The Inferno of Dante*:  
 a new verse translation 3.1-9)

Historically, the *endecasillabo* was the model for the iambic pentameter in modern English. Structurally, however, as even the traditional descriptions above make clear, the two meters differ significantly, with respect to both syllable count and stress placement. What, then, did English borrow, and why did what it borrowed evolve the way it did?

### 1.2. The theoretical perspective

In an unpublished paper on the iambic pentameter in Middle English, Kuroda (1973: 36) suggests that on analogy with historical phonology, such questions of historical metrics may be illuminated by identifying formal relationships among metrical systems to which "the prosodic competence of the human mind is claimed to be receptive", such that actual historical developments can be seen to be natural conceptual developments. Here I will show that the theory of poetic meter proposed in Hanson & Kiparsky (1996) provides an explanatory account of this kind for the development of the modern English iambic pentameter out of the Italian *endecasillabo*. The theory defines a universal set of formal-ly possible meters based on the prosodic givens of universal grammar, and identifies principles which determine languages' preferences among these. Focussing on a narrow formative period for the meter during the English Renaissance, I will show that when the metrical systems of four poets whose practices critics hold to represent key stages in this historical development are formalized within this theory, the relation of each

system to its predecessor emerges as an innovation defined as conceptually natural by the theory. The four poets are Petrarch, who served as the principal model for the English poets; Sidney, who was the first to fluently use the iambic pentameter; Shakespeare, who brought the meter fully into its modern form; and Donne, who took it (almost) to its formal limits.

### 1.3. Historical background

Before we begin, a note is in order regarding the complex nature of the historical influence of Romance forms on the English iambic pentameter. In Middle English, not only the Italian *endecasillabo*, but also the French *décasyllabe* served as models for the iambic pentameter of Chaucer and other poets in the fourteenth century. Because of changes in the language underwent subsequently, however, no continuous tradition from this Middle English iambic pentameter to that which developed in modern English is uncontroversially recognized by literary historians. What is agreed upon is that in the early sixteenth century the Italian *endecasillabo* served again as a direct model for the iambic pentameter in modern English, when Wyatt's and Surrey's translations of Petrarch brought the sonnet form into English (Saintsbury 1908). The *endecasillabo* was the meter of the Italian sonnet, and the iambic pentameter was quickly established as the meter of the English sonnet. From there the iambic pentameter spread to other forms, most notably drama.

Given this complexity, it should be clear that my purpose here is not to make claims as to who is actually responsible for what innovations, or exactly when they occurred, or what all the influences were that combined to produce them. I will simply try to show that where changes did indubitably occur, their form is consistent with the theory.

### 1.4. Overview of the paper

I begin in section 2 with a summary of the theory of Hanson & Kiparsky (1996). In section 3 I review formalizations of Dante's *endecasillabo* already proposed in Piera (1981) and Nespor & Vogel (1986), and show that while key aspects of these analyses are not consistent with the letter of the theory, they are consistent with its spirit, and suggest a natural extension which accommodates the *endecasillabo* of Petrarch. In section 4 I examine the iambic pentameter of Sidney, and show that his meter's significant difference from the Italian consists in new constraints on stress of precisely the type the theory predicts to obtain in an English meter sharing all other basic properties of the Italian form. In section 5 I review the analysis of the iambic pentameter

of Shakespeare proposed in Hanson & Kiparsky (1996), and show that its difference from Sidney's consists in new constraints on syllable count likewise of the type the theory predicts to obtain in an English meter sharing all other basic properties of Sidney's. In section 5 I also show that this new principle of syllable count interacts with aspects of the formal organization of grammar, in particular the distinction between lexical and non-lexical phonological structure, to allow quite radical variation manifest in the iambic pentameter of Donne and other poets, variation which sometimes troubles critics, but on this theory can be seen to be fully natural.

2. A summary of the theory of poetic meter

2.1. Defining properties of a meter

The theory of poetic meter proposed in Hanson & Kiparsky (1996) takes meter to be a stylization of the rhythmic structure which language has naturally. The exact nature of that rhythmic structure is, of course, a matter of continuing research, as this volume attests; but the theory takes as fundamental the insight of Liberman (1975) and Liberman & Prince (1977) that it involves the parsing at successive hierarchical levels of linguistic constituents into rhythmic groups, each having a single most prominent member or HEAD, to impose a cumulative, periodic rhythm.

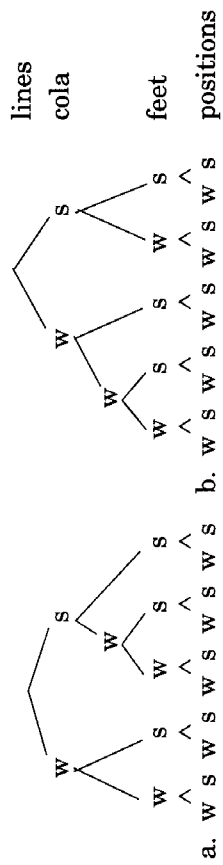
Formally, the theory also adopts the position of Halle & Keyser (1972) that a meter is defined by two distinct components, an abstract pattern or UNDERLYING STRUCTURE, and a set of correspondence rules or REALIZATION CONSTRAINTS defining how language can be mapped into that structure. Language for which a well-formed mapping exists is METRICAL.

The theory of Hanson & Kiparsky (1996) constrains the form of both these components to register the fundamental properties of rhythm in language. First, the underlying structure is held to be always composed of abstract METRICAL POSITIONS grouped into METRICAL FEET (Kiparsky 1977, Prince 1989). In each metrical foot one position is the head, or STRONG POSITION (s); any others are WEAK (w). Following Hayes' (1981) proposal that the grouping in language is universally binary, all metrical feet are likewise held to be binary. These metrical feet are grouped into higher-level constituents, including COLA and LINES (Kiparsky 1977, Prince 1989). In these constituents too, one constituent is the head. Although a full theory of other higher-level properties remains to be worked out, the grouping can be assumed to be exhaustive at each level, and binary to the greatest extent possible (Piera 1981: 39),<sup>1</sup> again emulating the

iterative grouping of feet in rhythmic systems of languages (Hayes 1981). Like languages, meters are held to vary because of a few parametric choices. For the underlying structure, two STRUCTURE PARAMETERS allow a choice of whether the head of each metrical foot is initial or final, and of how many feet there are in a line. An additional structure parameter must also allow a choice of whether the heads of higher-level constituents are initial or final.

For example, a meter which has five feet and is head-final will have, freely mixed, the two possible underlying structures in (3). As we will see in sections 3 and 4, these have been argued to be the underlying structures of both the English iambic pentameter (Kiparsky 1977) and its Italian ancestor (Piera 1981: 40):

(3) Underlying structures of a five-foot head-final meter (including the Italian *endecasillabo* and the English iambic pentameter):



The realization constraints determine how a specific meter makes manifest such an underlying structure. Here again, the choices are governed by three REALIZATION PARAMETERS, which can be set to constituents and categories which figure in the rhythm of language. Thus, the underlying structure serves to heighten awareness of the chosen aspects of the rhythm of language.

One realization constraint defines the maximum amount of linguistic material which can be mapped into any single metrical position. A POSITION SIZE PARAMETER allows a choice of any of the rhythmic units into which language is parsed, including, within the word, the mora ( $\mu$ ), syllable ( $\sigma$ ), phonological foot ( $\phi$ ) and phonological word ( $\omega$ ).

Another realization constraint defines the contrast in rhythmic prominence between weak and strong metrical positions. A PROMINENCE SITE PARAMETER allows a choice between strong positions requiring especially prominent linguistic constituents, and weak metrical positions prohibiting them. A PROMINENCE TYPE PARAMETER defines what counts as "prominent" for this purpose, and can be set to any of the categories of prominence which figure in the rhythm of language, including syllable weight,

stress, certain kinds of pitch accent and the property of heading a branching constituent, or STRENGTH (see section 4.2).

The fixing of these five parameters defines a meter. A SCANSION is then any mapping of the language of a line into the underlying structure that satisfies simultaneously the metrical constraints which result from fixing the realization parameters, and the phonological constraints of the language itself.

### 2.2. The choice of a meter

The theory also holds that for a given language, the choices among these possible parameter settings are governed by a principle of FIT, which favors those settings which allow the fullest use of the vocabulary of the language. A principle of INTEREST also plays a role, favoring those settings which allow variety in the way those words are positioned, or serve other aesthetic desiderata.

### 2.3. Variation within a meter

It is well established that formal details of metrical practice vary across poets, periods and genres (Halle & Keyser 1972, Kiparsky 1975, 1977, Hayes 1989). On the theory considered here, because a meter is defined by fixing the five parameters described in section 2.1, variation within a given meter is formally distinct from variation which defines a new meter. Although a full theory of variation within meters remains to be worked out, the instances of it which have so far been established in the literature can all be construed as systematic relaxations of the conditions on scansion. These relaxations either likewise stylize properties of language, or reflect general perceptual strategies (Hayes 1989).

