

Quantitative meter in English: the lesson of Sir Philip Sidney¹

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Happy be those mishapps which, justly proportion holding,
Give right sound to the eares, and enter aright to the judgement;
(Sidney, *Old Arcadia* 13, 17–18)

The Renaissance experiments in quantitative meter in English pose a long-standing puzzle: not only have their specific principles of composition proved elusive; so has any more general explanation of their ultimate failure. This article argues that the solution to the puzzle lies in interactions of quantity and stress in both the meter and the language. An analysis of the dactylic hexameter as based on moraic trochees explains why stress is more straightforwardly accommodated by some positions than others. Analyses of stress-induced ambiguities in English syllable quantity such as the resyllabification of intervocalic consonants in *CVCV* contexts explain apparent inconsistencies in scansion. When these complexities are taken into account, Sidney's compositions reveal themselves to be systematic and phonologically well founded; ambiguities are acknowledged and the meter is exploited to structure them. Ultimately, however, such ambiguities mean that quantity alone provides an inadequate basis for meter in English, because it underdetermines the metrical possibilities.

1 Introduction

1.1 *The problem*

The possibility of quantitative meter in English has sporadically tantalized poets and critics for hundreds of years. If viable poetic forms in a language are those based on distinctions which are significant in the language's phonology (Jakobson, 1973), then it is not unreasonable to expect that quantitative meter should be viable in English. Yet experimentation with the form has never resulted in any sustained tradition.

The most vigorous interest in the form arose during the Renaissance, reflecting the period's general interest in Classical culture, and the (initially) shared assumption of many of its poets that the finest model to which English vernacular poetry

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could aspire would be the quantitative poetry of Classical Latin and Greek. Nearly every poet tried his hand at writing such verse, and many engaged in intense discussion of its principles. Yet most ultimately joined, implicitly or explicitly, in a rejection of it in favor of stress-based meter.

1.2 *Standard accounts*

Standard accounts shed little light on the reasons why the poets reached this conclusion. Most assume that the poets did something other than actually discover something about the quantity (or WEIGHT²) of English syllables. Fussell (1979: 68) dismisses the poets' practice as arbitrary:

since the would-be quantitative poet was obliged to remember constantly the arbitrarily assigned 'quantities' of the English syllables he chose to use, quantitative composition was a laborious academic-theoretical business, like all such nonempirical enterprises more gratifying to the self-congratulating practitioner than to the perplexed reader.

Hollander (1985: 65–6) expresses a common view of it as essentially orthographic:

the rules that the poets used for determining syllable quantity applied to the written text, but not necessarily to what one would hear . . . We must conclude that the quantitative experiment is somewhat like a written code – one needs to count and measure letters in order to determine the system.

And Saintsbury, coming rather closer (and as always more colorfully) to the heart of the matter we will take up here, diagnoses the 'curious measles or distemper which, dangerously but not by any means without beneficial results, affected English poetry . . . for more than half a century' (Saintsbury, 1908–10, vol. 2: 168) as confusion of stress and quantity (*ibid.*: 172):

This atmosphere of confusion and muddlement enwraps almost all those who commit whoredom with this enchantress [quantitative meter] . . . The present day has nothing to reproach them [the Renaissance poets] with in respect of confusing accent and quantity, and mistaking the relation between the two even when they are not confused: but they do both with a singular obtuseness.

Yet among the 'freaks of the craze' (*ibid.*: 172) is Sir Philip Sidney (1554–86), "‘Astrophel’ himself" (*ibid.*: 92), the very poet whose iambic pentameter first hit upon the fundamental structural principle which would characterize the English metrical tradition for centuries afterwards (Thompson, 1961). His quantitative experiments do belong to his earliest verse, and his abandonment of the form does testify to his ultimate dissatisfaction with it in English. But is it really plausible that such a poet would have been so incapable of apprehending a significant aspect of English phonology as he is made out to have been?

² Most literature on quantitative meter ascribes 'quantity' to syllables, distinguishing them as 'long' and 'short'. Here, in keeping with phonological practice, these terms are used only for vowel length; syllables have 'weight', and are distinguished as 'heavy' and 'light'. At the same time, however, the traditional name for the meter is retained.

1.3 *The cultural context*

Attridge (1974), in by far the most thorough and sympathetic study of the experiments, argues that to a much greater extent than modern readers would expect, phonological unnaturalness may be plausible in the experiments' cultural context. The English schools of the period, teaching pronunciations of Latin whose vowels' quality and length were radically different from Classical Latin, recitations of the verse which stressed the strong metrical positions as a method for memorizing and showing scansion, identification of the language with its written form so that 'two consonants' meant 'two letters' and vowels differentiated by diacritics but pronounced alike were regarded as different, all obscured the phonological relationships among vowel length, syllable weight, stress, and metrical structure, and contributed to the belief that the beauty of quantitative meter was apprehended through abstract scholarly accomplishment rather than sensory experience.

Sidney, influenced by Continental interest in the true pronunciation of Classical Latin, tried more than any other poet of the time to base his quantitative verse on the actual pronunciation of English; and Attridge credits him with real discoveries about the lengths of English vowels, the distinction between weight and stress, and innovations in the disposition of stress that make the verse harmonious for an English audience. But Attridge's analysis still attributes to Sidney considerable arbitrariness, inconsistency, and dependency on spelling, and ultimately takes the fact that verse which remained so unnatural in these ways could have been produced and admired by such poets as Sidney and his contemporaries as testimony to the strength of the Renaissance ideals of artifice, scholarship and the preeminence of written over spoken language.

1.4 *Sidney's phonological achievement*

I want to show here that this conclusion, however true to the general cultural context, does not do sufficient justice to the phonological discoveries about quantitative meter in English that Sidney's practice also manifests. Attridge's analysis is limited by the descriptions of English syllable structure and of metrical structure available at the time of his study. Since then, phonological theory has shown that syllable weight in English depends not just on the kinds of linear sequences of segments which figure in the prescriptive rules for the meter, but on complex interactions with stress (section 3). Metrical theory has shown that a meter is not defined by an array of possible syllable types, but by a set of constraints closely related to phonological structure, and in the case of dactylic hexameter, specifically to stress (section 2). When these developments are taken into account, Sidney's practice can be seen to have come to be in large measure both systematic and phonologically motivated.

However, the most important recognition about syllable weight which his practice manifests also ultimately suggests why syllable weight is not optimal as a basis for a

meter in English. It is often structurally ambiguous, with the same string of segments able to be interpreted as making a light syllable in one phonological context and a heavy syllable in another. Sidney's practice recognizes such ambiguities, often structuring them in interesting ways which depart from his Latin precedents. But at the same time, such ambiguities cannot help but compromise the project of quantitative meter in English, because the metrical possibilities are underdetermined by the phonology.

1.5 *Organization of the paper*

Section 2 describes the basic structure of quantitative dactylic hexameter, the meter used in *Old Arcadia* (*OA*) 13, Sidney's longest and most successful experiment, and the one discussed in most detail by Attridge (1974). Section 3 summarizes the relevant aspects of English syllable weight and stress. Then section 4 gives a detailed analysis of Sidney's practice in *OA* 13 and of its relation to that in earlier poems. Finally section 5 briefly contrasts Sidney's practice with that of Robert Bridges to show just how profoundly it differs from what is conventionally prescribed, and elaborates on how these opposing practices reveal the limited viability of quantitative meter in English.

2 Basic structure of quantitative dactylic hexameter

2.1 *Traditional description*

The description of the basic structure of a line of dactylic hexameter with which Sidney would have been familiar would have taken the line to be composed of six feet, each beginning with a heavy syllable (–). The heavy syllable would be followed in each of the first four feet by either two light syllables (˘˘) or another heavy syllable; in the fifth foot by two light syllables only; and in the sixth foot by a single syllable, whether heavy or light. Thus the pattern in (1) is sketched by Sidney above his own experiments in this meter; possible variants are added below in brackets:

- (1) – ˘ ˘ – ˘ ˘ – ˘ ˘ – ˘ ˘ – ˘ ˘ – ˘ ˘ –
 [–] [–] [–] [˘˘] [–]

The classification of syllables as heavy or light for purposes of realizing this pattern would have been according to the principal rules from Latin versification in (2) and (3) (Attridge, 1974; Knapp, 1928; Raven, 1965):³

- (2) (a) A syllable with a long vowel or a diphthong is heavy.
 (b) A syllable with a short vowel followed by two or more consonants is heavy (weight by position), unless
 (i) the two consonants are a 'mute' and a liquid in the same word, in which case the syllable may be either heavy or light, or

³ Sidney actually spelled out his own version of these rules for quantitative meter in English in a note preserved in the margin of one manuscript of *OA* (Ringler's (1962) 'St', in the library of St John's College, Cambridge); the note is reprinted in Ringler (1962: 391).

- (ii) the second consonant is followed by a pause, in which case the syllable may be either heavy or light, or
 - (iii) one of the consonants is *h*, which is discounted.
- (3) (a) A long vowel before another vowel is short.
 (b) Elision may allow two adjacent vowels to count as one.

The basic rules of (2) can be illustrated with the familiar opening lines of Virgil's *Aeneid*, where I have omitted a macron over the second vowel of *ōris*, given in Knapp (1928), because it shows only metrical scansion:

- (4) $\overline{\text{A}}\overline{\text{r}}\overline{\text{m}}\overline{\text{a}} \check{\text{v}}\overline{\text{i}}\overline{\text{r}}\overline{\text{u}}\overline{\text{m}}\overline{\text{q}}\overline{\text{u}}\overline{\text{e}} \text{c}\overline{\text{a}}\overline{\text{n}}\overline{\text{o}}\overline{\text{d}}\overline{\text{e}}, \overline{\text{T}}\overline{\text{r}}\overline{\text{o}}\overline{\text{i}}\overline{\text{a}}\overline{\text{e}} \overline{\text{q}}\overline{\text{u}}\overline{\text{i}} \overline{\text{p}}\overline{\text{r}}\overline{\text{i}}\overline{\text{m}}\overline{\text{u}}\overline{\text{s}} \overline{\text{a}}\overline{\text{b}} \overline{\text{o}}\overline{\text{r}}\overline{\text{i}}\overline{\text{s}}$
 $\overline{\text{I}}\overline{\text{t}}\overline{\text{a}}\overline{\text{l}}\overline{\text{i}}\overline{\text{a}}\overline{\text{m}}, \overline{\text{f}}\overline{\text{a}}\overline{\text{t}}\overline{\text{o}} \overline{\text{p}}\overline{\text{r}}\overline{\text{o}}\overline{\text{f}}\overline{\text{u}}\overline{\text{g}}\overline{\text{u}}\overline{\text{s}}, \overline{\text{L}}\overline{\text{a}}\overline{\text{v}}\overline{\text{i}}\overline{\text{n}}\overline{\text{i}}\overline{\text{a}}\overline{\text{q}}\overline{\text{u}}\overline{\text{e}} \overline{\text{v}}\overline{\text{e}}\overline{\text{n}}\overline{\text{i}}\overline{\text{t}}$

2.2 The phonological basis of the classification of syllables

In two ways, I will assume that the meter is more closely tied to phonological structure than this description articulates. First, the basic classification of syllables in (2) does not properly belong to the description of the meter at all, but to the phonology. In the Latin language itself, a syllable is heavy if it contains a long vowel (CVV) or is closed by a consonant (CVC), and light if it contains a short vowel and is open (CV). Because there is a universal phonological preference for syllables to have onsets and not to have codas, a syllable will be closed only if its vowel is followed by two or more consonants which cannot together make up a well-formed onset of a following syllable, whence (2b), including especially (2bi), alongside (2a). This is the classification which is manifest in Latin in such familiar purely phonological phenomena as word-stress patterns: stress falls on the penultimate syllable in a word if it is heavy by these criteria (CVV as in (5a) or CVC as in (5b)), but on the antepenult if the penult is light (CV as in (5c), or (5d) where *-tr-* is an acceptable onset):

- (5) (a) *iactātus* (b) *virūmque* (c) *prōfugus* (d) *accipitro*

This classification is also manifest in requirements on the minimum size of a word: Latin permits monosyllabic words only if they are heavy, allowing CVV words (*rē* 'thing (abl.)', *dō* 'give (1.sg.pres.)') and CVC words (*dat* 'give (3.sg.pres.)', *cum* 'when') but disallowing CV words (**re*) (Mester, 1994: 21). Formally, the common heaviness of CVV and CVC syllables is represented through the MORA, the measure of syllable weight: the nucleus of any syllable normally contributes one mora to the rhythmic structure of a syllable; and in Latin either vowel length (or a second vowel segment in the case of a diphthong) or a coda consonant contributes a second mora, so that heavy syllables are those which are bimoraic, as in (6a,b), as opposed to light syllables which are monomoraic, as in (6c,d). Here syllables are symbolized by 'σ' and moras by 'μ':

- (6)
- | | | | |
|----------------|----------------|----------------|------------------|
| σ | σ | σ | σ |
| ^ | ^ | | |
| μμ | μμ | μ | μ |
| (a) iac tā tus | (b) vi rum que | (c) pro fu gus | (d) ac ci pi tro |

To what extent other aspects of the rules in (2), and important aspects of their application untouched on here such as their interaction with word boundaries, are truly phonologically motivated in Latin, is beyond the scope of this paper. The point is simply that the phonological basis of the classification of syllables in (2) for Latin justifies the assumption that the reasonable question to ask about Sidney's practice is whether it reflects the phonological classification of heavy and light syllables in English and not, as has often been done by critics, whether it respects the linear sequences of vowels and consonants described in the rules for Latin in (2).