Thus one common variant on scansion is that an extrametrical constituent, necessarily rhythmically unimportant, is sometimes allowed at the edge of a major constituent (Kiparsky 1977, Hayes 1989). Poets vary further in whether the constituent defining any such relevant edge is metrical or prosodic, and in how high-level it is. Shakespeare, for example, allows an extrametrical syllable at the end of a line, or within a line at the end of a major phrase (Kiparsky 1977, Hayes 1989):

- (4)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 a. Rich garments, linens, stuffs and necessities  
 (Shakespeare, *The Tempest*, 1.2.164)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 b. So dear the love my people bore me: nor set  
 (*ibid.* 1.2.141)

Another well-established possible variant on scansion which the theory assumes is that prominence constraints may be relaxed at the beginning of a major constituent, again sometimes metrical, sometimes prosodic, reflecting a general tendency for beginnings to be lax while endings are strict (Hayes 1989). For example, we will see in section 4 that the prominence constraints of the English iambic pentameter prohibit most stressed syllables of polysyllabic words in weak positions. Yet such syllables routinely appear in weak positions that are line-initial, and for many poets, including Shakespeare, also in weak positions that are phrase-initial (Kiparsky 1977, Hayes 1989):

- (5)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 a. Kissing with golden face the meadows green  
 (Shakespeare, *Sonnet* 33, 3)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 b. And yet dark night strangles the travelling lamp  
 (Shakespeare, *MacBeth* 2.4.7)

Finally, prominence constraints are sometimes relaxed under other conditions. For example, Kiparsky (1977) has argued that in some poets' iambic pentameter, stressed syllables of polysyllabic words are exceptionally allowed in weak positions if the boundaries of the linguistic constituent within which the mismatched stress is defined – most often those of the word itself – match those of the metrical foot (see also Hayes (1989) for an alternative account of these exceptions):

- (6)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 a. There is written her fairer neck rounde abowte  
 (Wyatt, *Poems* vii, 12)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 b. \*Than inscribed is, her faire neck round abowte.

In other poets' practice, such syllables are exceptionally allowed in weak positions even if this condition is not met, as long as they are subordinated to a stronger stress in the following strong position (Hayes 1989, Hanson 1995a):

- (7)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 a. Shall behold God, and never tast death's woe  
 (Donne, *Holy Sonnet* [165], 8)

$\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$   
 b. \*Shall behold him, and never tast death's woe.

Such conditions on relaxations of the constraints echo conditions which play a role in language, such as bracket alignment, or the configurations that motivate rhythmic adjustment in many languages, and are thus compatible with the theory.

2.4. Prosodic variation

Finally, the theory assumes the well-established principle that the phonological representation relevant to scansion is not necessarily exactly that of the surface (Kiparsky 1968, 1972, 1975, 1977; Halle & Keyser 1972; Malone 1982, 1983, 1987; Mohanan 1986). Certain aspects of prosody therefore also properly form part of the theory of poetic meter.

First, Kiparsky (1975, 1977) has shown that the prosodic structure of the language of verse may be altered by PROSODIC RULES. These are formally like phonological rules, and may actually be phonological rules of particular modes of speech, although they are not assumed to be obligatorily manifest in the pronunciation of the verse. For example, Kiparsky's (1977) analysis of Shakespeare's iambic pentameter holds it to be characterized by three prosodic rules which allow pairs of syllables that could plausibly be phonologically reduced to one to optionally count as single syllables in the meter. The rules may reduce sequences of a high unstressed vowel followed by another unstressed vowel as in (8a), sequences of an unstressed vowel, a sonorant and another unstressed vowel as in (8b), and sequences of any two vowels as in (8c). Prosodic reductions in syllable count are indicated by the diacritic '˘':

- (8) a. Who? Silvia? Aye, Silvia, for your sake  
 (Two Gentlemen of Verona 4.2.23)
- $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$
- b. And take my milk for gall, you murdering ministers  
 (MacBeth 1.5.48)
- $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$
- c. Weeds among weeds, or flowers with flowers gathered  
 (Sonnet 124, 4)

Second, some types of prosodic structure may be systematically

subject to laxer variants of the metrical constraints, or even exempted from them entirely, where linguistic justification for this exists. Most notably, in English, while lexical phonological structure is obligatorily respected by all poets, nonlexical structure is treated more variably (Halle & Keyser 1972; Kiparsky 1975, 1977; Hanson 1992, 1995a; Hanson & Kiparsky 1996), a phenomenon consistent with the idea that grammars themselves may treat lexical and nonlexical phonological structures differently (Kiparsky 1982, Inkelas & Zec 1993). Thus, from the first, in the English iambic pentameter, the prominence constraints which would normally prohibit stressed syllables of polysyllabic words in weak positions are relaxed for nonlexical words. For some poets the relaxation is subject to the conditions on constituent alignment and stress subordination illustrated in (6) and (7), respectively:

- (9) a. But, fool, seek'st not to get into her heart.  
 (Sidney, *Astrophil and Stella* 11,14)
- $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$
- b. Of touch they are that without touch doth touch  
 (ibid. 9,12)
- $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$

For other poets, notably Donne, the prominence constraints are set aside entirely for nonlexical words (Hanson 1995a):

- (10) a. Why should'st thou that dost not only approve,  
 (Donne, *Satyre* 1, 37)
- $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$
- b. Is't because thou thy self art blind, that wee  
 (Donne, "Elegie: His parting from her", 15)
- $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$

2.5. Summary

In sum, the theory of poetic meter in Hanson & Kiparsky (1996) formalizes the principle that meters stylize the rhythmic structure of language. It defines a universal set of possible meters, each consisting of an abstract underlying structure which represents a binary, periodic, cumulative rhythm as found in language, and constraints on the size and prominence of each position of that structure when it is realized in language. The only possible measures of size and prominence are those which

figure in the rhythm of language, and for a given language the choice among these is influenced by how well the phonological structure of the words of the language would be accommodated. Variation within a meter may arise from linguistically or perceptually motivated relaxations of the constraints, and from variation in the phonological representation relevant to scansion.

### 3. Petrarch: the Italian model

#### 3.1. The problem posed by the endecasillabo

In order for the theory sketched in section 2 to explain why the English iambic pentameter developed in the way it did out of its Italian model, the theory must first offer an analysis of the meter of the model. The *endecasillabo* the English poets took as their model is illustrated in (11), one of the first and probably the most famous of Petrarch's sonnets to be translated into English (see (26) and (28) in section 4.2 for the translations):

- (11) Amor, che nel penser mio vive e regna  
 e'l suo seggio maggior nel mio cor tene,  
 talor armato ne la fronte vene  
 ivi si loca et ivi pon sua insegna.  
 Quella ch'amare e sofferrir ne 'nsegna  
 e vol che 'l gran desio, l'accesa spene  
 ragion, vergogna e reverenza affrene,  
 di nostro ardir fra se stessa si sdegna.  
 Onde Amor paventoso fugge al core,  
 lasciando ogni sua impresa, e piange e trema;  
 ivi s'asconde e non appar più fore.  
 Che poss'io far, temendo il mio signore,  
 se non star seco infin a l'ora estrema?  
 ché bel fin fa chi ben amando more.  
 5

(Petrarch, *Rime sparse*, 140)

As mentioned in section 1.4, Piera (1981) has already analyzed the *endecasillabo* as having the underlying structure in (3), and as allowing only a single syllable in each position of that structure. These properties are fully compatible with the theory, and will be seen in section 4 to be the ones that English borrowed.

However, the constraints on stress which have been proposed to explain just how the *endecasillabo* makes manifest the structure in (3) are not sanctioned in the theory as it stands, and moreover are precisely

those aspects of the meter which were not borrowed into English. Specifically, in Petrarch's practice it appears that there is no constraint imposing a contrast in rhythmic prominence between weak and strong positions at the level of the foot, but instead only at the level of the colon. The theory must be emended to allow that.

#### 3.2. Syllable count

As its name ("eleven-syllable") suggests, a strict syllable count is a defining feature of the *endecasillabo* (Giamatti 1972). Although superficial variation does occur, it involves only extrametrical syllables and syllables reduced by prosodic rules. Neither compromises the meter's essential syllabic structure.

First, as Piera (1981) observes, the eleventh syllable is best analyzed as extrametrical. The reason is that it is always unstressed, and also optional. As mentioned in section 1.1, the tenth position is required to contain a stressed syllable. Since in Italian most words have penultimate stress, as in *téne* or *sdégna* of lines 2 and 8 of (11), unstressed syllables after the final strong position in the underlying structure of (3) follow naturally from this requirement as a systematic part of the meter. When a line ends with a word with exceptional final stress, the eleventh syllable is absent.

Second, line-internal variation in syllable count is governed by two rules which allow adjacent vowels which define two separate syllables to count as one for metrical purposes. ELISION allows an unstressed final vowel and a following initial vowel in the next word to count together as a single syllable, as in (12a). SYNERESIS allows a vowel and a following unstressed vowel in the same word to do so, as in (12b) (Giamatti 1972: 149):

- (12)  $\begin{array}{cccccccccccc} \wedge & & \wedge & & \wedge & & \wedge & & \wedge & & \wedge & & \wedge \\ w & s & w & s & w & s & w & s & w & s & w & s & w & s \end{array}$   
 a. Dólce e chiára è la nótte e sénza vénto  
 (Leopardi, *La sera del dí di festa*)  
 $\begin{array}{cccccccccccc} \wedge & & \wedge & & \wedge & & \wedge & & \wedge & & \wedge & & \wedge \\ w & s & w & s & w & s & w & s & w & s & w & s & w & s \end{array}$   
 b. Mórte bélla paréa nel suo bel viso.  
 (Petrarch, cited in Giamatti 1972)

Because of their formal resemblance to phonological rules and the possibility of their realization in actual pronunciations, these are prosodic rules on the theory sketched in section 2.

Thus, once the line-final extrametricality and the prosodic rules of elision and syneresis are taken into account, the *endecasillabo* can be

analyzed as having five binary metrical feet as in (3), and a constraint that limits each metrical position to a single syllable as in (13):

- (13) Position size constraint for the Italian *endecasillabo*:  
Each metrical position is limited to a syllable.

### 3.3. The presence of prominence constraints on the colon

As mentioned in section 1.1, a well-formed line of *endecasillabo* must also have stress on the tenth syllable, as in the initial syllable of *téne* or *sdégna* in lines 2 and 8 of (11), and also on either the fourth or the sixth, as in the final syllables of *ardír* or *maggiór* in these same lines. Piera's (1981) claim that the underlying structure of the meter is that given in (3) is an explanation of this fact, since (3) assigns a special status to just these positions. Specifically, the tenth is always the DESIGNATED TERMINAL ELEMENT (DTE) of a colon, that element which is not dominated by any weak node within that constituent. Either the fourth or the sixth will also be the DTE of a colon, depending on whether the grouping of the feet is as in (3a) or (3b).