2.3 *The phonological basis of the pattern*

I will also assume that the constraints the meter imposes are not directly those expressed by the pattern in (1), but rather constraints of the type outlined in the universal theory of poetic meter in Hanson & Kiparsky (1996). On this approach, quantitative dactylic hexameter has an underlying structure of binary metrical feet, each composed of a single strong metrical position ('S') followed by a single weak metrical position ('W') (Halle & Keyser, 1971; Hanson & Kiparsky, 1996; Kiparsky 1977; Prince 1989):

$$(7) \begin{array}{cccccccc} s & w & s & w & s & w & s & w & s & w & s & w \\ \vee & & \vee & & \vee & & \vee & & \vee & & \vee & \end{array}$$

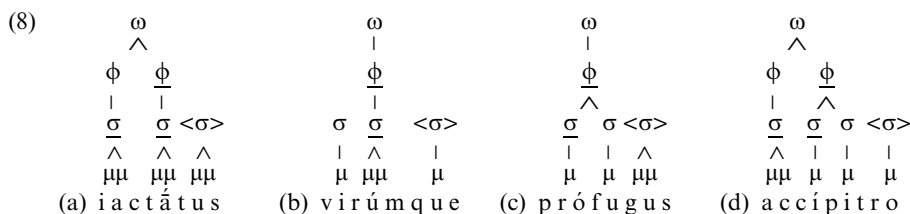
This formalizes the structural unity which the weak position has even when it is realized as two light syllables, a unity already implicit in traditional descriptions' two-way contrast between thesis and arsis. (For ease of exposition in what follows I will sometimes distinguish the positions of two light syllables realizing a single W as 'W1' for the first and 'W2' for the second; for example in (4) *-que* is in W1 and *ca-* in W2.)

The meter is further defined by two constraints on how this underlying structure is realized in language. According to the theory, one defines the size of each metrical position as some constituent drawn from the repertoire given by the universal grammar of rhythm, and for dactylic hexameter, the relevant constituent is clearly the MORAIC TROCHEE (Hayes, 1987; McCarthy & Prince, 1986).

Phonological theory holds that in language itself syllables are grouped into rhythmic constituents in each of which exactly one syllable is the prominent element, or head; these constituents are called phonological feet, on analogy with verse feet (Hayes, 1981). Phonological feet are in their turn grouped into phonological words, in each of which exactly one foot is the head. Stress is one manifestation of this rhythmic structure, in that heads of feet are interpreted as stressed, and heads of words as bearing primary stress. Among universal grammar's limited inventory of possible phonological foot types, the moraic trochee groups syllables subject to a quantitative constraint: it consists of either one heavy syllable, itself the head, or two light ones with the first the head.

It is this foot which figures in the stress system of Latin (Allen, 1973; Hayes, 1987, 1995; McCarthy & Prince, 1986; Mester, 1994; Prince, 1990). In Latin, the stress pattern we saw in (5) follows from the assumption that the rhythmic parse of a word

ignores the final syllable (it is EXTRAMETRICAL (Hayes, 1982)) and groups the next syllables from the end of the word into a moraic trochee, which is itself the head of the phonological word. Although analyses of the remainder of the rhythmic parse differ in ways that it is beyond the scope of this paper to judge (Lahiri, Riad & Jacobs, 1999), the most straightforward for illustrative purposes is Mester's (1994), which holds that the parse of syllables into moraic trochees simply continues leftward across the word, with all these feet grouped to form the phonological word. Note that on this analysis some syllables, like the first of *virumque* in (8b), neither meet the conditions to form a foot on their own nor are in a position to form part of another foot. These and syllables left unfooted because they are extrametrical will ultimately be adjoined to adjacent feet, but play no crucial role in the prominence structure the rhythmic parse establishes for the word. Here feet are symbolized by 'φ', prosodic words by 'ω', heads by underlining, and extrametrical constituents by '<σ>'; adjunction is not shown:



Thus, the moraic trochee is the phonological unit which captures precisely the basic equivalence of one heavy syllable and two light ones manifest in the alternative metrical possibilities in (1).

While some meters define only a maximum size for each metrical position, for dactylic hexameter the moraic trochee is clearly required as a minimum as well, since positions never consist of one light syllable alone. The only exception is the final position of each line, where catalexis, the possible assumption in parsing of the presence at an edge of a missing constituent, in this case a mora, is assumed (Hanson & Kiparsky, 1996; Kiparsky, 1991).

The other constraint on how the underlying structure is realized in language defines an asymmetry between strong and weak metrical positions through some category of phonological prominence. For quantitative dactylic hexameter, the relevant category is weight. The asymmetry in (1) as (7) is that strong positions must contain heavy syllables; they do not normally have the option that weak ones do of realization by two light syllables.

Thus, the meter traditionally described by the pattern in (1) and the rules in (2) is analyzed here as consisting of the underlying pattern in (7) plus the two constraints in (9):

- (9) (a) Position size:
Each metrical position contains exactly one moraic trochee.
- (b) Prominence distinction:
Each strong metrical position contains a heavy syllable.

2.4 Scansion

For a line to be metrical, its language must be able to be mapped into the pattern in (7) in a way which is consistent simultaneously with the constraints in (9), and with the actual phonological structure of the language. On the approach adopted here, such a mapping is what a SCANSION is – not the indication of whether syllables are heavy or light, stressed or unstressed that it is taken to be on traditional accounts. The formalities are laid out in (10) for the second line in (4), with language in S underlined for clarity. As we saw in (8), in the phonological structure some syllables are unfooted by the basic parse; here in addition to the extrametrical syllables the light penult of *Laviniaque* (in which the *i* is part of a complex onset, not a diphthong) affords an example. In language, such syllables, which play no crucial role in the prominence relations the assigned structure establishes for the word, would be available for refooting within the cyclic phonology (Kiparsky, 1993; Prince, 1985), and I assume they are likewise available for reparsing by the meter in a way that syllables which are properly footed (the light penult of *profugus*, for example) are not. Thus, the meter can parse *-niaque* or *-nit* as moraic trochees even though the phonology has not done so.

(10)	ω	ω	ω	ω	ω
	^			^	
	φ	φ	φ	φ φ	φ
	σ σ σ σ	σ σ	σ σ σ	σ σ	σ σ
	^ ^	^ ^	^	^ ^	^ ^
	μμ μ μ μμ	μμ μμ	μ μ μμ	μμ μμ	μ μ μμ μμ
	I ta li am	fā tō	pro fu <u>gus</u> ,	Lā vī	nia que vē nit
	s w s	w s	w s	w s	w s w

The first line of (4), however, whose basic parse into feet is shown in (11), poses a contrasting problem which we will see below is crucial for understanding Sidney's practice:

(11)	φ	φ	φ	φ	φ	φ
	σ σ σ σ	σ σ	σ σ	σ σ	σ σ	σ σ
	^ ^		^	^ ^ ^	^ ^	^ ^
	μμ μ μ μμ	μ μ μμ	μμ μμ	μμ μμ	μ μ μμ	μ μ μμ μμ
	Ar ma vi rum que	cā nō,	Trō iae	quī	prī mus	ab ō ris
	s w s	*w s	w s	w s	w s	w s w

The sequence of syllables *-que ca-* cannot, in fact, be mapped into a single weak position in a way consistent with the phonological structure shown in (11). Although both syllables are light, (9a) requires more than that: the analysis of each metrical position as a moraic trochee imposes an internal rhythmic structure on it, in which the first syllable is the head and the second the nonhead. But *ca-* cannot be parsed as the non-head of a moraic trochee in the meter without violating the crucial prominence relations of its word: quite unlike the stray *-nia-* and *-que* in (10), it is the

head of its word's moraic trochee.⁴ Because lines of this type are quite routine in Latin, it must be assumed that scansion in Latin can be based on a phonological representation without foot structure, as in (12):

- (12) $\begin{array}{cccccccccccccccc} \sigma & \sigma & \sigma & \sigma & \sigma & \sigma & \sigma & \sigma & \sigma & \sigma & \sigma & \sigma & \sigma & \sigma & \sigma \\ \wedge & | & | & \wedge & | & | & \wedge & \wedge & \wedge & \wedge & | & | & \wedge & \wedge \\ \mu\mu & \mu & \mu & \mu\mu & \mu & \mu & \mu\mu & \mu\mu & \mu\mu & \mu\mu & \mu & \mu & \mu\mu & \mu\mu \\ \underline{Ar} & \underline{ma} & \underline{vi} & \underline{rum} & \underline{que} & \underline{cá} & \underline{nō}, & \underline{Trō} & \underline{iae} & \underline{quī} & \underline{prī} & \underline{mus} & \underline{ab} & \underline{ō} & \underline{ris} \\ s & w & s & w & s & w & s & w & s & w & s & w & s & w \end{array}$

The general theoretical possibility that scansion may be based on a phonological representation without some otherwise relevant aspect of structure is amply attested in other poetic systems (Hanson, 1992, 1999; Hanson & Kiparsky, 1996; Kiparsky, 1968, 1972; Malone, 1982, 1988; Mohanan, 1986). One simple example from English is the fact that in iambic pentameter stressed syllables of polysyllabic words are not normally permitted in W (Kiparsky, 1975, 1977), but many poets make exceptions for grammatical words. Thus Sidney himself has (13a) in *Astrophil and Stella*, but no lines like (13b). Similarly, Shakespeare's *Sonnets* have lines like (14a) but none like (14b) (Kiparsky, 1975, 1977):

- (13) (a) Of touch they are that **without** touch doth touch (11, 12)
 $w \quad s \quad w \quad s \quad w \quad s \quad w \quad s \quad w \quad s$
 (b) *Of touch they are that **divine** touch hath touched (construct)
 $w \quad s \quad w \quad s \quad w \quad s \quad *w \quad s \quad w \quad s$
- (14) (a) Weeds **among** weeds, or flowers with flowers gather'd (124, 4)
 $w \quad s \quad w \quad s \quad w \quad s \quad w \quad s \quad w \quad s \quad <>$
 (b) *Weeds **attract** weeds while flowers with flowers gather (construct)
 $w \quad s \quad *w \quad s \quad w \quad s \quad w \quad s \quad w \quad s \quad <>$

Still more strikingly, Donne differs from these poets in allowing stressed syllables of polysyllabic words in W if they are subordinate to a more strongly stressed following syllable, and so allows lines like (15a), parallel to (13b, 14b), though not (15b). Yet he still exempts grammatical words from even this loosened constraint, as in (15c) (Hanson, 1999):

- (15) (a) Shall **behold** God, and never tast death's woe
 $w \quad s \quad w \quad s \quad w \quad s \quad w \quad s \quad w \quad s$
 ('Holy Sonnet: At the round earths', 8)

⁴ In fact the phonological structure of *cano* itself is unruly and open to debate. As will be discussed further in section 3.1, in Latin disyllabic words with initial light syllables and heavy final ones cannot be parsed as a moraic trochee on the assumptions outlined in section 2.3. Either a monomoraic foot must be exceptionally allowed, or else final extrametricality must be exceptionally suspended and a heavy second syllable exceptionally admitted as the nonhead of the foot as shown in (11). (While some words of this type solve the problem of the heavy second syllable by shortening its vowel, as will be seen in section 2.5, this is not the case for *cano*, as that syllable's position in S here shows.) I assume the latter structure here, because we know already that words with similar structures are admitted word-initially in other languages, notably Old English and Finnish (Hanson, 1992; Hanson & Kiparsky, 1996). The same problem for scansion remains on either analysis, however.

Note also that the final syllable of *primus* and *ab* are represented as light; their final consonants are assumed to be parsed as onsets to the vowel-initial syllables following, as discussed further in section 3.6.

-
- (b) *Shall **behold** us, and never tast death's woe (construct)
 w s *w s w s w s w s
- (c) And **betweene** us all sweetnesse may be had ('Sappho to Philaenis', 43)
 w s w s w s w s w s

Obviously if some phonological structure can be discounted in scansion, it must be possible to say what and why, or scansion would mean nothing at all. In these cases, it is possible to explain why grammatical words' stress should be able to be discounted by drawing on the broad distinction between the lexical phonology, in which the structure of lexical words (normally nouns, verbs, adjectives) in and of themselves is determined, and the postlexical phonology, in which syntactic context comes into play (Kiparsky, 1982). In English, lexical words are assigned stress in the lexical phonology, but nonlexical words (in English all grammatical words such as prepositions, auxiliaries, pronouns, determiners, conjunctions, complementizers, interjections and certain adverbs) only in the postlexical phonology (Inkelas & Zec, 1993). Hence, lines like (15c) in Donne can be understood as ones in which scansion is based on the lexical representation only (Hanson, 1999). Incompatibility between the meter and the postlexical representation may make itself felt as complexity or disturbance in such lines, but will not render them unmetrical. While an analysis of why it is that stress even in lexical words should be able to be discounted in Latin is beyond the scope of this paper, we might expect it to involve in a similar way the question of what level stress is assigned at, a question to which we return briefly in section 4.6 below.

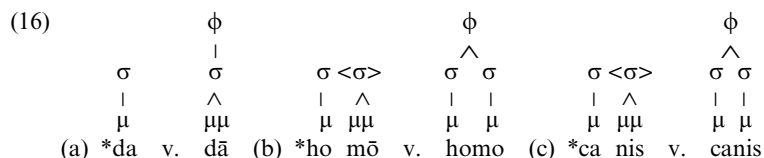
3 English syllable quantity

3.1 *The problem*

Given the metrical constraints in (9), the adoption of quantitative meter into a new language, if it is to be natural rather than artificial, requires ascertainment of how both the distinction between heavy and light syllables and the moraic trochee play out in that language. It is well known, for example, that not all languages classify syllables as heavy according to the same criteria as Latin does: for example, Khalkha Mongolian has both CVV and CVC syllables, but only CVV syllables count as heavy; similarly, Kwakwala has CVC syllables closed with all types of consonants, but only those closed with sonorants count as heavy (Zec, 1988).

But the problem is often more complex than that, because even within a single language, a grammar's system of weight is not necessarily static and isolated, but may interact dynamically with other requirements (Prince & Smolensky, 1993). Latin itself offers two well-known examples, discussed by Prince (1990) and Mester (1994) drawing on the work of Allen (1973) (though see also Lahiri, Riad & Jacobs, 1999). First, the initial vowel of *dare* 'to give' is short, but the corresponding vowel in the imperative singular *dā* is long (cp. *date*, imp. pl.). Conversely, in Preclassical Latin, under 'iambic shortening' the final long vowels of some disyllabic words with

initial light syllables such as *homō* ‘human being nom.sg.’ were sometimes scanned as short, and in some frequently used words of this type eventually became short, as in *bene* < PreCl *benē*, *male* < PreCl *malē* etc.; final closed syllables in comparable words like *canis* ‘dog nom.sg.’ were also exceptionally scanned as light. Such lengthening and shortening of vowels, disregarding of final consonants, and indeed suspension of the usual extrametricality of final syllables can all be understood as serving the same end, of allowing the word to be fully parsed as a moraic trochee:



Given such an analysis, are the syllables *da* in (16a), *-mo* in (16b), or *-nis* in (16c) heavy or light? It is not a simple question to answer: both have some truth on their side. In the grammar of Latin, respecting syllable weight is evidently less important in certain contexts than achieving desired foot structure, and may be conceded in a conflict between them.

The fundamental problem for quantitative meter in English is that such ambiguity about syllable weight is widespread and dramatic, because the cases are many and various in which respecting syllable weight, while desirable, is nonetheless evidently less important than other considerations. I do not propose to offer here any clear straight path through the entire vast, dark, and tortuous forest of the English stress system and the role of syllable weight in it; but I will lay out the nature of the problem for three principal types of syllables which have particularly vexed critics of the English quantitative experiments: stressed CV syllables, unstressed CVC syllables and unstressed CVV syllables.

3.2 Historical caveat

Moreover, to keep clear of some of the worst thickets, I will lay out the problem as it arises in present-day English, following the advice of Young (1928) with respect to Chaucer, that where a harmonious sense of a meter arises on the assumption that some aspect of the language was like what it is today, it may reasonably be assumed to have been similar in the poet’s time. That said, two aspects of this oversimplification bear mention.

First, the vowel system of Sidney’s English of course differed in some respects from that of present-day English. According to Dobson (1968), the most careful educated Standard English of the late sixteenth century would probably have had the vowels in (17), whose later developments are given in parentheses:⁵

⁵ Other scholars give a somewhat different picture – see, for example, Kökeritz (1953) – but the differences do not affect the essential argument here.

(17) (a) long:	(b) diphthong:	(c) short:	(d) reduced:
i sweet	(aɪ <) əɪ ride	ɪ sin	ə a cat
(e <) ε great	(aʊ <) əʊ house	ε bed	
u boot	ɔɪ joy	(æ <) a cat	
(o <) ɔ boat		(ʌ <) ʊ push, cut	
	(e <) aɪ rain	(ɒ <) ɔ dog	
	(ɔ <) aʊ law		
	ɪʊ pew		
	(u <) εʊ dew		

There are systematic differences in the quality of certain vowels, as shown. And there was some sporadic variability in quantity in some individual words – for example, *holy* was recorded with a long vowel in some orthoepists’ accounts, and a short one in others’ (Dobson, 1968: 484). But as a system, the length distinctions relevant to syllable weight were completely parallel to those of the present-day language: the present-day counterparts of the vowels in (17a,b) are all long, and those of the vowels in (17c) short (Chomsky & Halle, 1968).

Second, although the stress patterns of words in Sidney’s English are well known – and well known to be the same in most words discussed below as they are in the present-day language – there is some disagreement as to the structure of the stress system itself, and its proper analysis within phonological theory. At issue is how well established the Romance stress pattern to be discussed in section 3.4 was relative to the Germanic requirement of initial stress which it weakened; and more central to our concerns here, whether the moraic trochee which is the phonological foot widely agreed to figure in the stress system of English today was in the process of developing out of a rather different foot type (Dresher & Lahiri, 1991; Lahiri & Fikkert, 1998), or whether it had already been the basic foot type of English, differing only in how it interacted with the Germanic requirement of initial stress (Hanson, 1992; Hayes, 1995). In assuming the relevance of modern English, I am assuming that the moraic trochee was always the foot type in Sidney’s English. While this assumption is not strictly necessary for the analysis of Sidney’s metrical practice which follows, it finds support in that of his contemporary Shakespeare, as we will see in section 3.5. And especially interestingly for our purposes, it accords with the argument of McCully (1991: 7) that linguistic as well as cultural developments contributed to the Renaissance interest in quantitative meter: ‘the quantitative movement takes place in the 16th century because it is during that period, and not before, that English stress patterning begins to be like that of Classical Latin’.

3.3 Lexical monosyllables

Returning then to a description of syllable weight in present-day English, the phonology of lexical monosyllables draws a clear distinction whereby CVV and CVC syllables are heavy and CV syllables are light, just as in Latin. It is an old

observation that the former are acceptable structures of lexical words (18a,b), while the latter are not (18c):

- (18) (a) bee, bay, boo, bow (n.), law
 bow (v.), buy, boy, pew
 (b) pit, pet, pat, put, putt, pot
 (c) *[pɪ], *[pɛ], *[pæ], *[pʊ], *[pʌ], *[pɒ]

3.4 The Latin stress rule

The phonology of polysyllabic lexical words draws the same distinction in certain subsystems of stress inherited from Latin. In the nouns in (19) stress falls on the penultimate syllable if it is CVV (19a) or CVC (19b), but on the antepenult if the penult syllable is CV (19c) (Chomsky & Halle, 1968: 71):⁶

- (19) (a) aréna, hiátus, aróma, horízon
 (b) ellípsis, agénda, synópsis, veránda
 (c) América, génesis, metrópolis, aspáragus, álgebra, bánister

The facts of (18)–(19) suggest furthermore that as in Latin, English syllables are organized rhythmically into moraic trochees (Hayes, 1987, 1995; Kager, 1989; McCarthy & Prince, 1986). This accounts not only for the pattern in (19), under an analysis that assumes that as in Latin final syllables are extrametrical, but also for the requirement in (18) that lexical monosyllables must be heavy: only then do they satisfy the structural requirement for a moraic trochee, and hence for stress, a requirement for lexical words.

3.5 Resyllabification in lexical words

So far, then, the facts are on the side of critics who have assumed that the rules of syllable quantity for Latin apply equally to English. But for stressed CV syllables, this is not the end of the story. Kahn (1980) observes that contrary to the universal preference for single consonants to be syllabified as onsets, and contrary to the evidence from stress in (19c) that this is exactly what English does (whence *aspára*<*gus*> and not **asparág*<*us*>), English speakers have strong intuitions that if

⁶ While the principle referred to in section 2.2 under which intervocalic consonants will preferably be parsed as onsets is universal, the sequences which may make up acceptable onsets may vary from language to language. Sidney clearly interprets (2bi) as referring to sequences of consonants which may form a single-syllable onset in English (see *algebra*, *banister*) in (19c). Thus, not only a vowel preceding *pr* may form either a light or a heavy syllable as in (i, ii) but also one preceding *st* as in (iii, iv):

(i) When Cedars to the ground be opprest by the weight of an emmott, (77)
 s w s w s w s w s w s w s w

(ii) (Opprest with ruinouse conceites) by the helpe of an outcrye: (109)
 s w s w s w s w s w s w

(iii) (Since no estates be so base, but love vouchsafeth his arrow, (50)
 s w s w s w s w s w s w

(iv) Well may a Pastor plaine, but alas his plaints be not esteem'de. (39)
 s w s w s w s w s w s w

a syllable is stressed, a consonant following its vowel will be perceived as a coda: *pis.ton, p̄al.ace, c̄ap.i.tal* rather than *pi.ston, p̄a.lace, c̄a.pi.tal*. All major dictionaries which give syllabifications (*American Heritage, Webster's, Random House*) give these. And there is phonological evidence to support these intuitions (Borowsky, 1986; Gussenhoven, 1986; Kahn, 1980, and others). For example, in American English a /t/ is aspirated syllable-initially as in (20a), and unreleased syllable-finally as in (20b); however, the /t/'s in (20c), which if parsed simply as onsets would be syllable-initial and hence expected to be aspirated, are in fact realized as flaps:

- (20) (a) [t^h]: Tom, today, atomic, rotate, maintain
 (b) [t^o]: got, garnet, antler
 (c) [r]: atom, bitter, weighty, barter

On the analysis of Kahn (1980), supported in a slightly revised form by Gussenhoven (1986), consonants in the position of the /t/'s in (20c) are in fact AMBISYLLABIC, syllabified not only as onsets but simultaneously as codas, as in (21); on this analysis, it is ambisyllabic /t/s, as opposed to purely syllable-initial or purely syllable-final ones, which are realized as flaps:

- (21)
- $$\begin{array}{c} \sigma \quad \sigma \\ | \vee | \\ \text{a t o m} \end{array}$$

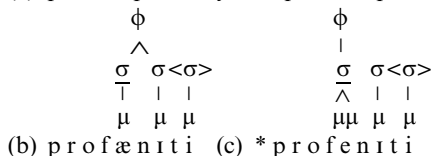
The precise formalization of ambisyllabicity, its environment and its effects, such as flapping, has been a matter of considerable debate (Hammond, 1997),⁷ but on every account, in the case which matters here a single consonant preceded by a short stressed vowel and followed by an unstressed one as in (21) closes the preceding syllable, giving a syllable type that will henceforth be represented here as CV.C.

Historically, it is highly plausible that there should be some rhythmic enhancement of CV.C syllables such as that achieved by their acquisition of codas as in (21). As Riad (1992) points out, the Germanic languages have always shared a preference for stressed syllables to be heavy (Prokosch's Law). For example, in sixteenth-century Swedish weight was adjusted to accommodate this preference: Old Swedish words with initial light syllables like *vika* 'week' either lengthened the initial syllable's vowel or geminated the following consonant, becoming *vēka* or *vekka* in Modern Swedish (Riad, 1992: 270). In English the effects have been much less clear, perhaps because of competing Romance influence on the stress system; but certainly significant prosodic developments have been attributed to the same preference, such as Middle English lengthening of vowels in open syllables, changing words like *tale* 'tale' to *tāle* (Riad, 1992: 334).

⁷ Among the many debated points, the most important here is the fact that a /t/ following an unstressed syllable as in *capital* is flapped. Consistent with this, both Kahn and Gussenhoven propose that only the vowel following an intervocalic consonant is required to be unstressed for the consonant to be ambisyllabic. However, intuitions (Kahn, 1980) and dictionaries support syllabification of intervocalic consonants as codas only in stressed syllables, and the problem of the status of consonants between unstressed vowels remains outstanding.