For the Spanish cousin of the *endecasillabo*, Piera (1981) proposes a constraint that the DTE of a colon must not correspond to an unstressed syllable. For Dante's *endecasillabo*, Nespó & Vogel (1986: 281) propose the even stronger constraint that the DTE of a colon must correspond to the DTE of a phonological phrase. Petrarch's sonnets unquestionably observe the weaker constraint, and seem to indeed observe the stronger; the stronger also corresponds to the traditional assumption that a caesura associated with (though not necessarily immediately following) the fourth or sixth position plays an important role in Italian meter. Either constraint is clearly compatible with the spirit of the theory sketched in section 2, inasmuch as the prominence type claimed to be relevant is a linguistically significant one, and the prominence site is the formal analog of one. Thus I will assume that a possible setting of the prominence parameter is the DTE of a colon; that a possible setting of the prominence type parameter is phrasal stress; and that the English poets' model was characterized by both these choices:

- (14) Prominence constraints for the Italian *endecasillabo*:  
a. Prominence site: the DTE of each colon requires prominence  
b. Prominence type: the DTE of a phonological phrase

Thus, lines 8 and 2 of Petrarch's sonnet in (11) would be scanned as follows:

- (15) a. di nóstro ardir fra sé stéssa si sdégna.
- 

- b. e'l suo séggio maggiór nel mio cor téne,
- 

### 3.3. The absence of prominence constraints on the foot

The theory must furthermore allow for the possibility that a meter has only a colon-level prominence constraint as in (14), because the *endecasillabo* does not seem to have any foot-level prominence constraint. Nespó & Vogel (1986: 279) do, in fact, propose that Dante's *endecasillabo* also requires that the strong position of each metrical foot correspond to a stressed syllable, a constraint of the foot-level type the theory as sketched in section 2.1 would predict to obtain. But certain additional claims required to support this empirically are problematic.

First, the constraint is satisfied only if secondary stress falls on alternate syllables to the right of the primary stress within words, such as the final syllable of *vérgine* in (16a), as well on all monosyllabic words in strong positions, such as *se* in (16b):

- (16) a. per cui morì la vérgine Cammílla  
b. Lo giòrno se n'andáva e l'áere brúno
- 
- (Dante, *Inferno* 1.107)  
(Dante, *Inferno* 2.1)

In addition, it requires such apparent exceptions as the underlined unstressed syllables in (17a,b) to be accounted for. Nespó & Vogel propose a prosodic rule of Stress Postposing, which shifts rightward the stress on a word like *tútto* in (17a) which is adjacent to the stressed syllable of *basciò* in the preceding phonological phrase, giving *túttó*. They also propose an extension of a well-established phonological rule of Stress

Retraction, which normally shifts leftward the final stress on a polysyllabic word like *ciascún* in (17c) which is adjacent to an initial stressed syllable in the following phonological phrase, giving *ciascun*. The extended rule shifts the stress on a monosyllabic word like *sua* in (17b) leftward to the otherwise unstressed preceding word *la*:

- (17) a.  $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$  *a. la bócca mi basciò túttu tremánte*  
 (Dante, *Inferno* 5.136)

- b.  $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$  *b. però gíri Fortúna la sua róta*  
 (Dante, *Inferno* 15.95)

- c.  $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$  *c. ch'atténde ciascún uom che Dio non téme.*  
 (Dante, *Inferno* 3.108)

Nespor & Vogel themselves, however, clearly hesitate to endorse the stress pattern of (16a) without independent linguistic evidence. A native speaker I consulted, furthermore, while accepting the most outlandish elisions as potentially manifest in pronunciation of the verse, rejected the proposed phonological structures for not only (16a,b) but also (17a,b) as an impoverishment of Dante's rhythmic achievement. Thus while the proposed rules share with the prosodic rules of (8) and (12) the formal structure of phonological rules, they lack their plausibility as possible pronunciations.

More seriously, Nespor & Vogel's claim that a strong position must correspond to a stressed syllable requires the assumption of rules which actually transform the underlying structure. For example, to account for further exceptions as in (18), Nespor & Vogel (1986: 286-87) formulate a rule of Inversion which reverses the order of the metrical positions in a phrase-initial foot as in (19):

- (18) a.  $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$  *a. Se tu ne védi alcún dégno di nota;*  
 (Dante, *Inferno* 20.104)

- b.  $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$  *b. e li parénti miéi fúron lombárdi,*  
 (Dante, *Inferno* 1.68)

- (19)  $\overset{\wedge}{w} \overset{\wedge}{s} \rightarrow \overset{\wedge}{s} \overset{\wedge}{w}$

Two further rules of Silent Position Insertion and Reduction then restore the underlying iambic pattern, by inserting a pause that corresponds to one metrical position between the adjacent stresses resulting from Inversion and reducing the two unstressed syllables following the second stress to one position. Similarly, to account for exceptions as in (20), they suggest that a mirror image of Silent Position Insertion and Reduction reduces the two unstressed syllables before two adjacent stresses to one position, and inserts a pause that corresponds to one metrical position between the stresses (Pennings 1985, cited in Nespor & Vogel 1986: 292-93):

- (20)  $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$  *Di súbito drizzáto grido: 'Cóme?*  
 (Dante, *Inferno* 10.67)

The theory sketched in section 2, however, does not allow such changes to the underlying structure. The only mechanism it makes available for accounting for exceptions to the prominence constraints is the possibility that they are relaxed under conditions like those sketched in section 2.3. For lines like those in (18), Nespor & Vogel (1986) draw a parallel with the English relaxation of the requirements on the initial position of a phrase as in (5), suggesting that for Dante, too, Inversion occurs only at the beginnings of phonological phrases. If, however, the prominence requirements for Italian constrain strong positions as they propose, the position for which the constraint must be relaxed in lines like (18) is not the initial one, and the translation of their observation into the present theory is not straightforward. Moreover, as lines like (20) above or (21) below show, phrase-initial inversion is not the only source of exceptions to be accounted for:

- (21)  $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$  *E se veníte da tánta pietáte*  
 (Dante, cited by Giamatti 1972: 158)

Since requiring stress in all strong positions poses these problems, in light of the fact that, as we will see shortly in section 4.2, the prominence constraints which developed in English restrict stressed syllables of polysyllabic words in weak positions, it is worth briefly considering whether a constraint of that type would be any easier to reconcile with Italian poets' practice. The difficulties posed by lines like (16) and (17a,b) would not arise. Exceptions like those in (18) would be explained analogously to those in (5) in English. The exception in (21) could conceivably involve some marginality in the lexical status of *tánta*. Among the lines



from Dante cited by Nespor & Vogel, only (20) would stand as unexplained in this way.

Regardless of the proper analysis of Dante's *endecasillabo*, however, it is inescapable that for Petrararch, a hypothesis that stressed syllables of polysyllabic words are restricted in weak positions is far from convincing. Exceptions are legion, as in *bélla* in (12b) or *stéssa* and *séggio* in (15) above, or the underlined syllables in (22) and (23) below:

(22) a.  $\begin{matrix} \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ w & s & w & s & w & s & w & s & w & s \\ \text{Che all'áur} & \underline{\text{a}} & \text{il vágo} & \underline{\text{e}} & \text{bióndo} & \text{capé} & \underline{\text{l}} & \text{chiúda} \\ \text{(Petrarch, Canzone 52, cited in Giamatti 1972: 158)} \end{matrix}$

b.  $\begin{matrix} \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ w & s & w & s & w & s & w & s \\ \text{Quándo} & \underline{\text{i}} & \text{móvo} & \underline{\text{i}} & \text{sospíri} & \underline{\text{a}} & \text{chiamár} & \underline{\text{v}} & \text{oi} \\ \text{(Petrarch, Rime sparse 5, 1)} \end{matrix}$

(23) a.  $\begin{matrix} \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ w & s & w & s & w & s & w & s \\ \text{et pun} & \underline{\text{i}} & \text{re} & \underline{\text{i}} & \text{un} & \underline{\text{d}} & \text{ì ben} & \underline{\text{m}} & \text{ille} & \underline{\text{o}} & \text{ffése,} \\ \text{(Petrarch, Rime sparse 2, 2)} \end{matrix}$

b.  $\begin{matrix} \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ w & s & w & s & w & s & w & s \\ \text{che poté} & \underline{\text{s}} & \text{e} & \underline{\text{a}} & \text{bisógno} & \underline{\text{p}} & \text{rénder} & \underline{\text{l}} & \text{arme,} \\ \text{(Petrarch, Rime sparse 2, 11)} \end{matrix}$

The presence of exceptions in itself does not rule out the analysis. Those in (12b) and (15) resemble the exceptions conditioned by constituent alignment in (6) allowed by some English poets. The rarer ones in (22) resemble those conditioned by stress subordination in (7) allowed by fewer English poets. Those in (23), while to my knowledge unparalleled in the English tradition, have a property similar to one which characterizes exceptions of the type in (6) for Milton and a nonlexical parallel in Shakespeare (Kiparsky 1977, Hayes 1983). Specifically, the exceptionally positioned stressed syllable is always preceded by two syllables which are unstressed, the empirical generalization on which Pennings' rule which is the mirror image of Reduction is based. The sheer number and variety of these exceptions to any putative foot-level constraint in Petrararch's practice, however, is very different from the limited nature of the exceptions to the foot-level constraint found in the iambic pentameter of his English heirs.

Thus although the question merits more detailed study if a refined analysis of the Italian meter is to be achieved, for our grosser purpose here of comparison with English, the simplest solution seems to be to

accept the possibility that a meter need not impose any rhythmic alternation at the level of the foot if it imposes one at the level of the colon instead. The alternation at the level of the foot in the underlying structure will still be manifest in a tendency to favor prominent syllables in strong positions and unimportant ones in weak ones. This approach makes sense of a condition Nespor & Vogel (1986: 290) impose on the prosodic rules they propose, that they may not alter the stress which is in correspondence with the DTE of the colon. It also accords with the widespread impression that one of the charms of the Italian *endecasillabo* is the great variety of rhythms possible within the space delimited by the colon boundary (Giamatti 1972). It accords further with the impression that Italians perceive their meter to be primarily syllabic as opposed to English meter which they perceive to be primarily stress-based, at the same time that stress is not irrelevant. As Piera (1981: 152) concludes,

"the distinction between systems generally recognized as syllabotonic and some so-called syllabic systems does not reflect a disparity of metrical pattern structure, but a difference in the strictness of the metrical rules through which this is instantiated in particular lines".