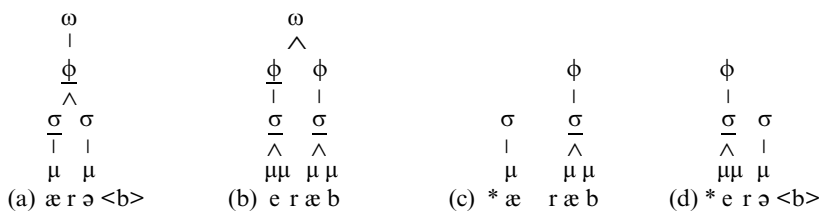
If CV.C syllables are indeed closed with ambisyllabic consonants as in (21), does it follow that they are not light but heavy? In fact such a simple conclusion would be problematic. Although much of the prosodic system of English including the evidence in (18) and (19) could be analyzed on the assumption that its foot type is a trochaic one which requires only that its nonhead be light, crosslinguistic evidence suggests that the only trochaic foot made available by universal grammar which imposes this requirement is the moraic trochee discussed in section 2.3 (though see the caveat in section 3.2), which in its disyllabic incarnation requires the first syllable to be light as well. Moreover, Prince (1990) argues that we can see the effects of parsing by moraic trochees with obligatorily light initial syllables in English in the vowel alternations of ‘trisyllabic shortening’ as in (22) (Chomsky & Halle, 1968; Lahiri & Fikkert, 1998; Myers, 1987) and ‘Fidelholtz’s Law’ as in (23) (Fidelholtz, 1966; Ross, 1972). Setting aside the issue of vowel quality, in the stressed syllable of a word like *profanity* the short vowel of (22b) is preferred over the long one of the root *profane* as in (22c) because just as in the Latin words in (16b, c) the former choice allows the word to be more fully parsed as a moraic trochee:

(22) (a) profane/profanity; compete/competitive; type/typify; cone/conic



Similarly, in a word like *Arab*, the standard pronunciation in (23a) and the non-standard (23b) have in common that they permit full parsing of the word by moraic trochees while the nonoccurring ones in (23c,d) do not:

(23) Arab:



If the ambisyllabic /n/ of *profanity* or /r/ of *Arab* made the preceding syllable heavy, the hypothesized motivation for these vowel alternations would be lost.

Perhaps most interestingly for our purposes, words in which the first syllable is stressed and light and the second unstressed have a special status not only in Old English meter, but also in several modern English meters. In the Sprung Rhythm of Hopkins and some close metrical relatives, such sequences can occupy single metrical positions, while otherwise comparable words with initial heavy syllables cannot; these meters have been analyzed as taking the moraic trochee as the measure of the maximum size of any single metrical position (Hanson, 1992; Hanson & Kiparsky, 1996; Kiparsky, 1989):

- (24) (a) The **dapple**-eared **lily** below thee, that country and town did ('Duns Scotus'
 w s w s w s <> w s w s <> Oxford' 3)
 *purple *iris
- (b) **Summer** ends now; now barbarous in beauty the stooks [Ø] rise ('Hurrahing in
 w s <> w s w s w s w s Harvest', 1)
 *winter
 *autumn

And in the iambic pentameter of Shakespeare and other poets, too, such sequences have a special status. Extra syllables that cannot be analyzed as extrametrical are common, but are almost always closely bound rhythmically with a preceding syllable which is stressed and light (Kiparsky, 1977; Young, 1928: 74, 179–88). This distribution has also been analyzed as a consequence of this meter taking the moraic trochee as the measure of the maximum size of any single metrical position, although in other ways the meter is quite different from Sprung Rhythm (Hanson, 1997; Hanson & Kiparsky, 1996; Kiparsky, 1977):⁸

- (25) (a) Come to one mark; as **many** ways meet in one town; (*Henry V* 1.2.208)
 w s w s w s w s w s
 *sundry
 *eighty
- (b) **Villain**, thy own hand yields thy death's instrument, (*Richard II* 5.5.106)
 w s w s w s w s w s
 *Exton
 *Traitor

Again, if the ambisyllabic /p/ of *dapple* or /l/ of *lily* or /m/ of *summer* or /n/ of *many* or /l/ of *villain* made the initial syllable of those words heavy, there would be no explanation for why they behave as prosodically distinct from words with unambiguously heavy initial syllables.

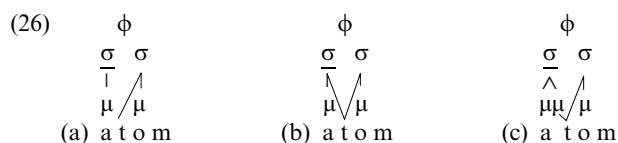
Thus, as in the Latin examples above, we arrive at something of a contradiction: we have evidence from stress, vowel alternations, and meter that CV.C syllables are light, but we also have evidence from intuitions about syllabification, consonant alternations like flapping and historical tendencies that they are closed, and we have evidence from stress that in general in English closed syllables are heavy. At the very least, we can see why there has been little agreement over how such syllables should be treated in quantitative meter.

One possible resolution of the contradiction might be that ambisyllabic codas are

⁸ The treatment of 'in one' as a single metrical position likewise follows on this analysis, on the assumption that the numeral *one* as a determiner is nonlexical; see Hanson & Kiparsky (1996) and Hanson (1997) for discussion. Other examples of the cadence cited by Kiparsky (1977: 236) include the following; see Young (1928) and Hanson (1997) for many more:

- And spend his **prodigal** wits in bootless rhymes (*Love's Labor's Lost* 5.2.64)
 w s w s w s w s w s
- In the affliction of these **terrible** dreams (*Macbeth* 3.2.18)
 w s w s w s w s w s
- Followed my **banishment**, and this twenty years (*Cymbeline* 3.3.69)
 w s w s w s w s w s

simply different from pure codas in their prosodic role within the syllable, a difference that could be formalized by their being adjoined directly to their syllable without mediation of a mora, as in (26b) as opposed to (26c):



But if the closure of CV.C syllables is motivated by rhythmic considerations as its history suggests, it is odd that the relevant rhythmic measure of prominence, syllable weight, shouldn't come into play.

An alternative resolution of the contradiction – one which we will see below provides an explanation for Sidney's practice – is to draw on the idea from the theory of lexical phonology that the grammar is organized into different levels according to morphological and syntactic structure, with the phonology corresponding to each of these levels being formally distinct (Kiparsky, 1982). We have already referred in section 2.4 to the broadest of these divisions, that between the lexical and postlexical phonology; but the lexical phonology may also be subdivided. Two such levels have been proposed for English: level 1, at which affixes of limited productivity (e.g. *-ity*) are added, and level 2 at which fully productive affixes (e.g. *-ness*) are. The phonology at level 1 in English includes assignment of foot structure within words – that is why level 1 affixes affect the position of stress (*sólid*, *solidity*) but level 2 ones do not (*sólidness*). As Lahiri & Fikkert (1999) observe, none of the evidence for ambisyllabicity situates it at level 1. Moreover, level 1 phonology is highly restricted, permitting the representation of only those features which are distinctive in the language and of only the core prosodic templates (Borowsky, 1986; Kiparsky, 1982). Therefore it is plausible that at level 1 rhythmic parsing in English must respect the core syllabification principles and the structure of the moraic trochee, but at later levels different syllabifications and foot structures – specifically the ambisyllabicity of (21) and the trochaic feet with heavy initial syllables which it entails as in (26c) – are free to come into play under pressure to satisfy the Germanic imperative that stressed syllables be heavy. I leave open the question of exactly which later level is the relevant one; for ease of exposition I will assume it to be the postlexical phonology, but nothing here depends upon it being that rather than level 2. On this approach, then, CV.C syllables are indeed light in the level 1 lexical phonology as in (26a), but in the postlexical phonology they are closed by ambisyllabic consonants which render them heavy as in (26c).⁹

⁹ This suggestion as to where ambisyllabicity fits in the grammar of English is crucially different from that of Myers (1987), assumed in an earlier study of this subject (Hanson, 1992), under which ambisyllabicity must already be in place at level 1. Myers (1987) unites the vowel shortenings of trisyllabic shortening in (22) with those of closed syllable shortening as in *receive/receptive*, arguing that they can be seen as the same process once it is recognized that the ambisyllabic consonant closes the stressed syllable with the alternating vowel in the trisyllabic shortening cases. However, Lahiri & Fikkert (1999) provide historical evidence for decoupling trisyllabic shortening and closed syllable shortening. Moreover, the assumption

This quantitative ambiguity deriving from ambisyllabicity will be argued in section 4 to be fundamental to the apparent inconsistency and actual regularity of Sidney's practice. In order to complete the picture, however, and to justify the scansion assumptions in that analysis, we first consider briefly two additional problems of indeterminate syllable quantity in English.

3.6 CVC syllables

The weight of CVC syllables in polysyllabic words in English is likewise not susceptible of a blanket generalization over syllable type, but again is dependent upon the phonological context. Word-finally, while CVV syllables always bear stress (primary or secondary) as in *bállyhòò*, *dóminò* (as do CVVC syllables, as in *récognìze*, *pálinдрòme*), CVC syllables are normally unstressed as in *syllabus*, *Elizabeth* (Hayes, 1982; Ross, 1972). This divergence of CVC from CVV syllables has been brought in line with the unified patterning of the two types with respect to the stress of lexical monosyllables and the Latin stress rule by the hypothesis that in English as in many other languages final consonants may be extrametrical (Hayes, 1982), perhaps in order to remain free to serve as onsets to following vowel-initial words (Borowsky, 1986). With final consonants ignored in parsing, final CVC is equivalent to CV, and is light. However, there are also a fair number of words in which final CVC syllables are stressed, such as *blúnderbüss*, *ópsimàth* or the two-stress variant of *Áràb* in (23b) (Ross, 1972). If stress is a manifestation of heading a foot, and the foot of English requires two moras, then these final stressed CVC syllables must be heavy. Thus, there is no across-the-board answer to the question of whether CVC syllables are heavy or light: potentially they are either.

Although they play only a minor role in Sidney's practice, it is worth commenting on the still less tractable case of unstressed nonfinal CVC syllables. Contrary to the expectation that might be established by words like *fàntástic*, *prèhénsile* that as in Latin an English word is exhaustively parsed into moraic trochees respecting the classification of CVV and CVC syllables as heavy, it is well known that a great many CVC syllables appear without stress in a variety of contexts: for example, initially before another stress as in *Kentúcky*, or medially between stresses as in *éxercìse*. Even the Latin stress rule in section 3.4 has exceptions in which CVC penults remain unstressed; the question of the weight of the middle syllable of *cárpenter*, its apparent segmental heaviness belied by its absence of stress, was at the heart of the famous debate between Spenser and Harvey in their correspondence about quantitative meter in English (Attridge, 1974; Smith, 1937). The facts are intricate, and various analyses have been proposed: it could be that syllables such as these really are light, with the sonorants they end with being not codas but rather nuclei of their

that CV.C syllables are closed and heavy in the level 1 lexical phonology leaves their analysis as light by poets like Shakespeare unexplained, and, as we will see in section 4.6, would require a less restrictive theory of meter to make sense of Sidney's practice.

syllables; or that such syllables really are heavy, but remain unstressed in order to avoid adjacent stress, a dispreferred configuration in many languages; or some combination of such considerations (Hayes, 1982). Resolution of the issue would be well beyond the scope of this paper. For our purposes, the important point is simply that again, whereas a stressed CVC syllable must certainly be heavy, the weight of an unstressed one remains something of an open question, whose answer is evidently less important in the grammar than other considerations.

3.7 CVV syllables

A different complication arises for CVV syllables: in English all nonlow vowels are long in certain contexts (Chomsky & Halle, 1968; Hammond, 1997). Within words, the first of two heterosyllabic vowels is always long: there are no words like *[rum], *[sɪər] parallel to [rum] ‘ruin’, [sɪər] ‘seer’. Similarly, word-final nonlow vowels are always long: there are no words like *[merɪ], *[ɟɟɪtsʊ] parallel to [merɪ] ‘Mary’, [ɟɟɪtsʊ] ‘jūjitsu’. Yet other aspects of phonological structure indicate differences in the lengths of these vowels. For example, the distribution of stress suggests that the final vowel of *Marie* is long while that of *Mary* is not, or that the penultimate vowel of *plebeian* is long while that of *alien* is not. More subtly, if flapping requires ambisyllabicity, and ambisyllabicity requires a following unstressed vowel, then for dialects which allow a flap in such words as *motto*, *Haiti* but not *veto*, *emeriti*, the final syllable of the latter must be stressed and hence contain a long vowel while that of the former must be unstressed and contain a short vowel (Chomsky & Halle, 1968: 190–1). One interpretation of such facts is that the CVV syllables which bear stress have long vowels in the lexical representations, but all nonlow vowels in open syllables are lengthened in the postlexical phonology (Hammond, 1997). But at the very least, for our purposes, the crucial fact is simply that there is genuine ambiguity about English vowel length in certain contexts, as a result of the grammar’s overriding dispreference for short vowels in those positions.

3.8 Nonlexical words

The foregoing complexities regarding the weight of unstressed syllables have their most important repercussions for nonlexical monosyllables. From a strictly phonological point of view, like lexical monosyllables, nonlexical monosyllables must have either a CVV or a CVC structure in order to be stressed: the CV words *a*, *the* may be stressed for emphasis only if their vowels are specially lengthened. But unlike lexical words, there is no requirement that nonlexical words be stressed; and there is room for considerable variation depending on their phonological and syntactic context, their rhetorical value and so on.

Most affected are CVC monosyllables. Because in English only vowels in unstressed syllables may reduce to [ə], the simplest (though not only possible) explanation for why certain vowels may not reduce is that their syllables are stressed

(Inkelas & Zec, 1993; Selkirk, 1984). On this hypothesis, those with long vowels in closed syllables (CVVC) as in (27a) and those closed with double consonants as in (27b) (CVCC) which do not allow [ə] are stressed and so must be heavy. But CVC words, analogously to the final syllables of *opsimath*, *Elizabeth* in section 3.6, may or may not allow [ə] and so may or may not be stressed: some, like those in (27c), always are; while those in (27d) are only optionally. Hence, though nonlexical CVC syllables may always be plausibly taken to be heavy, they may in some cases equally well be taken to be light. CVCC syllables where the first final consonant is a sonorant as in (27e) pattern with CVC syllables in this regard.