This difference in strictness inheres not in enforcement of the meter's constraints, but in their nature, in whether they impose alternation at the level of the foot, or more loosely, at that of the colon only.

#### 3.4. The choice of constraints

The addition of a meter which imposes rhythmic alternation only at the level of the colon to the formal possibilities defined by the theory sketched in section 2 in turn raises an issue for the principles that the theory holds to influence a language's choice of meter type. From the point of view of the principle of Fit given in section 2.2, there is no obvious reason why Italian could not sustain a syllabic meter imposing alternation at the level of the foot by restricting weak positions. A meter requiring any form of prominence in strong positions would be disfavored on the grounds that words like *vergine*, if they do indeed lack stress on the final syllable, would be unusable without special license. The two adjacent unimportant syllables could not be assigned to adjacent metrical positions, one weak and one strong, compatibly with such a constraint. Since Italian has no phonological words with adjacent stress, however, and only very few compounds with this property, such as *pánfórté* or *vin sánto* (Larry Hyman and Gianluigi Bellin, p.c.), a prohibition on stressed syllables in weak positions, let alone the even less

restrictive prohibition on strong syllables found in English, would pose no obvious problem.

Although any full explanation of why Italian does not make this choice lies deep within Italian metrics, beyond the reach of this paper, I would tentatively suggest that one contributing reason may have to do with that very lack of adjacent stress, and its consequences for the principle of Interest mentioned in section 2.2. Nespør & Vogel (1986) show that Italian tends not only to lack adjacent stress within words, but also to disallow it within phonological phrases, where it is eliminated by a variety of rules including, in Northern Italian, that of Stress Retraction illustrated in (17c). Even across phonological phrases it is mitigated by a rule of Final Lengthening. Perhaps it is precisely the fact that rhythmic alternation at the level of the syllable is so robustly present in the language that the language has no incentive to, or more precisely derives no great aesthetic interest from, imposing the stylization of rhythmic alternation implicit in the foot-level template in (3) at the level of the syllable. Indeed, the poets seem to derive particular aesthetic interest from challenging such rhythmic alternation. Petrarch, for example, sometimes truncates final unstressed syllables of polysyllabic words to produce a poetic form which then clashes with a following stress in a way which would never arise in the language itself, and indeed in actual pronunciation is mitigated by Final Lengthening, as in the reduction of *cuore* 'heart' to *cor* in line (15b), or of *capélli* to *capé* in (22a). The choice of (14) alone thus reflects the traditional insight that Italian is 'the Pallas and the Aphrodite of modern tongues, in the already armed perfection with which it came into the world' (Saintsbury 1908: 1, 304).

#### 4. *Sidney and his predecessors*

##### 4.1. *Sidney's achievement*

Although it was Wyatt's, and to a lesser extent Surrey's, translations of Petrarch which brought the sonnet and with it a reinvented iambic pentameter into modern English, neither poet's practice manifests precisely the properties that characterize the dominant tradition of the English meter. According to Thompson's (1961: 139) meticulous study of the formative years of the meter, it is Sir Philip Sidney who first achieves this, in his sonnet cycle *Astrophil and Stella* (1581):<sup>2</sup>

"In Sidney's poetry the metrical system of modern English reaches perfection for the first time. Everything that has been fragmentary before is fully realized. The technical details of the relation of lan-

guage to the metrical pattern are settled in the form they were for centuries to keep (or consciously to depart from)".

For Thompson, what most profoundly distinguishes Sidney's practice from that of his predecessors is his understanding of meter as an abstract form derived from language, but nonetheless capable of remaining separate from the natural rhythms of the actual language of the verse. The technique through which this is achieved is as follows (Thompson 1961:149):

"Sidney manages to combine a formal satisfaction of the metrical pattern with phrases whose stresses frequently violate that pattern. First, of course, he observes his syllables meticulously, and his word-stresses. After that, the stresses of the language may depart from the pattern in any way".

In the terms of the theory sketched in section 2, this means that Sidney replaces the constraint on phrasal stress in (14) with a new constraint based on word stress, in a form which otherwise retains the Italian meter's underlying structure in (3), and the syllabic position size constraint in (13). The result is precisely the form which Hanson & Kiparsky (1996) argue to be the optimal form of a syllable-based meter for English.

##### 4.2. *Prominence constraints*

Kiparsky (1975) has already shown that far from requiring unstressed and stressed syllables to alternate as the traditional description of the meter holds, iambic pentameter freely allows stressed syllables in weak positions and unstressed ones in strong positions, as in (24):

(24) a. Pluck the keen teeth from the fierce tiger's jaws,  
(Shakespeare, *Sonnet* 19.3)

b. Than are dreamt of in your philosophy.  
(Shakespeare, *Hamlet* 1.5.166)

What it does not allow is a weak position containing a syllable that is stressed relative to another syllable in the same phonological word, or, more formally, a syllable that is strong within the phonological word because it heads a branching constituent in that domain (Lieberman & Prince 1977, Kiparsky 1977, Hanson & Kiparsky 1996):

- (25) a. \*Pluck imense teeth from enraged tigers' jaws  
 b. \*Than are offered in your philosophy

According to Kiparsky (1977), some variant of this principle is shared by all English poets' iambic pentameter. In the dominant tradition as represented by Shakespeare's practice, it applies unconditionally to lexical words, relaxed only phrase-initially where that would be expected for independent reasons as discussed in section 2.3 (Kiparsky 1977). Sidney's practice shares this property, while that of his immediate predecessors does not.

Wyatt's practice is illustrated in (26) with his translation (c. 1535) of Petrarch's sonnet in (11), strangely beautiful but definitely uncanonical:

- (26) The longe love, that in my thought doeth harbar  
 And in myn hert doeth kepe his residence  
 Into my face preseth with bold pretence,  
 And therein campeth, spreading his baner.  
 She that me lerneth to love and suffre  
 And will that that my trust, and lustes negligence  
 Be rayned by reason, shame, and reverence  
 With his hardines taketh displeasure.  
 Wherewithall, vnto the hertes forrest he fleith,  
 Leving his entreprise with payne and cry  
 And there him hideth and not appereth.  
 What may I do when my maister fereth,  
 But, in the felde, with him to lyve and dye?  
 For goode is the liff, ending faithfully.  
 (Wyatt, *Poems* iv).

The Italian prominence constraints of (14) are not in force: many lines such as 8 lack phrasal and indeed sometimes even word stress in the fourth, sixth and tenth positions, the DRES of all possible cola:

- (27) With his hardines taketh displeasure.

The English prominence constraints illustrated in (24)-(25) are also not firmly established. Wyatt differs from the dominant tradition in that he often allows strong syllables of words like those of *displeasure* and *hárdi-*

ness in (27) in weak positions which are not phrase-initial. Insofar as such syllables are not freely allowed in weak positions, but are subject to the condition on constituent alignment illustrated in (6), his meter shares the English prominence constraints at its core (Kiparsky 1977). The system remains fragmentary, however. Thus Saintsbury (1908: 1, 305) notes that in examining the work of Wyatt,

"who is the pioneer and master ... We seem to be looking from afar at a man running or walking over a course beset with all sorts of visible stumbling-blocks and invisible snares, into which and over which he is perpetually stumbling and tumbling, yet picking himself up and pressing on towards the goal".

Surrey's practice, illustrated by his translation of the same sonnet, does not reach the goal either:

- (28) Love that doth raine and live within my thought,  
 And buylt his seat within my captiue brest,  
 Clad in the armes wherin with me he fowght  
 Of, in my face he doth his banner rest.  
 But she that taught me love and suffre paine,  
 My doubtfull hope and eke my hote desire  
 With shamfast looke to shadoo and refrayne,  
 Her smyng grace converyth streight to yre.  
 And cowarde love than to the hert apace  
 Taketh his flight where he doth lorke and playne  
 His purpose lost, and dare not show his face.  
 For my lordes gy't thus fawtless byde I payne;  
 Yet from my lorde shall not my foote remove.  
 Sweet is the death that taketh end by love.  
 (Surrey, *Amatory Poems* 4)

This translation is formally more like its Italian model in that it retains phrasal stress in the fourth or sixth and tenth positions, but it has none of the variety of rhythms found in Italian. At the same time, it has not achieved the principle which allows rhythmic variety in English. Surrey only occasionally allows a stressed syllable in a weak position, as in *lor-des* in line 12 of (28), and then generally only if it is subordinated to a more strongly stressed syllable in the following strong position. At the same time, his other poems show him to also sometimes allow strong syllables of words in weak positions as in (29), subject to the same condition on constituent alignment respected by Wyatt.<sup>3</sup>

- (29)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  The swift swalow pursueth the flies smale;  
(*ibid.* 2, 10)

Sidney's practice, in contrast, has categorically abandoned the Italian prominence constraints of (14) and adopted the prohibition on strong syllables of words in weak positions illustrated in (24)-(25) instead:

- (30) Not at first sight, nor with a dribbed shot,  
Love gave the wound which while I breathe will bleed:  
But known worth did in mine of time proceed,  
Till by degrees it had full conquest got.  
I saw, and liked; I liked, but loved not; 5  
I loved, but straight did not what love decreed:  
At length to love's decrees I, forced, agreed,  
Yet with repining at so partial lot.  
Now even that footstep of lost liberty  
Is gone, and now like slave-born Muscovite 10  
I call it praise to suffer tyranny;  
And now employ the remnant of my wit  
To make myself believe that all is well,  
While with a feeling skill I paint my hell.  
(Sidney, *Astrophil and Stella* 2)

Throughout *Astrophil and Stella* many lines lack stress in their tenth positions, as in line 11 of (30), repeated as (31):

- (31)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  a. I call it praise to suffer tyranny  
(Sidney, *Astrophil and Stella* 2, 11)

Nor do they necessarily have phrasal stress in the fourth or sixth position, as in line 1 of (30), repeated as (32a), or in (32b):

- (32)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  a. Not at the first sight, nor with a dribbed shot.  
(*ibid.* 2, 1)  
 $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  b. Cry, Victory, this fair day all is ours.  
(*ibid.* 12, 11)

Moreover, many lines not only have stressed syllables in weak positions, as in *dribbed* in (32a) or *poore* in (33a), but even have phrasal stress there, as in *day* in (32b), or *things* in (33a), or *pleasd* in (33b).