- (27) (a) these, those, each, both, all, more, most, whose, whom, own, thine, our, down,
out, round, like, their
(b) must, since, its, hast, didst, such
(c) on, one, none, up, nor, doth, hath, where, there, here, then, not, yet
(d) for, from, in, at, of, with, as, than, or, but, if, him, her, it, us, his, your, them,
what, when, am, are, were, been, can, will, shall, is, was, has, had, does, did,
have, some, an, that, this
(e) and, art, wilt, wert

Open nonlexical monosyllables also pose a problem analogous to that in lexical words in that the widespread prohibition we saw in section 3.7 against short vowels in open syllables word-finally may obscure the length of their vowels. In present-day English, there is no dispute about the diphthongs of (28a, b), which are all long. The vulnerability to reduction of the vowels in (28f, g) suggests equally clearly that they must be underlyingly short, although as mentioned above lengthened variants do arise in certain contexts. But the words in (28d) are not so easy to classify. Their invulnerability to reduction suggests that both they and the words in (28c, e) are long; and this is indeed the classification proposed by Selkirk (1984).

- (28) (a) by, I, my, thy
(b) why, they, nay, yea, thou, now
(c) though, O, lo, through, Ah, too
(d) she, he, we, ye, thee, who, do, no, so
(e) you
(f) to
(g) a, the

But Kenyon & Knott (1953) distinguish those in (28c) from those in (28d,e), claiming that only the latter may be realized by ‘phonetically short vowels’; this finds support in these words’ systematic alternations with forms with short vowels, such as *he*, *him*, *his* or *no*, *non*, and, interestingly for our purposes, also in Hopkins’ metrical practice (Kiparsky, 1989). Thus, the surface length of the vowels in such syllables may belie underlying shortness.

Moreover, in the absence of the stabilizing effect of stress, there is some evidence that the vowels of these words may be more different today from what they would have been in Sidney’s English than those of lexical words are. The words in (28d) were recorded by phoneticians of the time as having either short or long vowels, just

as Kenyon & Knott found for their present-day counterparts. But the words in (28a) were also sometimes recorded as having a short vowel (‘i’), *too* was occasionally represented as having a short vowel, and *you* in (28e) was only recorded as having either a diphthong or a long vowel (Dobson, 1968: 464ff).

3.9 Summary

In sum, in the phonology of English, all things being equal, CVV and CVC syllables are heavy, CV light. But all things are seldom equal. If a CV syllable is stressed and followed by a consonant-initial unstressed syllable, it is closed and may reasonably be inferred to be heavy, a state of affairs we have suggested obtains in the postlexical phonology only. If a CVC syllable is unstressed, especially if it is word-final or nonlexical, it may reasonably be inferred to be light, though no direct evidence as opposed to theory-internal chains of reasoning really precludes the possibility that it is heavy either. Similarly, if a CVV syllable is unstressed it may nonetheless in some cases be inferred to be light at some level, its long vowel a consequence of a general prohibition on short vowels in certain open syllables, again possibly a state of affairs obtaining only in the postlexical phonology. What these complications have in common is that respecting the basic weight distinction in English is evidently less important in the grammar than avoiding some other undesirable structures, such as stressed light syllables, onsetless words, adjacent stresses, short vowels in open syllables, and so forth. Syllable weight plays a significant role in the phonology of English, but not the most important one.

4 Sidney’s practice

4.1 The text

Sidney’s quantitative experiments comprise twelve short poems, eight in *OA* (11, 12, 13, 31, 32, 33, 34, and 74) and four in *Certain Sonnets* (5, 13, 14, and 25) (Ringler, 1962).¹⁰ Of these it is *OA* 13 we will focus on here, a poem of 175 lines of dactylic hexameter, claimed by the editor of the definitive edition of Sidney’s poetry (Ringler, 1962: 394) to appear ‘to be correct according to Sidney’s own rules’, and by Attridge (1974), who discusses it in detail, to be the finest and latest representative of Sidney’s quantitative experiments. We will also briefly consider *OA* 31, 11, 74, and to some extent 34, which share the basic metrical structure defined by (7) and (9). Of these, *OA* 31 is straightforward dactylic hexameter. *OA* 11 and 74 are in the elegiac distich form, in which lines of dactylic hexameter alternate with ‘pentameter’ lines. The pentameter lines are described in Sidney’s annotation by the template in (29a) (again with variations added in brackets), and are tentatively assumed under the approach

¹⁰ All citations of *OA* refer to Ringler’s (1962) edition, and specifically to *OA* 13 unless otherwise indicated.

adopted here to be like hexameter lines except with catalectic weak positions in the third and sixth feet. *OA* 34 is in asclepiads, described in Sidney's annotation by the template in (29b). These are tentatively assumed to be like pentameter lines through the third foot. The remainder of the line is more difficult. Whatever its proper structure in Latin, and despite the suggestion of Sidney's annotation that it consists of two dactylic feet, Sidney seems to treat it as having the same structure as the first part of the line except for having a trochee rather than a dactyl in its penultimate foot, and it is that treatment which is reflected in the scansion below, which give it six strong positions.

- (29) (a) - - - - - - - - - -
 [~ ~] [-]
 (b) - - - - - - - - - -
 [~ ~] [-] [-]

These assumptions, it may be said, result in certain odd junctures that point to a need for more careful study of these metrical forms themselves, but do not seem crucial to the argument here. For the handful of lines cited from poems in other meters (mainly in footnotes to section 4.12) I make no attempt to analyze the meter in terms of the theory of Hanson & Kiparsky (1996), and instead retain traditional representations of scansion.

OA itself is a pastoral romance which opens with one of its main characters, the Duke of Arcadia, consulting an oracle to know whether his current great happiness will last. He is told that within the year another will sit on his throne, one daughter will be stolen from him by a prince, his other daughter will embrace an unnatural passion, and he will commit adultery with his own wife. Hoping to escape the prophecy he withdraws to live in disguise and seclusion among shepherds, leaving a trusted friend to sit on his throne, and forcing two princes who fall in love with his beautiful daughters to disguise themselves as a shepherd in one case and an Amazon in the other in order to gain access to the princesses, thereby bringing about one of the prophecies, and setting the stage for the fulfillment of the other three. The story is developed in four prose books spangled with verse lyrics; these prose books are themselves separated by four verse eclogues organized by brief prose narration. The eclogues depict the shepherds' evening recreations of athletics, dancing, music, and especially verse competition. It is in these verse competitions that the disguised young princes have an opportunity to reveal their true characters to the princesses, by spontaneous compositions in Classical meters.

4.2 *Lexical monosyllables*

In *OA* 13, lexical monosyllables are normally scanned as heavy, as in the boldface words of (30)–(32):

- (30) (a) Nature against we do **seeme** to rebell, **seeme** **fooles** in a **vaine** **sute**. (24)
 s w s w s w s w s w s w

- (b) And to the woods or brookes, who do make such dreery recitall (42)
 s w s w s w s w s w s w
- (c) When trees daunce to the pype, and swift streames stay by the musicke, (47)
 s w s w s w s w s w s w s w
- (31) (a) Or when an Echo begins unmov'd to sing them a love song. (48)
 s w s w s w s w s w s w
- (b) Say then what vantage do we get, by the trade of a Pastor? (49)
 s w s w s w s w s w s w
- (c) Popler changeth his hew from a rising sunne to a setting: (132)
 s w s w s w s w s w s w
- (32) (a) Hardly remains fyer hid, where skill is bent to the hiding, (59)
 s w s w s w s w s w s w
- (b) What skill serveth a soare of a wrong infirmity judged? (21)
 s w s w s w s w s w s w
- (c) O glittring miseries of man, if this be the fortune (89)
 s w s w s w s w s w s w
- (d) Lawrell shews what I seeke, by the Mirre is show'd how I seeke it, (116)
 s w s w s w s w s w s w s w
- (e) And thinke ther she do dwell and heare what plaintes I do utter: (143)
 s w s w s w s w s w s w s w
- (f) When that noble toppe doth nodd, I beleeve she salutes me; (144)
 s w s w s w s w s w s w
- (g) And may I not (say I then) gett up though griefs be so weightie? (128)
 s w s w s w s w s w s w
- (h) Thus both trees and each thing ells, be the bookes of a fancy. (140)
 s w s w s w s w s w s w

This is not surprising for those in (30) which meet the conditions of (2) in and of themselves, or for those in (31) which do so in their context in the line. But in (32), CVC words are scanned as heavy even when followed by vowel-initial words, contravening the prescription of (2b). This is, however, true to the phonology of English, which we have seen in section 3.3 requires lexical monosyllables to be heavy.

Just how much of an achievement this practice represents emerges if we compare Sidney's practice with his Latin models. Latin has few monosyllabic words, and almost no lexical ones. In the first 175 lines of the *Aeneid* there are around 152 monosyllabic words, of which only twelve are even arguably lexical. Of these only four (*bis* 'twice' (line 71), *ter* 'thrice' (line 116), and *dat* 'give (3 sg. pres.)' (lines 105, 156) have a CVC structure. These are all scanned as heavy, but are also all followed by consonant-initial words, and thus consistent with (2b). The 175 lines of *OA* 13, in contrast, include countless monosyllables, of which at least 550 are lexical, and around sixty have a CVC structure. How to handle the commonness of monosyllables in English was a major preoccupation of Renaissance poets, and Sidney appears to have come to an unequivocal, metrically unprecedented and phonologically well-founded conclusion about it: they are heavy.

4.3 Stressed syllables of lexical polysyllables scanned as heavy

Primary stressed syllables of polysyllabic words are also normally scanned as heavy. Not surprisingly, CVV(C), CVCC and nonfinal CVC syllables always are:

- (33) (a) Sacred Muse, who in one contaynes what nine do in all them. (10)
 s w s w s w s w s w s w
- (b) Pleasd to receave that name by rebounding answere of Echo, (44)
 s w s w s w s w s w s w
- (c) Since outward pleasures be but halting helps to decayd soules) (52)
 s w s w s w s w s w s w
- (d) What marvaile tho a Prince transforme himselpe to a Pastor? (91)
 s w s w s w s w s w s w
- (e) Whose force had such force so to transforme, nay to reforme me, (166)
 s w s w s w s w s w s w
- (f) Popler changeth his hew from a rising sunne to a setting: (132)
 s w s w s w s w s w s w

More interestingly, final CVC syllables also are scanned as heavy, even when followed by vowels as in (34d):

- (34) (a) Nature against we do seeme to rebell, seeme fooles in a vaine sute. (24)
 s w s w s w s w s w s w
- (b) What meane is there, alas, we can hope our losse to recover? (27)
 s w s w s w s w s w s w
- (c) Now by thy words I begin, most famous Lady, to gather (94)
 s w s w s w s w s w s w
- (d) You, though feares do abash, in you still possible hopes be: (23)
 s w s w s w s w s w s w

Here again Sidney's practice contravenes the prescription of (2b), and lacks Latin precedent, but is true to English phonology: since no other syllable follows a final stressed one within its word, the stress means its syllable must constitute a moraic trochee on its own, and therefore must be heavy.

Most strikingly, CV.C syllables are normally scanned as heavy, in around eighty out of 108 instances:¹¹

- (35) (a) Whose faire bodily gifts are fram'd most lovely to each ey. (55)
 s w s w s w s w s w s w
- (b) And when I meete these trees, in the earth's faire lyvery clothed, (113)
 s w s w s w s w s w s w
- (c) Cyprus promiseth helpe, but a helpe where comes no recomforte. (119)
 s w s w s w s w s w s w
- (36) (a) But perforce disgest, all bitter juices of horror (105)
 s w s w s w s w s w s w

¹¹ According to Attridge (1974: 178) stressed CV syllables are usually treated as light, 'when no Latin rule is operative'. But this is consistent with the facts only if 'two consonants' in (2b) is understood to mean 'two letters'. While Attridge holds that this would in fact be the understanding of an Elizabethan, in section 4.13 I suggest that Sidney's practice belies this assumption.

- (b) Or when an Echo begins unmov'd to sing them a love song. (48)
 s w s w s w s w s w s w
- (c) But ô happy be you, which safe from fyr reflection (11)
 s w s w s w s w s w s w
- (d) Let not a puppet abuse thy sprite, Kings' Crownes do not helpe them (84)
 s w s w s w s w s w s w s w
- (e) In these woods to resounde the renowmed name of a goddesse. (14)
 s w s w s w s w s w s w
- (f) Is chaunced to my life, that from such muddy abundance (96)
 s w s w s w s w s w s w
- (g) In meane caves oft treasure abides, to an hostry a king comes. (153)
 s w s w s w s w s w s w
- (37) (a) First shall vertue be vice, and bewty be counted a blemishe, (67)
 s w s w s w s w s w s w
- (b) With bolde clamor unheard, unmarckt, what I seeke what I suffer: (112)
 s w s w s w s w s w s w s w
- (c) Olive paintes me the peace that I must aspire to by conquest: (117)
 s w s w s w s w s w s w
- (d) Then kneling to the ground, oft thus do I speake to that Image: (146)
 s w s w s w s w s w s w
- (e) Joyning your sweete voice to the rurall muse of a deserte, (2)
 s w s w s w s w s w s w
- (f) What meane is there, alas, we can hope our losse to recover? (27)
 s w s w s w s w s w s w

The treatment of the trisyllables of (35) is consistent with Latin precedent: words of three light syllables, otherwise unusable in dactylic hexameter, conventionally have their stressed syllables scanned as heavy there (Attridge, 1974). But the lines of (36) and (37) contravene both rule (2b) and Latin practice. In Latin, the stressed light initial syllables of disyllabic words like *bene*, or *cano* in (4), are always scanned as light. Sidney's divergence from that practice forms the basis of his critics' claim that he confused stress and weight. But we have seen in section 3.5 that because of resyllabification, in the postlexical phonology of English, such syllables are indeed heavy. Thus Sidney's practice again represents an innovation which is in fact true to the language.