- (33)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  a. And strange things cost too dear for my poor sprites.  
(*ibid.* 3, 11)  
 $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  b. And stayed pleasd with the prospect of the place.  
(*ibid.* 20, 10)

Syllables that are strong within a phonological word, in contrast, occur in weak positions only if they are initial in a line or a phonological phrase, as in (34):

- (34)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  a. Churches or schools are for thy seat more fit.  
(*ibid.* 4, 6)  
 $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  b. I do confess -- pardon a fault confessed --  
(*ibid.* 4, 7)

Strong syllables in weak positions comparable to those of *séggio* and *stés-sa* in (15), or of *hardiness* and *displeasure* in (27), or of *swallow* in (29), never occur. Thus, Sidney has replaced the Italian colon and phrase-based prominence constraints of (14) with the English foot and word-level prominence constraints of (35):

- (35) Prominence constraints for the English iambic pentameter:  
a. Prominence site: W prohibits prominence  
b. Prominence type: syllables that are strong within a phonological word

#### 4.3. Position size

In contrast to the prominence constraints' change from Italian, the syllabic position size constraint in (13) remains fixed across the adoption in this first period. Following upon the Italian tradition, the earliest poets writing iambic pentameter in modern English consciously spoke of the meter as syllabic, but that remains a feature of English metrical description long after it ceases to be true of the practice. What is more

telling is that Sidney's practice maintains strict syllabicity, as Thompson's (1961:149) description of him as observing his syllables meticulously implies. Although Sidney's practice includes instances of what is traditionally called "trisyllabic substitution", a distinction has always been drawn in the traditional critical literature between trisyllabic feet that can be set down to "Elision" or "Slur" as opposed to those that are "undisputed" (Saintsbury 1908: 1, 172), or, parallelly, those that are "reducible" as opposed to "irreducible" (Weismiller 1989). In our terms, "reducible" trisyllabic feet involve extra syllables which can be accounted for by prosodic rules. In Sidney's practice, all extra syllables are of this type. They involve either the prosodic rules of (8) which are characteristic of English across the tradition, or relics of the Italian elision and syneresis of (12), or linguistic beliefs of the period about syllabicity.

In *Astrophil and Stella* the three prosodic rules discussed in section 2.4 above are fully productive, as in (36), parallel to (8a), (37) parallel to (8b), and (38) parallel to (8c):

(36)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  Frame dantiest lustre, mixed of shades and light? (*ibid.* 7, 4)

$\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
b. Virtue of late, with virtuous care to stir

(37)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  a. Or would she her miracul<sup>o</sup>us power show, (*ibid.* 25, 9)

$\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  (*ibid.* 7, 9)  
b. Gold is the cover<sup>o</sup>ing of that stately place.

$\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  (*ibid.* 9, 4)  
c. And of some sent from that sweet enemy, France;

$\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  (*ibid.* 41, 4)  
(38) Near thereabouts, into your po<sup>e</sup>sy w<sup>r</sup>ing;

Occasionally, the two rules reducing adjacent vowels apply across word boundaries as they do in Italian:

(39)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  a. Rich in those gifts which give the eternal crown; (*ibid.* 37, 11)

$\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  b. Stella behold, and then begin to endite. (*ibid.* 15, 14)

$\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  c. That Plato I read for nought, but if he tame (*ibid.* 21, 5)

Beyond these rules, syllabic sonorants, especially suffixes, may count as non-syllabic, as in (40):

(40)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  a. And sure at length stol<sup>n</sup> goods do come to light. (*ibid.* 15, 11)

$\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$  b. Upon that coast, am giv<sup>n</sup> up for a slave. (*ibid.* 29, 14)

According to Weismiller (1989: 269), however, this seems to reflect a prosodic belief and not any special metrical practice:

"the sense of what constitutes a syllable in English was still to a degree unfixed during the reign of Elizabeth; study the lists of 'syllables' in the orthographies of the time, and you will learn why words such as *able*, *spasm*, *risen*, and *other*, and such comparable terminations as *-able*, *-osm*, and so forth, appear at times to disrupt what would otherwise be, or be easily reducible to, strict duple rhythm in Elizabethan verse. On the whole, it is surprising that the poets ever used the sequences in question as having two syllables; the idea that 'l', 'm', 'n,' and 'r' could be syllabic was first articulated, so far as I know, in 1619...."

Finally, a handful of words, possibly because of their final syllabic sonorants, but perhaps more particularly because of their own metrical histories, seem to be treated as idiosyncratically potentially monosyllabic. In Sidney's practice, these include *heaven* and *ever*, and in other poets' also *devil*, and *sever*:

(41)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 What, may it be that even in heav'nly place

(*ibid.* 31, 3)

All these practices remain in English for a long time as special conditions on syllable count, even in other meters. None of them seriously challenges the constraint that each position in Sidney's iambic pentameter continues to be limited to a single syllable, exactly as in the Italian constraint in (13):

(42) Position size constraint for Sidney's iambic pentameter (= (13)):  
 Each metrical position is limited to a syllable.

Only one line in all of *Astrophil and Stella* has an extra syllable which is of a wholly other character, and cannot be discounted by any prosodic rule, whether natural or conventional. It is a harbinger of changes to come:

(43)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 With new-born sighs and denizened wit do sing:

(*ibid.* 15, 8)

#### 4.4. The choice of the constraints

In sum, then, the earliest modern English poets writing iambic pentameter based on the model of the Italian *endecasillabo* borrowed from the Italian the underlying structure in (3), and the syllabic position size constraint in (13) (= (42)). In conjunction with these, the foot- and word-level prominence constraints in (35) evolved to take the place of the colon- and phrase-level ones in (14). This historical development is consistent with the theory sketched in section 2 not only because the resultant meter is a well-defined one, but also because the principle of Fit summarized in section 2.2 predicts it should be a favored one.

Hanson & Kiparsky (1996) have already shown that for a meter with (13), of all possible foot-level constraints, only those in (35) are compatible with English phonology. Briefly, the argument is that English has many words with two adjacent light, unstressed, and/or weak syllables like *tyranny*, which cannot be used in a meter in which every syllable has to correspond to its own metrical position, and those in strong positions have to be prominent (cp. the problem words like *virgine* pose for Italian as discussed in section 3.4). English also has many words with

adjacent heavy and/or stressed syllables like *rhubarb* and *birchright*, which cannot be used in a meter in which every syllable has to correspond to its own position and those in weak positions cannot be heavy and/or stressed. If strong syllables of words are prohibited in weak positions, however, only the relatively few words with two strong syllables which are either adjacent, as in *hierarchy*, or separated by an interval of two syllables, as in *fortification*, are problematic, and these can still be used initially by virtue of the relaxation of the prominence constraints possible there as in (5) (see (62) below). Once Sidney hit upon the prominence constraints of (35), they remained stable for hundreds of years, and even across other changes stand as the defining feature of the English iambic pentameter.

At the same time, however, although the development of the foot-level prominence constraints in (35) in conjunction with (13)/(42) is consistent with the theory, it is not fully explained by it. In order to accommodate Italian within the metrical theory sketched in section 2, the theory must, as we saw in section 3, recognize the possibility that a periodic meter need not impose a constraint at the level of the foot, but may instead do so only at the level of the colon. A new question then arises as to why English should have developed a foot-level constraint from a model that lacked one. It is not obvious that its words would have been accommodated any less well if it had adopted the Italian meter as it was.

Like the question of why Italian lacks a foot-level constraint to begin with, a full answer to this question is beyond the scope of this paper. Perhaps a metrical form with alternation at the level of the foot is more highly stylized, and at the beginning of the tradition the most highly stylized form was sought out. Perhaps additional metrical experience that the English poets brought to their task influenced the outcome. The iambic pentameter of Chaucer was of great interest to these poets, and has the prominence constraints of (35) that developed in the modern form (Halle and Keyser 1972, Kiparsky 1975, 1977). Scholars are unclear, however, as to how accessible Chaucer would have been as a metrical model for the early modern English poets given the changes the language had undergone. In any case, a parallel question would still remain as to why Middle English developed the foot-level constraint from a different Romance model, French, which like Italian lacked one and had a colon-level constraint instead.<sup>4</sup>

If the suggestion made in section 3.4 is correct, however, part of the answer could lie in the difference between Italian and English, or perhaps more generally between the Romance and the Germanic languages, with respect to adjacent stress. Where Italian avoids stress on adjacent syllables, in English it is common. Thus the aesthetic interest in im-

sing rhythmic alternation at the level of the metrical foot which Italian lacks, English has.

### 5. Shakespeare and his successors

#### 5.1. Position size

If the prominence constraints in (35) established by Sidney remained stable for centuries, however, the borrowed position size constraint in (42) he observed did not. Within twenty-five years, Shakespeare had "eased the screws very freely" (Saintsbury 1908: 2, 303). One practice to which this judgement refers is Shakespeare's use of the trisyllabic foot.<sup>5</sup> In a chronological study of Shakespeare's metrical practice, Saintsbury (1908: 2,22) notes that in *Romeo and Juliet* (c. 1594-96), "the redundant [extrametrical -K.H.] syllable and the trisyllabic foot, not being wanted, do not occur" (22). In the contemporaneous *A Midsummer Night's Dream* (c. 1594-96) "trisyllabic feet are still absent" (24). By *Hamlet* (1600-01), "except that he is not so prodigal of the trisyllabic foot as he might be, ... there is hardly a single device that he does not employ copiously" (42). Finally, in *King Lear* (1605-06), the speeches are celebrated for the fact that compared to the later romances, they are "even fuller of trisyllabic feet" (44). In the "splendid central scenes", in the "more than Aeschylean opening" in (44), Saintsbury (1908: 2, 44-45) notes that

"the monosyllabic feet in 'rage' and 'blow', the trisyllabic (if not quite tribrachs) at 'sulphurous and', and 'vaunt couriers to' l and 'rotun | dity o' | the world' -- are the *clous* or the hinges of the metrical composition":

(44) *Lear*:

Blow, winds, and crack your cheeks! rage, blow!  
 You cataracts and hurricanoes, spout  
 Till you have drench'd our steeples, drown'd the cocks!  
 You sulphurous and thought-executing fires,  
 Vaunt couriers of oak-cleaving thunderbolts, 5  
 Singe my white head! And thou, all-shaking thunder,  
 Strike flat the thick rotundity o' th' world!  
 Crack nature's moulds, all germins spill at once  
 That makes ingrateful man!

(Shakespeare, *King Lear* 3.2.1-9)

What, precisely, does Saintsbury mean by "trisyllabic feet"? Those involving *sulphurous* and *couriers* are nothing new. They are of exactly the type accounted for by the prosodic rules discussed in section 2.4, and used productively already by Sidney. These occur as freely in *Romeo and Juliet* as in *King Lear*, as in fact do all the prosodic reductions of syllables we have seen used by Sidney: (45a) is parallel to (36), (45b) to (37), (45c) to (38), (45d,e) to (39), (45f) to (40), and (45g) to (41):

- (45)  $\begin{array}{c} \wedge \\ \text{w s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array}$
- a. As is the bud bit with an envious worm,  
 (Shakespeare, *Romeo and Juliet* 1.1.151)
- $\begin{array}{c} \wedge \\ \text{w s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array}$
- b. Of honorable reckoning are you both  
 (*ibid.* 1.2.4)
- $\begin{array}{c} \wedge \\ \text{w s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array}$
- c. One fairer than my love! The all-seeing sun  
 (*ibid.* 1.2.92)
- $\begin{array}{c} \wedge \\ \text{w s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array}$
- d. Nor bide th'encounter of assailing eyes,  
 (*ibid.* 1.1.213)
- $\begin{array}{c} \wedge \\ \text{w s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array}$
- e. Whereto I have invited many a guest,  
 (*ibid.* 1.2.21)
- $\begin{array}{c} \wedge \\ \text{w s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array}$
- f. And, on my life, hath stol'n him home to bed.  
 (*ibid.* 2.1.4)
- $\begin{array}{c} \wedge \\ \text{w s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array} \begin{array}{c} \wedge \\ \text{s w} \\ \wedge \end{array}$
- g. Of limping winter treads, even such delight  
 (*ibid.* 1.2.28)

What is new is the trisyllabic foot involving "rotun | dity o' |" in line 7 of (44).<sup>6</sup> It is an "undisputed", "irreducible" case of two syllables in one metrical position, a structure that appears in Sidney only in the single line excepted in (43), only occasionally in *Romeo and Juliet*,<sup>7</sup> but absolutely freely in *King Lear* (Hanson 1995b):

- (46)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 a. Her delicate cheek. It seem'd she was a queen  
 (Shakespeare, *King Lear* 4.3.13)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 b. A still-soliciting eye, and such a tongue  
 (*ibid.* 1.1.231)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 c. When majesty falls to folly. Reserve thy state,  
 (*ibid.* 1.1.149)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 d. Sorrow would be a rarity most beloved,  
 (*ibid.* 4.3.23)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 e. Your horrible pleasure. Here I stand your slave,  
 (*ibid.* 3.2.19)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 f. Sometimes with lunatic bands, sometime with prayers,  
 (*ibid.* 2.3.19)
- (47)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 a. As flies to wanton boys are we to th' gods,  
 (*ibid.* 4.1.36)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 b. Draw, seem to defend yourself; now quit you well.  
 (*ibid.* 2.1.30)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 c. Gentle, and low, an excellent thing in a woman.  
 (*ibid.* 5.3.274)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 d. And speak 't again, my lord, no more with me.  
 (*ibid.* 2.4.255)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 e. That she would soon be here. Is your lady come?  
 (*ibid.* 2.4.184)

- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 f. I had thought, by making this well known unto you  
 (*ibid.* 1.4.205)
- (48)  $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 a. The argument of your praise, balm of your age,  
 (*ibid.* 1.1.215)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 b. Unmerciful lady as you are, I'm none.  
 (*ibid.* 3.7.33)
- $\widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s} \widehat{w} \widehat{s}$   
 c. Strike flat the thick rotundity o' th' world!  
 (*ibid.* 3.2.7)

Formally, Kiparsky's (1977) analysis of Shakespeare's iambic pentameter accounts for such extra syllables through special metrical rules. One, reflecting an observation by Young (1928) that in all such cadences the vowel of the first syllable is normally short, allows a sequence of a short vowel, a single consonant and a second short vowel (VCV) to count as a single position, accounting for lines like those in (46) and (48). The other allows an unstressed proclitic to be disregarded, accounting for lines like those in (47a-c, e). These rules are formally unlike prosodic rules in that no phonological reduction, however abstract, is assumed. They simply identify the conditions under which exceptional correspondences with the underlying structure are possible. This formal difference is manifest in the fact that pairs of syllables which count as one syllable in virtue of a prosodic rule act as monosyllables with respect to the prominence constraints, occurring freely in weak positions (see (45c)), while those that share a metrical position in virtue of a metrical rule still act as disyllables, being confined by the prominence constraints of (35) to strong positions as in (46) (Kiparsky 1977: 241).

Like the adjustments to the underlying structure proposed for Italian by Nespor & Vogel (1986) and discussed in section 3.3, however, these rules are not of a formal type allowed in the theory sketched in section 2. The generalizations they express can only follow from the position size constraint in Shakespeare's meter being set to a phonological constituent other than the syllable. Hanson & Kiparsky (1996) propose that it is set to the phonological foot which figures in the stress system of English, the MORaic TROCHEE.

The moraic trochee consists of either a single heavy syllable which



is necessarily the head of the foot, and therefore stressed, as in (49a), or a sequence of two light syllables of which the first is the head of the foot, and therefore stressed, as in (49b) (Hayes 1987). Under special circumstances, word-initially only, it may also consist of a light syllable followed by a heavy syllable, but with the first one still the head, as in (49c) (Hanson 1991, 1993a; Hanson & Kiparsky 1996):

- (49) a.  $\phi$  |  $\phi$   $\phi$  c.  $\phi$   $\phi$   $\phi$   
 $\sigma$   $\sigma$   $\sigma$   $\sigma$   $\sigma$   
 $\wedge$  | | |  $\wedge$   
 $\mu$   $\mu$   $\mu$   $\mu$   $\mu$

Although the analysis of the complex stress system of English is far from settled, the moraic trochee of (49a,b) is widely accepted to figure in certain subsystems of English stress assignment. For example, it captures the minimal word constraint for English, in that lexical words with the structure of (49a,b) such as *men* or *many* are possible as in (50a), but ones with less phonological structure, such as \*/me/, are not (Chomsky & Halle 1968). Moreover, in the Latin stress rule in nouns, the generalization that stress falls on the penultimate syllable if it is heavy as in *horizon* or *agenda* but on the antepenultimate syllable if the penult is light as in *éléphant* follows from a rule that final syllables are extrametrical (<>), and then moraic trochees are assigned from right to left, as in (50b) (Chomsky & Halle 1968, Hayes 1981, 1987, Kager 1989). The special case in (49c) seems also to figure in words like *Arab* or *réformation*, where stress falls on an initial light syllable which is nonetheless rhythmically grouped with a following heavy one, as in (50c) (Hanson & Kiparsky 1996):

- (50)  $\phi$  |  $\phi$   $\phi$   $\phi$   
 $\sigma$   $\sigma$   $\sigma$   $\sigma$   
 $\wedge$  | | |  $\wedge$   
 $\mu$   $\mu$   $\mu$   $\mu$
- a.  $\underline{m \varepsilon n}$   $\underline{m \varepsilon n i}$   
b.  $h \ll r \underline{a j} \langle n \rangle$   $\underline{\varepsilon l} \ll \langle f \rangle \langle n \rangle$   
 $\ll \underline{\varepsilon n} \langle d \rangle$   
c.  $\underline{\varepsilon r} \ll \underline{b}$   
 $\underline{r \varepsilon f} \ll \underline{r}$   $mei \downarrow n$

If the position size constraint is set to a moraic trochee, then, in a

word like *délicate* in (46a), the initial light stressed syllable together with the following unstressed syllable can count as a single metrical position, a phenomenon traditionally known as RESOLUTION. This analysis explains why the first vowel in these cadences is normally light, and also remains true to two further characteristics noted by Young (1928: 76), namely, the stress on the first syllable and its tight rhythmic grouping with the second:

"If the stress in a verse may be illustrated by the tap of hammer on anvil, then resolution gives us the slight second blow or repercussion which follows whenever the hammer has been but slightly grasped".

Since the moraic trochee is a unit of stress assignment, an immediate further consequence of establishing it as the maximum size of a metrical position is that a position may also contain two syllables if neither is stressed (Hanson & Kiparsky 1996). Thus the cases in (47) that Kiparsky's (1977) metrical rule discounting proclitics is intended to account for follow, as does the additional fact that the syllable accompanying a disregarded proclitic is itself always unstressed (Hanson 1995b). The cases in (48) follow for the same reason. Here an interesting contrast emerges with those in (46). The latter are ambiguous in their scansion, since either the first two syllables can belong to a strong position, or the second two can belong to a weak one. The role of the moraic trochee is thus manifest in the commonness of lines like (46) with ambiguous scansions as opposed to the rarity of ones like (48).