4.4 CV.C syllables scanned as light

There is a small but systematic class of exceptions to the generalization that CV.C syllables are scanned as heavy, which has led critics to see Sidney's sin of confusion as compounded by one of inconsistency. In around eighteen instances, they are scanned as light as shown in (38)–(41):

- (38) (a) Neither he beares reverence to a Prince nor pittie to begger, (5)
 s w s w s w s w s w s w
- (b) Of carking agonies (to estates which still be adherent) (97)
 s w s w s w s w s w s w
- (c) Nurse inwarde maladyes, which have not scope to be breath'd out, (104)
 s w s w s w s w s w s w

- (d) Not limited to a whispringe note, the Lament of a Courtier, (110)
 s w s w s w s w s w s w
- (e) And for a sure sacrifice I do dayly oblation offer (170)
 s w s w s w s w s w s w
- (f) With monefull melodies, for enough our greefes be revealed, (173)
 s w s w s w s w s w s w
- (g) O glittering miseries of man, if this be the fortune (89)
 s w s w s w s w s w s w
- (39) (a) Here you fully do finde this strange operation of love, (3)
 s w s w s w s w s w s w
- (b) For that I finde in them parte of my estate represented. (115)
 s w s w s w s w s w s w
- (40) (a) Come from marble bowers, many times the gay harbor of anguish. (92)
 s w s w s w s w s w s w
- (b) Oh no, no, hardye shepeheard, worth can never enter a title, (82)
 s w s w s w s w s w s w
- (c) Which shootes strongly without any noyse and deadly without smarte. (122)
 s w s w s w s w s w s w
- (d) Whence may I show to my minde any light of a possible escape? (161)
 s w s w s w s w s w s w
- (e) Give therefore to the Muse great praise in whose very likenes (62)
 s w s w s w s w s w s w
- (f) Thus plag'de how can I frame to my soare any hope of amendement? (160)
 s w s w s w s w s w s w
- (41) (a) Into the faire looker on, pastime, not passion, enters. (41)
 s w s w s w s w s w s w
- (b) Jaylor I am to my selfe, prison and prisoner to myne owne selfe. (163)
 s w s w s w s w s w s w

But we have seen that this alternative is equally true to the phonology of English: these CV.C syllables are indeed light in the lexical phonology. To scan them as light is just to assume the phonological representation at that level to be the one relevant to scansion, rather than that of the postlexical phonology, a possibility we saw in section 2.4 to be invoked in other contexts in the English poetic tradition, and indeed also in Latin.

4.5 Confinement of CV.C syllables scanned as light to W1

Crucially, however, Sidney's use of this possibility is highly constrained. CV.C syllables scanned as light are arguably placed only in W1, never in W2. The apparent placement of such syllables in W2 in the lines of (42) has obscured this distinction:¹²

- (42) (a) First the rivers shall ceasse to repay their fludds to the Ocean: (65)
 s w s w s w s w s w s w

¹² An additional apparent CV.C syllable in W2 cited by Stone (1901) is the first syllable of *solemnize* below, but according to the *OED* it was also used with stress on its second syllable in Sidney's day:

- Ere that I leave with song of praise her praise to solemnize, (68)
 s w s w s w s w s w s w

- (b) Of Pheobus' violence in shade of stately Ciprus tree, (12)
 s w s w s w s w s w s w
- (c) Hardy shepherde, such as thy meritts, such may be her insight (155)
 s w s w s w s w s w s w
- (d) Fire no liquor can coole: Neptune's seat would be dryd up there. (32)
 s w s w s w s w s w s w s w
- (e) Since no refuge doth serve from woundes we do carry about us, (51)
 s w s w s w s w s w s w s w
- (f) Unto a silly caban, though weake, yet stronger against woes. (93)
 s w s w s w s w s w s w

But these lines may be better scanned on the assumption that the words in question are actually treated as having stress on their final syllables. All are words of French origin which originally did have stress on their final syllables. In Sidney's day they certainly did not ordinarily have final stress in English: not only do they appear only with initial stress in the iambic pentameter of Sidney's contemporaries Shakespeare and Spenser; at least some of them appear in iambic poems of *Old Arcadia* itself with initial stress:

- (43) O toong in which, all honyed **likoures** bee, (OA 46, 3)
 w s w s w s w s w s

But already in Chaucer's time these words appear with initial stress, as shown by the iambic lines in (44), and yet appear also to have sometimes been used in verse in configurations which suggest French final stress as in (45) (Halle & Keyser, 1971):

- (44) (a) He made that the **ryver** was so smal (The Summoner's Tale 2083)
 w s w s w s w s w s
- (b) The saylynge fyr; the **cipresse**, deth to playne; (The Parliament of Fowls 179)
 w s w s w s w s w s
- (c) To speke of **phisik** and of surgerye; (General Prologue 413)
 w s w s w s w s w s
- (45) (a) That on a day cam ridynge fro **ryver** (The Wife of Bath's Tale 884)
 w s w s w s w s w s
- (b) His spere was of fyn **ciprees** (The Tale of Sir Thopas 882*/2071)
 w s w s w s w s
- (c) Heere men may seen how synne hath his **merite**. (The Physician's Tale 277)
 w s w s w s w s w s
- (d) And bathed every veyne in swich **licour** (General Prologue 3)
 w s w s w s w s w s
- (e) Ne yif us neither mercy ne **refuge** (The Knight's Tale 1720)
 w s w s w s w s w s
- (f) With us ther was a Doctour of **Phisik**; (General Prologue 411)
 w s w s w s w s w s

Although the linguistic analysis of these doublets is controversial (Minkova, 1997), the cultural resonance of French stress in these words could plausibly have been exploited by Sidney in the specific dramatic context of *OA*. As archaisms they could have contributed to evocation of the remoteness of the pastoral setting. More

important, given the fact that in Sidney's day French still played a prominent role in the English court (Andrew Devine, p.c.) of which Sidney was, of course, a part, the French forms could have provided another clue to the disguised princes' true social positions.

But most compellingly, only the assumption of French stress patterns for these words can explain the total absence of native English words with CV.C syllables in W2; lines like (46) do not occur:

(46) *First the shadows shall ceasse to repay their debts to the sunlight (construct)
 s w s w s w s w s w s w

4.6 Explanation of the distribution of CV.C syllables

But why should CV.C syllables be thus prohibited in W2? This again represents a significant divergence from Latin, where stressed CV syllables occur freely in W2, as in the initial syllable of *cano* in (4). In fact, this distribution can be seen as a meaningful solution to the problem for quantitative meter posed by the ambiguous weight of CV.C syllables in English. In order to see this, we must return to the phonological assumptions under which all the different possible alignments of such syllables would actually satisfy the metrical constraints of (9).

First, as suggested in section 4.4, treatment of CV.C syllables as heavy, the usual case illustrated in (35)–(37), is based on the postlexical syllabification. In line (36d) repeated here as (47), for example, in the second foot, the ambisyllabic medial /p/ of *puppet* allows the initial syllable to meet condition (9b) that S contain a heavy syllable, as well as condition (9a) that it be able to be parsed as a moraic trochee. Moreover, on this syllabification *-pet* does not play the essential role of supplying the second mora of its word's moraic trochee and so is free to be parsed together with the initial light syllable *a-* of the next word:

(47)

ϕ	ϕ									
/										
σ	σ	σ	σ							
^	/		^							
μμ	μ	μ	μμ							

Let not a puppet abuse thy sprite, Kings' Crownes do not helpe them
 s w s w s w s w s w s w s s

The more unusual scansion of CV.C syllables as light as in (38)–(41) is based on the lexical syllabification. When such syllables are in W1, as in (41b) repeated here as (48), scansion is as straightforward as for the first two syllables of *profugus* we saw scanned in (10):

(48)

	ϕ									
	^									
	σ	σ								
	μ	μ								

Jaylor I am to my selfe, prison and prisoner to myne owne selfe.
 s w s w s w s w s w s w s w

Placement of CV.C syllables in W2 as in (49), in contrast, is not compatible with either phonological structure. Although such syllables can be treated as light on the lexical syllabification, there is still the problem we saw for Latin *cano* in (11), that the light stressed syllable's role in its word's foot structure is incompatible with the requirement that each position be parsed as a moraic trochee; as shown in (49a), that syllable cannot be parsed as the weak second element of a moraic trochee in the meter without violating the prominence relations of its word.¹³ Such a line could therefore only be scanned on a phonological representation without foot structure, as in (49b), parallel to (12):

- (49)
- | | | | | |
|--|---|---|-----|--|
| | | φ | | |
| | | ^ | | |
| | σ | σ | σ | |
| | | | ^ | |
| | μ | μ | μ μ | |
- (a) First the shadows shall ceasse to repay their debts to the sunlight.
- | | | | | | | | | | | | |
|---|----|---|---|---|---|---|---|---|---|---|---|
| s | *w | s | w | s | w | s | w | s | w | s | w |
|---|----|---|---|---|---|---|---|---|---|---|---|
-
- | | | | | | | |
|--|--|---|---|-----|--|--|
| | | σ | σ | σ | | |
| | | | | ^ | | |
| | | μ | μ | μ μ | | |
- (b) First the shadows shall ceasse to repay their debts to the sunlight.
- | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| s | w | s | w | s | w | s | w | s | w | s | w |
|---|---|---|---|---|---|---|---|---|---|---|---|

We saw in section 2.4 that basing scansion on representations without foot structure must be theoretically possible, since it is what is required for Latin, where such lines are routine. The question thus becomes why this possibility is never exploited by Sidney.

It is possible that there is an entirely formal explanation. Nothing about the completely regular stress of Latin situates it crucially at a phonological level comparable to level 1 in English, as do the complicated interactions of stress with morphology in English briefly noted in section 3.5 (Kiparsky, 1982). Although we know that poetic systems may base scansion on phonological representations which do not reflect the postlexical phonology, and even on ones which do not reflect some later levels in the lexical phonology, it may be that there simply are no poetic systems that are not fully consistent with the level 1 lexical phonology.¹⁴

¹³ To treat the second syllable of *shadows* as heavy is clearly consistent with Sidney's practice, especially given the following consonant (see e.g. *sorrows* in (54e)). But in the structure of the word itself it is possible that the second syllable is in fact light, as discussed in sections 3.6–7 above. We know, as discussed in footnote 4, that some languages, including Old English, do admit moraic trochees with heavy second syllables word-initially; but the question of whether modern English is best analyzed as admitting such structures is an open question.

¹⁴ In this regard there is in fact an interesting comparison with Finnish. Finnish is like English in that considerations of the interaction of stress with morphology indicate that it must be represented in the lexical phonology. On the idea put forth here, we might equally well expect the option of stressed CV syllables in W2 to be absent. Since Finnish does not have resyllabification as English does, such syllables are also excluded in S. In fact, in one example of a quantitative poem by Koskenniemi cited by Leino (1985: 29), stressed CV syllables occur only in W1 as such a hypothesis would predict:

But at the very least, we can see that there are functional motivations for Sidney's choice if we consider more broadly what he gains by ever requiring scansion to be based on a more abstract representation than the postlexical phonology. First, it permits accommodation of a greater range of vocabulary. English has quite a few words comparable to Latin *profugus*, trisyllables with final heavy syllables but light medial ones, as in (38), as compared with trisyllables with final light syllables as in (35). For the final heavy syllables of such words to be in a position appropriate to a heavy syllable, and the medial one in one appropriate for a light one, the initial syllable must also be treated as light. In Latin, the stressed initial syllable of such words is unambiguously light, so the former scansion is routine.¹⁵ But in the English words in (38), the initial syllable is heavy in the postlexical phonology. Sidney's treatment of these syllables as light on the basis of their lightness in the lexical phonology accommodates them in a way consistent not only with Latin precedent but also with English phonology. Words comparable to *cano* which could only be scanned with initial light syllables in W2, on the other hand, are quite rare. As we have seen, in most words in which a stressed light syllable is followed by a (potentially) heavy but stressless syllable, ambisyllabicity allows the stressed syllable to be scanned in S. There are in fact a few words in English in which ambisyllabicity is blocked because there is stress on the final heavy syllable: *Hittite*, *satire*, *essay*. But these are rare: there was hardly the same pressure to use *Hittite* in sixteenth-century lyric poetry that there was to use *reverence*.¹⁶

Drawing on the lexical syllabification also serves to promote a harmonious distribution of stress. Although Sidney cannot be claimed to be substituting stress for weight in the metrical constraint (9b), he does show a fairly strong preference for stress to fall in strong metrical positions: among unambiguously heavy stressed syllables, for example, about 250 are in S as opposed to around 35 in W (compare *halting* and *decayd* to *outward* and *pleasures* in (33c), for example; see also Attridge (1974: 179–80)). In the cases of secondary stress in (39), the nonlexical words in (40), and the phrases in (41), the stress of the syllable in W1 is subordinated to that of the more strongly stressed heavy syllable in the following S, so that the treatment of the CV.C syllable as light can be seen to serve to preserve this rhythmic match of stress in S. Moreover, because of the inherent rhythmic structure of each position, the

Ei edessās sitā oo, mitā etsit, ei takanaskaan:
 s w s w s w s w s w s w

The problem thus bears further study from a comparative perspective.

¹⁵ In Latin where the initial syllable is unambiguously heavy, the final syllable is sometimes shortened, e.g. *dicito* < *dicitō* (Mester, 1994).

¹⁶ Kiparsky (1999) suggests that the Romance borrowings of (42) might have had primary initial stress, but retained a latent secondary stress on the second syllable; Minkova (1997) makes a similar suggestion. In this case they would in fact have the same structure as *Hittite*, *satire* or *essay*, and the placement of their initial stressed light syllable in W2 as in (42) would in fact be the only possibility. This practice would be consistent with the claim that Sidney developed a system that not only respects but communicates the system of syllable weight in English, but would require the assumption that level 1 prosodic structure could be disregarded in scansion.

stress in W1 remains congruent with the rhythmic expectations established by the meter in a way that stress in W2 would not.

But the strongest explanation for Sidney's practice emerges if we consider that one of the aesthetic pleasures meter gives is a heightened awareness of the phonological structures it regulates. Given the phonology of English, we may ask, how well do choices among the various representations in (47)–(49) available to a poet for the scansion of CV.C syllables serve this end? If all were freely used, it is doubtful that any metrical structure would be perceptible at all. Among the more restrictive options, the possibility of consistently basing scansion on the postlexical phonological representation and treating CV.C syllables always as heavy as in (35)–(37) is perfectly imaginable, yet no poet in English seems to have written quantitative meter of this type.¹⁷ This is hardly surprising, as such a metrical practice would be wholly uninteresting, succeeding in capturing English speakers' intuitions that CV.C syllables are heavy, but failing entirely to capture the intuitions they also have about the distinction in syllable weight which figures in English stress assignment in the lexical phonology. Another option would be to base scansion consistently on the representation of the lexical phonology without ambisyllabicity, and scan CV.C syllables as light even when stressed. This option could conceivably come in two forms, allowing only scansions of the type as in (38)–(41), or allowing those of the type in (46) as well.¹⁸ The latter is of course exactly how it is in Latin, and is in fact tried in the quantitative experiments of a different poet, Robert Bridges, following the theories of William Johnson Stone, discussed further in section 5.2. The former may occur in other languages, for example Finnish, as noted in footnote 14. But in either form this option is also unsatisfactory for English, for the same kind of reason that scanning CV.C syllables consistently as heavy is: while it succeeds in capturing English speakers' intuitions about the distinction in syllable weight relevant to stress assignment, it fails to capture the intuition that CV.C syllables generally become heavy through resyllabification.

Sidney's practice, in contrast to all of these, acknowledges the ambiguity of the weight of these syllables in English, and structures it. In the unmarked case, his meter draws on the postlexical phonological structure. In marked contexts, it draws on the deeper representation of the lexical phonology alone, but without multiplying

¹⁷ The 'accentual hexameters' popular in the nineteenth century, such as those of Longfellow and Kingsley, might, from their traditional description as having had stress substituted for quantity, be expected to have this structure. But they do not: first, stressed syllables of all types occur in W1, and lexical monosyllables occur in both W1 and W2. Thus, they seem rather to have the underlying structure of a right-branching dactyl

$$\begin{array}{c} (S \ W) \\ \wedge \\ s \ w \end{array}$$

described by Prince (1989), and a constraint against the strong syllables of words in any terminal W. The analysis of such meters is an outstanding problem.

¹⁸ A logically possible third form, allowing them in W2 but not W1, would be obviously unmotivated; allowing them in W1 but not W2, in contrast, has simplicity on its side.

complexities any more than it has to to reveal the other possible analysis of the weight of CV.C syllables. It thus represents the simplest metrical system that nonetheless communicates the true complexity of syllable weight in English. We return in section 5 to the consequences of this choice for quantitative meter in English, but first complete the picture with Sidney's treatment of other syllable types.

4.7 *Unstressed syllables of polysyllabic words*

If a syllable is not stressed, its weight is much harder to pin down, as discussed in section 3.6–7. Faced with this phonological indeterminacy, Sidney conforms to a much greater extent to the letter of the Latin rules. His metrical innovation consists primarily in acknowledging the metrical variation which follows from that indeterminacy.

Nonfinally within lexical words, CVC syllables are always scanned as heavy, as in (50); though there are sufficiently few of them to suggest that Sidney may have been avoiding them out of what we have seen would be justifiable doubt about their weight:

(50) (a) That to thy advauncement their wisdomes have thee abased (34)
 s w s w s w s w s w s w

(b) Will at length perceave these flames by her beames to be kindled (167)
 s w s w s w s w s w s w

Word-finally, CVC syllables are always heavy if the next word begins with a consonant as in (51), and most often light if followed by a vowel- (or *h*-) initial word as in (52)–(53), in keeping with (2b):

(51) (a) Shall such morning deaws be an ease to the heate of a love's fire? (88)
 s w s w s w s w s w s w

(b) But to the Cedar, Queene of woods, when I lifte my beteard eyes, (141)
 s w s w s w s w s w s w

(c) If by the parties ment our meanings rightly be marked, (174)
 s w s w s w s w s w s w

(d) Sacred Muse, who in one contaynes what nine do in all them. (10)
 s w s w s w s w s w s w

(e) And shall sensive things be so sencelesse as to resist sence? (138)
 s w s w s w s w s w s w

(f) Whom both nature seemes to debarr from meanes to be helped, (158)
 s w s w s w s w s w s w

(g) Say then what vantage do we get, by the trade of a Pastor? (49)
 s w s w s w s w s w s w

(h) Thus be her giftes most sweet, thus more danger to be neere her, (126)
 s w s w s w s w s w s w

(i) With monefull melodies, for enough our greefes be revealed, (173)
 s w s w s w s w s w s w

(52) (a) What can justice availe, to a man that tells not his owne case? (22)
 s w s w s w s w s w s w

- (b) Nature against we do seeme to rebell, seeme fooles in a vaine sute. (24)
 s w s w s w s w s w s w
- (c) Vertue, richesse, beawties of mine shall great be reputed. (81)
 s w s w s w s w s w s w
- (d) First shall vertue be vice, and bewty be counted a blemishe, (67)
 s w s w s w s w s w s w
- (e) Then do I thinke in deed, that better it is to be private (102)
 s w s w s w s w s w s w
- (53) (a) Or pleasant mirtell, may teach th'unfortunate Echo (13)
 s w s w s w s w s w s w
- (b) Cyprus promiseth helpe, but a helpe where comes no recomforte. (119)
 s w s w s w s w s w s w
- (c) And hope therby to ease their inward horrible anguish, (45)
 s w s w s w s w s w s w

But Sidney also sometimes allows a final CVC syllable to be heavy even if followed by a vowel:

- (54) (a) Pleasd to receave that name by rebou~~nd~~ing answere of Echo, (44)
 s w s w s w s w s w s w
- (b) Since outward pleasures be but halting helpes to decayd soules) (52)
 s w s w s w s w s w s w
- (c) And shall sensive things be so sencelesse as to resist sence? (138)
 s w s w s w s w s w s w
- (d) That that deare Dyamond, where wisdome holdeth a sure seate, (165)
 s w s w s w s w s w s w
- (e) And sorrows do require some respitt unto the sences. (175)
 s w s w s w s w s w s w

To the extent that this represents an innovation with respect to the Latin rules (see (2bii)), it is in the direction of recognizing the variability of CVC weight in English.

Similarly, unstressed final open syllables of lexical words are treated inconsistently, as in (55a,b). That this is deliberate rather than accidental is suggested by a particularly striking example in *OA* 31 ((55c, d), discussed further in section 4.12 below), where the final syllable of *Echo* is scanned as light before a consonant in one line but heavy before one two lines later:

- (55) (a) Vertue you have, of vertue you have left proufes to the whole world, (56)
 s w s w s w s w s w s w
- (b) Vertue, richesse, beawties of mine shall great be reputed. (81)
 s w s w s w s w s w s w
- (c) Oh! I do know what guest I have mett; it is Echo. 'T is Echo. (31, 3)
 s w s w s w s w s w s w
- (d) Echo, what do I gett yelding my sprite to my grieves? Grieves. (31, 5)
 s w s w s w s w s w s w

But the length of such vowels is in fact ambiguous in English, as discussed in section 3.7; Sidney's inconsistency can be seen as a phonologically reasonable exploration of that fact.

4.8 *Nonlexical monosyllables*

Sidney's treatment of nonlexical monosyllables is analogous. Nonlexical CVC monosyllables are most often scanned as heavy before C (56), and light before V (or h) (57), in keeping with (2b):^{19, 20}

- (56) (a) But yet alas! O but yet alas! our happs be but hard happs, (37)
 s w s w s w s w s w s w
 (b) Into the faire looker on, pastime, not passion, enters. (41)
 s w s w s w s w s w s w
 (c) When trees daunce to the pype, and swift streames stay by the musicke, (47)
 s w s w s w s w s w s w s w
 (d) But yet well I doo finde each man most wise in his owne case. (70)
 s w s w s w s w s w s w s w
 (57) (a) Well may a Pastor plaine, but alas his plaints be not esteem'de. (39)
 s w s w s w s w s w s w s w
 (b) But yet alas! O but yet alas! our happs be but hard happs, (37)
 s w s w s w s w s w s w s w
 (c) What can justice availe, to a man that tells not his owne case? (22)
 s w s w s w s w s w s w s w
 (d) Or when an Echo begins unmov'd to sing them a love song. (48)
 s w s w s w s w s w s w s w
 (e) Silly shepheard's poore pype, when his harsh sound testifis our woes, (40)
 s w s w s w s w s w s w s w

But at the same time, Sidney occasionally scans such words as heavy before V (58), or light before C (59):²¹

- (58) (a) But ô happy be you, which safe from fyr reflection (11)
 s w s w s w s w s w s w
 (b) Firr trees great and greene, fixt on a hye hill but a barrein, (123)
 s w s w s w s w s w s w s w

¹⁹ CVVC and CVCC nonlexical monosyllables are, as expected, always heavy:

- (i) What can justice availe, to a man that tells not his owne case? (22)
 s w s w s w s w s w s w
 (ii) What be the pangs they bear, and whence those pangs be derivd, (43)
 s w s w s w s w s w s w s w

²⁰ The stressed prefix *un-* is (showily) treated in the same way:

- With bolde clamor unheard, unmarckt, what I seeke what I suffer: (112)
 s w s w s w s w s w s w s w

From a phonological point of view, this is something of a puzzle, since the facts that it is obligatorily stressed and a prefix should together mean that it is heavy. But in fact in stress-based meters too, this prefix often behaves exceptionally, as if it were a nonlexical word on its own, and not part of a lexical one (Hanson, 1999; Hayes, 1989).

²¹ It is possible that Sidney also allows a CVVC syllable to count as light; but the lone example could also be explained by elision (3b), which may play a minor role in his verse; see also lines 72 and 171 (and further discussion of this line in section 4.11):

- Then by my high Cedar, rich Ruby, and only shining Sunne, (80)
 s w s w s w s w s w s w s w

(59) (a) But (like a point in midst of a circle) is still of a neernesse, (6)

(b) Will at length perceave these flames by her beames to be kindled, (67)

That this practice is not a lapse but a decision – however cautiously implemented – about English syllable weight is made explicit in a marginal note in one manuscript (Ringler, 1962: 391):

(60) Particles used nowe long, nowe short (as ‘būt’, ‘ōr’, ‘nōr’, ‘ōn’, ‘tō’).