In sum, by *King Lear* Shakespeare has replaced Sidney's syllabic position size constraint of (42) with the foot-based one of (51):

- (51) Position size constraint for Shakespeare's iambic pentameter:  
Each metrical position is limited to a phonological foot (specifically, a moraic trochee)

Because the new constraint in (51) defines a maximum and not a minimum position size, a single syllable, whether stressed or unstressed, remains a perfectly metrical realization of any position in Shakespeare's practice, and by far the most usual one. Since the prominence constraints of (35) continue to confine pairs of syllables where one is stressed as in (46) to strong positions, the effect remains extremely subtle. The change nonetheless defines a new meter. As Kuroda (1973: 30) puts it with respect to a different metrical development in Middle English,

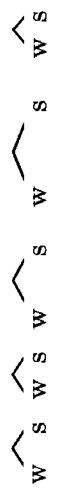
"in the reading of the poem, the stream of ... [lines of the old form] ... is now and then broken by ... [lines of the new form] ... But they are not 'exceptions' that introduce disorder in the aesthetic consciousness of the reader. They redefine the prosodic stream as an embodiment of ... [the new form] ... They raise the reader's metric consciousness momentarily to a higher level of abstract metricality".

5.2. *The choice of the constraint*

It has long been accepted that the true "trisyllabic substitution" illustrated in (46)-(48) is somehow natural in English meter. Saintsbury (1908: 1, 52) argues that it is "ubiquitous in English verse from 1200 to 1500". Although it then vanished briefly for particular historical reasons,

"in blank verse, and especially in dramatic blank verse -- when once the practitioner has got rid of his fear of losing the guide-rope, if he step out of the strict iamb -- it *must*, in English, appear".

The principle of Fit given in section 2.2 explains this appearance. As Hanson & Kiparsky (1996) argue, setting the position size parameter to a moraic trochee accommodates English words better than setting it to a syllable does. As noted in section 4.4, English has a class of words that have two strong syllables with two syllables between them, as in *fortificación*. These words cannot be used in a meter with position size set to the syllable, except initially where the first can be exceptionally admitted in a weak position (see (62) below). Once position size is set to the moraic trochee, however, two unstressed syllables can occur in one position, and the words in question can be freely used anywhere in a line, as they are by Shakespeare in his late plays (Kiparsky 1977, Hanson & Kiparsky 1996):



(52) This fortification, gentlemen, shall we see it?

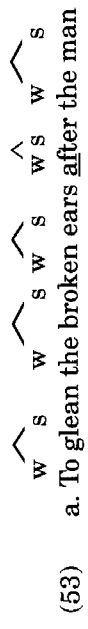
(Shakespeare, *Othello* 3.2.5)

With his marriage of the position size constraint in (51) to the prominence constraints in (35), Shakespeare completes the basic definition of the metrical system which realizes the underlying structure in (3) borrowed from Italian in the optimal way for English. Now "the poet simply puts his hand into the exhausted lucky-bag of English words, and arranges them ... at his pleasure, and for ours" (Saintsbury 1908: 2, 65).

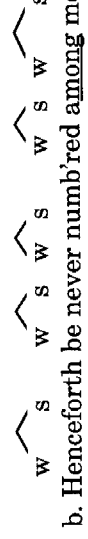
5.3. *Donne: the eased screws*

The change, however, brings radical consequences that are only hinted at in Shakespeare's practice. As noted in section 2.4, poets differ in whether postlexical phonological structure is treated as strictly as lexical structure is. In English, this difference has consequences for the treatment of stress, because stress assignment is lexical in lexical words, but by definition postlexical in all other cases. The latter include the characteristic stress of disyllabic nonlexical words (e.g. *without*, *because*, *into*, *only*), the stress of monosyllabic nonlexical words with irreducible vowels (e.g. *now*, *must*), and the stress that individual words receive depending on their syntactic and semantic position in a phrase (Inkelas & Zec 1993).

The effects of this distinction have already been noted with respect to the prominence constraints. Sidney relaxes (35) for nonlexical words under the conditions on constituent alignment and stress subordination illustrated in (6) and (7), as shown in (9). Shakespeare continues this practice (Kiparsky 1975, 1977; Hanson 1995a):

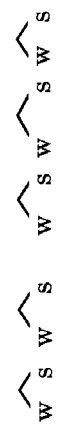


(As *You Like It* 3.5.102)



(*A Midsummer Night's Dream* 3.2.67)

Only very occasionally does he set aside postlexical stress entirely:



(54) And I will comment upon that offense;

(*Sonnet* 89, 2)

The distinction likewise has important consequences for the position size constraint. For Shakespeare, in most cases where the two syllables in a single metrical position are in separate words as in (47), the two syllables are phrased together.<sup>8</sup> Young (1928) notes that if either is stressed, it is normally the first, which also has a short vowel separated from the next vowel by only a single consonant, so that the cadence is quite similar to that in (46). Thus the postlexical structure tends to be fully consistent with (51), just as it is with (35). This is not an absolute requirement, however.

First, it is possible for metrical positions to contain even more than

two syllables if they are unstressed. In Shakespeare's practice this possibility seems to be hinted at in a few lines such as in (55), though because Shakespeare also occasionally varies line length in his late plays, it is difficult to be certain of the scansion:

- (55)  $\overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s}$   
 And your disorder'd rabble make servants of their betters.  
 (*ibid.* 1.4.256)

Second and more important, even heavy stressed syllables may share a metrical position with another syllable if they are nonlexical. This is well established in other meters in other languages which likewise set the maximum position size to a phonological foot (Hanson & Kiparsky 1996), and it surfaces ever so gently in Shakespeare's practice:

- (56)  $\overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s}$   
 Pray you now forget, and forgive; I am old and foolish.  
 (*ibid.* 4.7.83)

The line is not usual for him, but neither is it ultimately incompatible with the constraints which define his meter. Like the more celebrated *Never, never, never*, *never* (*King Lear* 5.3.309), the line searches the extremities of the meter to express Lear's despair, but does not leave it.

When a poet treats postlexical stress more freely, however, the full effects of this formal possibility emerge. Donne's iambic pentameter is like Shakespeare's in its definition of position size by (51), sharing the hallmark cadences of resolution in (57a) parallel to (46), and irreducible extra proclitics in (57b) parallel to (47):

- (57) a.  $\overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s}$   
 Then the wise politique horse would heretofore,  
 (*Donne, Satyre* 1, 80)
- b.  $\overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s}$   
 Strivest to please: for hate, not love, would allow  
 (*Donne, Satyre* 3, 34)

Donne's practice differs from Shakespeare's, however, not only in the frequency of such trisyllabic feet, but also in their formal character. Frequently the first of two unstressed syllables in a single position ends in a consonant, while the first one begins with one, as in (58a,b). More strikingly, the vowel of one of the syllables is often long, and hence stressed, as in (58c,d):

- (58) a.  $\overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s}$   
 Account her wonderfull, why'not lovely too?  
 (*Donne, Elegie: The Anagram* 26)

- b.  $\overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s}$   
 To feed on that, which to'disus'd tastes seemes tough.  
 (*Donne, Elegie: His Picture*, 20)

- c.  $\overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s}$   
 As fresh, and sweet their Apparrells be, as bee  
 (*Donne, Satyre* 4, 180)

- d.  $\overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s}$   
 For saying of our Ladies psalter; But 'tis fit  
 (*Donne, Satyre* 4, 217)

Furthermore, citing lines like those in (59), Weismiller (1989: 274) takes Donne's practice as a model "for the irregularities of verse structure in (some) middle to late Jacobean and Caroline drama ... that shows the frequent occurrence of triple rhythms in pentameters basically duple in rhythm":

- (59) a.  $\overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s}$   
 You'll steal away some man's daughter: am I near you?  
 (*Middleton, A Chaste Maid in Cheapside* 1.1.195,  
 cited in Weismiller 1989: 274)

- b.  $\overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s}$   
 'Bless the right worshipful the good founder's life'  
 (*ibid.* 1.2.14)

- c.  $\overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s} \overset{\frown}{w} \overset{\frown}{s}$   
 I thank him, h'as maintain'd my house this ten years  
 (*ibid.* 1.2.15)

In none of the cases in (58)-(59) could the two syllables together be parsed as actually forming a moraic trochee in the postlexical phonology. If postlexical stress is set aside, however, single metrical positions like these do not violate the position size constraint in (51). Therefore, since Donne is already known to set aside postlexical phonological structure with respect to the prominence constraints of (35) as shown in (10) in section 2.4, these consequences of that practice for the position size constraint are entirely expected.

## 5.4. Milton: the heterogeneity of the English iambic pentameter

Perhaps the most important consequence of the foregoing analysis of the history of the English iambic pentameter is the recognition that the privileged position English literary criticism has traditionally accorded to the assumption that each metrical position should correspond to a single syllable is grounded only in the meter's historical origin. The English critical tradition has tended to take syllabicity as a defining property of the English iambic pentameter. Exceptions to it are cast as licenses, whether praised as judicious or criticized as licentious. On the analysis presented here, in contrast, the exceptions to strict syllabicity which occur in many poets' meters are not licenses at all, but rather manifestations of a metrical system with a different, and in some ways more accommodating, constraint on the size of each metrical position. The defining properties of the English iambic pentameter thus do not include its syllabic structure at all, but are instead its underlying structure in (3) and its constraint on the distribution of stress in (35). Two distinct meters share these properties, one accompanying them with (42) and one with (51). This emerges most significantly in a brief comparison of Shakespeare's meter with Milton's, the only one which rivals it in stature, and one which has always been recognized to have an aesthetic effect all its own.

The late seventeenth and early eighteenth centuries famously saw what is typically described as a reaction against the excesses of Donne and his dramatic successors, typified by Milton's meter. Milton's iambic pentameter is generally assumed to be basically the same as Shakespeare's, but while it shares the prominence constraints in (35), it is strikingly different from Shakespeare's with respect to syllable count (Hanson 1995b; Hanson & Kiparsky 1996). Weismiller (1989) in particular claims that it maintains a regular syllable count in a way that other English poets' meters do not, in that even the most phonologically implausible elisions are intended to represent genuine reductions in syllable count:

- (60) Of Man's First Disobedience, and the Fruit  
 Of that Forbidden Tree, whose mortal taste  
 Brought Death into the World, and all our woe,  
 With loss of *Eden*, till one greater Man  
 Restore us, and regain the blissful Seat,  
 Sing, Heav'nly Muse, that on the secret top  
 Of *Oreb*, or of *Sinai*, didst inspire  
 That Shepherd, who first taught the chosen Seed,  
 In the Beginning how the Heav'n's and Earth  
 Rose out of *Chaos*: Or if *Sion* Hill
- 5
- 10

Delight thee more, and *Silva's* Brook that flow'd  
 Fast by the Oracle of God; I thence  
 Invoke thy aid to my advent'rous Song,  
 That with no middle flight intends to soar  
 Above th'*Aonian* Mount, while it pursues  
 Things unattempted yet in Prose or Rhyme.

15

(Milton, *Paradise Lost*)

In fact, with respect to syllable count Milton's meter simply represents a full return to Sidney's practice. In *Paradise Lost* (1674), the only reductions are of the types in (61), where (61a) is parallel to (36), (61b) to (37), (61c) to (38), (61d,e) to (39), (61f) to (40) and (61g) to (41) (Hanson 1995b):

- (61)  $\begin{array}{cccccccccccc} \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} \\ \text{a. Of Man's First Disobedience, and the Fruit} \end{array}$

(Milton, *Paradise Lost* 1.1)

- $\begin{array}{cccccccccccc} \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} \\ \text{b. Invoke thy aid to my advent'rous Song,} \end{array}$

(ibid. 1.13)

- $\begin{array}{cccccccccccc} \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} \\ \text{c. For those the race of } \underline{\text{Israel}} \text{ oft forsook} \end{array}$

(ibid. 1.432)

- $\begin{array}{cccccccccccc} \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} \\ \text{d. May I express thee } \underline{\text{unblam'd?}} \text{ since God is Light,} \end{array}$

(ibid. 3.3)

- $\begin{array}{cccccccccccc} \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} \\ \text{e. Anguish and doubt and fear and sorrow and pain} \end{array}$

(ibid. 1.558)

- $\begin{array}{cccccccccccc} \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} \\ \text{f. And where the river of Bliss through midst of Heav'n} \end{array}$

(ibid. 3.358)

- $\begin{array}{cccccccccccc} \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge & \wedge \\ \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} & \text{w} & \text{s} \\ \text{g. Within Heav'n's bound, unless Heav'n's Lord supreme} \end{array}$

(ibid. 2.236)

Extra syllables parallel to those in (46)-(48) and (52), let alone those in

(55)-(59), are entirely absent. Words with two adjacent unstressed syllables between two strong ones occur only line initially, where the first strong syllable can exceptionally be in a weak position, allowing each unstressed syllable to be in a position of its own:

(62)  $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$   
 Justification towards God, and peace

(*ibid.* 12.296)

There is only one possible exception to the generalization that each position contains only a single syllable:

(63)  $\overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s} \overset{\wedge}{w} \overset{\wedge}{s}$   
 Because thou hast heark'n'd to the voice of thy Wife,  
 (*ibid.* 10.198)

Thus, in his iambic pentameter Milton couples the constraints in (35) with that in (42) (=13), not that in (51).

This formal characteristic gives rise to aesthetic effects ideally suited to Milton's purpose. Given that English has many words with adjacent unstressed syllables, the syllabic position size constraint of (42) means that unstressed syllables will frequently be in strong positions. They are regularly endowed with metrical prominence greater than the prosodic prominence they have in ordinary speech, whence the sense of great dignity and even exaltation traditionally associated with Milton's meter (Hanson 1995b). It achieves this effect precisely because it is slightly more remote from the actual prosodic structure of the language. Although it is a natural form defined by the theory in section 2.1, it is one just slightly less natural for English, however much truer to the Italian original. When it was reestablished within the tradition, it defined a pendulum swing with respect to syllable count which has characterized the English iambic pentameter ever since, with all later poets deliberately positioning themselves relative to either Milton's or Shakespeare's historical precedent.

## 6. Summary and conclusion

Within a hundred years the modern English iambic pentameter which developed from the borrowed Italian *endecasillabo* had retained only the underlying structure of five head-final feet in (3). The prominence constraints had shifted from (14), requiring phrasal stress in the final strong position of each colon, to (35), prohibiting strong syllables of

words in the weak position of each foot. The position size constraint had shifted from (13)/(42), limiting each position to a single syllable, to (51), limiting each position to a phonological foot, specifically a moraic trochee. The shift in position size allowed trisyllabic feet to fit easily alongside disyllabic ones, not as licenses but as alternative realizations of constant metrical constraints. It did not effect a total displacement of (42), however, but instead created a heterogeneous tradition.

Both shifts can be understood as motivated by the search for the optimal stylization of periodic rhythmic structure in the phonology of English, using the means grammar makes available to poetry universally. Thus when Pinsky translates the *endecasillabo* of Dante's *Inferno*, his choice of the iambic pentameter defined by (3), (35) and (51) is a natural one, not just because that meter has a comparable cultural status, but also because it is itself a natural translation of the *endecasillabo* into English.

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### Notes

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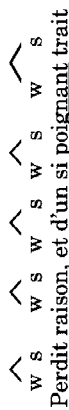
<sup>2</sup> Nespor & Vogel (1986) argue that when there is an odd number of feet to be grouped into cola, one colon will have a true ternary structure rather than having one foot adjoined in a complex binary structure as proposed by Piera (1981). The choice of the latter solution as represented in (3) is an arbitrary one on which nothing in the following discussion depends. By the same token, the labelling in (3) reflects only the empirical structure of the meters under consideration. Both these issues require further study.

<sup>3</sup> Spenser's *Shepherd's Calendar* (1579) was published before Sidney wrote *Astrophil and Stella*. Thompson (1961:90) argues, however, that it cannot be taken to be the beginning of the modern English iambic pentameter any more than Wyatt's or Surrey's or any other of Sidney's predecessors' verse can, because of the vast variety of experimentation it contains:

"While *The Shepherd's Calendar* is obviously a turning point of some kind, it indicates so many directions that one attempting to follow it would not know which way to go. To predict Spenser's development from it would have been impossible. Only a small portion of its metrical variety resembles the metrics of the great Elizabethan poetry which is said to begin with its appearance".

3 Together these practices suggest that the prominence constraints for Surrey's meter may restrict stress (rather than strength) in weak positions. This would be a formally possible way of realizing the underlying structure in (3), but not the optimal one for English, as discussed in section 4.4 below.

4 This may be a more tractable question. Kuroda (1973) suggests that the Middle English constraint could have developed as a conceptually natural reanalysis from French. His observations are cast in terms of Halle & Keyser's (1972) description of Chaucer's practice, but the gist of them carries over into our terms here. Roughly speaking, the French *décasyllabe* shares the underlying structure in (3), the syllabic position size constraint in (13), and prominence constraints similar to those in (14) prohibiting an unstressed syllable in the DTE of a colon (Dominicy 1992, Piera 1981). It also requires, however, that a caesura correspond to the colon boundary. Moreover, French words all have either final stress or penultimate stress. Therefore, the first weak position and also either the third or the fourth, depending on the choice of (3a) or (3b), could contain strong syllables whose presence there could have been interpreted as licensed by their being phrase-initial. The fifth weak position, and either the second or the third, depending on the choice of (3a) or (3b), could contain strong syllables only if followed by a phrase-final monosyllable, in which case the stress would almost always be shifted off that syllable by a Rhythm Rule:



(Ronsard, *Sonnets for Cassandra*, 2, 11)  
The question of how the relationship of the French *décasyllabe* to the Middle English iambic pentameter might be formalized within the theory sketched in section 2 thus merits further study.

5 The other is the development of a "periodic" as opposed to a "cumulative" style (Saintsbury 1908:2,21), in which rhythmic finales become fully freed from correspondence with line and even colon boundaries, a subject of interest to the historical development from Romance meters in its own right.

6 It is worth remembering here that while this structure is demonstrably new relative to Sidney's practice, it is not my intention to insist that it is Shakespeare who is responsible for its introduction. A consideration of the complex historical development of its introduction from the theoretical point of view advanced here, including, for example, a study of Marlowe's contribution, might nonetheless prove interesting (see also note 8).

7 An exception is that pairs of unstressed syllables in single weak positions come thickly in Juliet's Nurse's speech, perhaps an early experiment in the form, reflecting her social position between the city's streets where prose is used and city's authorities where verse is:

.. But as I said, 20  
On Lammass eve at night shall she be fourteen,  
That shall she, marry; I remember it well.  
'Tis since the earthquake now eleven years;  
And she was wean'd I never shall forget it,  
Of all the days of the year, upon that day;  
For I had then laid wormwood to my dug,  
Sitting in the sun under the dove-house wall.  
(Shakespeare, *Romeo and Juliet*, 1.3)

8 Saintsbury (1908: 2, 53) suggests that it is line-internal extrametrical syllables like that in (4b), which were already present in many of Shakespeare's predecessors' iam-

bic pentameter, which were the source of his true trisyllabic substitution, as he repositioned caesuras which characteristically followed such extra syllables (see note 5):

"such an ear as Shakespeare's could not fail to perceive that this ugliness could be turned into a beauty by simply effecting the connection, and fusing the derelict syllable with the following iamb to make an harmonious ana-paest".

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