And it is consistent with the facts of English phonology: as discussed in section 3.7, these words are able to be stressed, and therefore able to be analyzed as heavy; but they are not necessarily stressed, and therefore not necessarily analyzed as heavy.²²

With respect to open nonlexical monosyllables too, Sidney seems to wrestle with the difficulty of ascertaining the length of vowels and come up with a practice which is not unreasonable, once their phonological complexities and historical differences are taken into account. *A* and *the* are consistently scanned as light, as in (61):

(61) (a) What skill servethe a soare of a wrong infirmity judged? (21)

(b) Give right sound to the eaes, and enter aright to the judgement; (18)

O, *though* are consistently scanned as heavy, as in (62):

(62) You, though feares do abash, in you still possible hopes be: (23)

These practices are consistent with the phonology described in section 3.7 on any account. *Be*, *do*, *me*, *she*, *thee*, *who*, *so*, *no* are consistently light as in (63):

(63) (a) How much more we do love, so the lesse our loves be beleevd. (20)

(b) And to the woods or brookes, who do make such dreery recitall (42)

(c) Olive paintes me the peace that I must aspire to by conquest: (117)

(d) Ashe makes speares which shields do resist, her force no repulse takes: (136)

This is consistent with one of the two conflicting accounts of the phonology of these words, including that from Sidney’s own time. Somewhat more peculiarly, *to*, normally light as in (63b), is heavy in (64a) in a context in which its reducibility suggests that it might be better analyzed as short; *too* is light in (64b) when its

²² Sidney’s practice may even reflect a subtle difference between those in (27c) like *yet*, whose vowel never reduces, and which therefore must be stressed; and those in (27d) like *but*, whose vowel may reduce and therefore need not be stressed: the former only occur in W1, followed by V, as in (57), so in configurations where the two syllables in W together could form a moraic trochee, even taking into account the postlexical stress on the first.

irreducibility suggests that its vowel is underlyingly long; and the only occurrences of *you* are as heavy as in (64c), when it might be more plausible for it to pattern with words like *do* as light as suggested in (28c):

- (64) (a) Or when an Echo begins unmov'd to sing them a love song. (48)
 s w s w s w s w s w s w
 (b) Unto the heav'ns? Our wings be too short; th'earth thinks us a burden; (29)
 s w s w s w s w s w s w s w
 (c) Here you fully do finde this strange operation of love, (3)
 s w s w s w s w s w s w

But even these are consistent with some account of the language of Sidney's time, as discussed briefly in section 3.7.

Sidney's systematic treatment of nonlexical monosyllables which is most dubious to modern ears is that of those containing the diphthong of *by*, *thy*, *my*, *I*, which are always scanned as short as in (65a,b), with the single exception of (65c), where it is probably not the vowel but the following double consonant that is allowing *thy* to be scanned as heavy:

- (65) (a) Worthy shepeheard, by my song to my selfe all favor is happned, (8)
 s w s w s w s w s w s w
 (b) Unto the Gods with a thankfull heart all thankes I do render, (35)
 s w s w s w s w s w s w
 (c) Let not a puppet abuse thy sprite, Kings' Crownes do not helpe them (84)
 s w s w s w s w s w s w

The same diphthong also appears in the closed nonlexical monosyllables scanned as light in (66):²³

- (66) (a) But (like a point in midst of a circle) is still of a neernesse, (6)
 s w s w s w s w s w s w
 (b) Jaylor I am to my selfe, prison and prisoner to myne owne selfe. (163)
 s w s w s w s w s w s w

The treatment of this diphthong contrasts sharply with those of words like *how*, *may*, which are consistently scanned as heavy, except when the presence of a following vowel allows them to count as light according to (3a) and as discussed further in section 4.9 below:

- (67) (a) How much more we do love, so the lesse our loves be beleeved. (20)
 s w s w s w s w s w s w
 (b) Or pleasant mirtell, may teach th'unfortunate Echo (13)
 s w s w s w s w s w s w
 (c) What be the pangs they beare, and whence those pangs be derived, (43)
 s w s w s w s w s w s w

²³ A similar example could be the following, but since Sidney shows no other doubt about /o/, nor about CVCC monosyllables, it is better analyzed as an instance of elision as in (3b):

Of my owne harte, where thoughts be the temple, sighte is an altar. (171)
 s w s w s w s w s w s w

It is not at all clear that the treatment of the diphthong as short in the words in (65)–(66) does not simply have a historical explanation. Although the diphthong itself was clearly long in general, as shown by its patterning within the vowel system as a whole, as noted in section 3.8 above, there was occasional variation in the vowels in individual words, and the words in (65)–(66) were among those recorded as sometimes having short variant pronunciations (Dobson, 1968). But at worst, from the point of view of cultural history, it would hardly be surprising to find that, as Attridge suggests, try as he might Sidney never fully shook off the confusion about vowel length wrought by his Elizabethan schooling to achieve a wholly correct understanding of English vowel lengths. If he did not, it would be in just these cases where the grammar as a whole affords little independent evidence of vowels' lengths that we would expect such uncertainty to manifest itself.

4.9 Vowels before vowels

With the possible exceptions just stated, Sidney's practices described so far are by and large reasonable interpretations of English phonology. A systematic class of exceptions to the foregoing generalizations, however, arises from the Latin rule in (3a), which requires a vowel before another vowel to be treated as short. In (68), open lexical monosyllables are scanned as light, because they precede words beginning with a vowel:²⁴

- (68) (a) Farre more happy be you, whose greatnes gets a free accesse, (54)
 s w s w s w s w s w s w
- (b) Come from marble bowers, many times the gay harbor of anguish. (92)
 s w s w s w s w s w s w s w
- (c) Ewe doth make me be thinke what kind of bow the boy holdeth (121)
 s w s w s w s w s w s w s w
- (d) Firr trees great and greene, fixt on a hye hill but a barrein, (123)
 s w s w s w s w s w s w s w
- (e) Pine is hye, hope is as hie, sharpe leav'd sharpe yet be my hope's budds. (130)
 s w s w s w s w s w s w s w s w
- (f) And so behinde foule clowdes full oft faire starres do ly hidden'. (154)
 s w s w s w s w s w s w s w s w

Similarly, in (69) stressed syllables of polysyllabic words are scanned as light, even in W2, because they precede a vowel:

- (69) (a) (Opprest with ruinouse conceites) by the helpe of an outcrye: (109)
 s w s w s w s w s w s w
- (b) That that deare Dyamond, where wisdome holdeth a sure seate, (165)
 s w s w s w s w s w s w
- (c) From the cruell headache, nor shooes of golde doo the gowt heale, (85)
 s w s w s w s w s w s w

²⁴ Ringler (1962: 394) cites (68), where "'high" is first considered short and then considered long', as a deviation from Sidney's own rules, but we see here that it is consistent with his tacit rules, and with Latin practice.

- (d) ‘Onely Juell, O only Juell, which only deservest (147)
 s w s w s w s w s w s w

And the diphthongs of the open nonlexical monosyllables normally scanned as heavy as in (67) are light before vowels:

- (70) (a) Well may a Pastor plaine, but alas his plaints be not esteem’de. (39)
 s w s w s w s w s w s w

- (b) Lawrell shews what I seeke, by the Mirre is show’d how I seeke it, (116)
 s w s w s w s w s w s w

Although completely regular, this practice does not find the phonological sanction that the others we have seen so far do. While we have seen that vowel length is neutralized before vowels in English, the form it takes is lengthening, not shortening. Moreover, in the case of the lexical monosyllables of (68), treating these syllables as light contravenes the exceptionless generalization that such syllables must be bimoraic. Yet the practice is widespread, found even in Hopkins’ pristine treatment of English syllable quantity (Kiparsky, 1989). Its tenacity thus clearly merits further study.

4.10 Summary of Sidney’s general practice

Contrary to his critics’ judgments, then, Sidney’s practice is remarkably systematic, innovative, and phonologically justifiable. All stressed syllables in lexical words are normally treated as heavy, true to the phonology of English at all levels in all cases except for stressed CV.C syllables, for which it is true at the postlexical level only. These CV.C syllables are sometimes treated instead as light in W1, true to the lexical phonology, and also to the phonological structure of the meter. Systematic exceptions arise only from the metrical convention that vowels before vowels are short.

Unstressed syllables are treated in a somewhat less assured and more inconsistent manner, but seldom in a way obviously incompatible with English phonology. Word-finally and in nonlexical monosyllables, CVC syllables may be either heavy or light, as may parallel CVV syllables; in many cases of the latter type a choice between the two is made in a way consistent with phonological evidence for underlying length, though in a few others the choice seems peculiar. A handful of nonlexical words with long vowels or diphthongs are scanned as light; this alone would be unjustified for quantitative meter in English, but it is not even clear that the vowels were not crucially different in Sidney’s time.

4.11 Exceptions in OA 13

In the entire poem there are very few genuine exceptions to these generalizations. There is one closed lexical monosyllable exceptionally scanned as light (before a vowel):

- (71) Fire no liquor can coole: Neptune's seat would be dryd up there. (32)
 s w s w s w s w s w s w

It is worth noting that in the manuscript of *OA* which represents the quantitative experiments most fully (Ringler's (1962) 'St'), *can coole* in this line is changed to *cooles*, which allows it to scan in accordance with Sidney's evident usual practice. The handwriting in which the change is written is not that of the manuscript, and neither is the handwriting of Sidney himself (Ringler, 1962); but the change at least confirms the line's anomalousness.

The first syllable of *shepeheard* is consistently treated as light in W2 (see also 155, 172):

- (72) (a) Worthy shepeheard, by my song to my selfe all favor is happned, (8)
 s w s w s w s w s w s w
 (b) Happy shepeheard, with thanks to the Gods, still thinke to be thankfull, (33)
 s w s w s w s w s w s w
 (c) Oh no, no, hardye shepeheard, worth can never enter a title, (82)
 s w s w s w s w s w s w

Perhaps the conventional expressions in which it occurs, otherwise unusable in quantitative dactylic hexameters, may have been granted some special poetic license.

In (73), unstressed light initial syllables are treated as heavy, perhaps rare genuine cases of scansion based on spelling (see section 4.13):

- (73) (a) Save that dayly we may discerne what fire we do burne in. (53)
 s w s w s w s w s w s w
 (b) O descende for a while, from this greate height to behold me, (149)
 s w s w s w s w s w s w

In (74) a stressed syllable which has a long vowel (even in Latin) is treated as light; but we have seen this is a vowel whose length word-finally Sidney was exploring the ambiguity of, and the fact that stressed initial syllables of trisyllables in the Elizabethan pronunciation of Latin always had short vowels (Attridge, 1974) makes this an unsurprising exception:

- (74) Sweete Juniper saith this, thoh I burne, yet I burne in a sweete fire. (120)
 s w s w s w s w s w s w

In (75) and (76) the diphthong we have already seen to be problematic makes the secondary stressed syllables heavy; but Sidney treats those in (75) analogously to CVC syllables, capable of being either heavy (75a) or light (75b) before a vowel, and he treats that of (76) as light. Here again, however, Dobson (1968: 844) notes that the words in (75) were sometimes recorded as having short final vowels:

- (75) (a) And for a sure sacrifice I do dayly oblation offer (170)
 s w s w s w s w s w s w
 (b) Silly shepherd's poore pype, when his harsh sound testifis our woes, (40)
 s w s w s w s w s w s w
 (76) Happy be you that may to the saint, your onely Idea, (15)
 s w s w s w s w s w sw

Finally, in (77) the first syllable of *shining* is scanned as light in W2 in a departure from just about every practice thus far seen:

(77) Then by my high Cedar, rich Ruby, and only shining Sunne, (80)
 s w s w s w s w s w s w

This line is cited by Stone (1901: 123) as evidence of Sidney's 'extraordinary perversions of natural rules'. But it should be clear by now that it is in no way typical of his practice; analogous stressed CVV syllables are normally heavy,²⁵ and even an analogous CV.C syllable would not occur in W2.

4.12 Exceptions in other quantitative poems in OA

If OA 13 thus has some imperfections, it is because it represents a stage in a struggle to sort out short vowels from long ones, weight from stress, English from Latin, and nature from convention, a struggle which we have seen is difficult not only for the cultural reasons Attridge documents, but also for the phonological reasons addressed here. The greater interest of the systematicity documented in sections 4.1–4.10 over the exceptions in 4.11 emerges particularly strongly through a comparison of OA 13 with OA 31 and OA 34, which Ringler (1962: 402) dates as much earlier efforts because they are metrically 'exceedingly imperfect'.

The metrical imperfections noted by Ringler are not those outlined here. They consist instead in departures from the letter of the rules Sidney himself cites, including the scansion of *do* in (78a) (or *he* (l.20), *be* (l.32)) as light where it is followed by two 'consonants', the *kn-* of *know*; the scansion of *thy* as light in (78b) where it is followed by the two consonants *sp* in *speche* (see footnote 6); the scansion of the nonlexical monosyllable *it* as heavy in (78c) when it is followed by a vowel; the scansion of *say* as light in (78d) (where it is followed by a vowel); the scansion of the final *-o* of *Echo* as light in (79a) when it is heavy just two lines away in (79b); and the scansion of the 'regularly long [heavy]' first syllable of *woman* as in (80b) as light in (80a):

- (78) (a) Oh! I do know what guest I have mett; it is Echo. 'T is Echo. (31, 3)
 s w s w s w s w s w s w
- (b) Arte? what can be that art which thou dost meane by thy speche? Speche. (31, 29)
 s w s w s w s w s w s w s w
- (c) O poisonous medecin! what worse to me can be then it? It. (31, 7)
 s w s w s w s w s w s w
- (d) Yet say again thy advise for th'ev'ls that I told thee. I told thee. (31, 18)
 s w s w s w s w s w s w

²⁵ For example:

(i) Hardly remains fyer hid, where skill is bent to the hiding. (59)
 s w s w s w s w s w s w

(ii) Popler changeth his hew from a rising sunne to a setting: (132)
 s w s w s w s w s w s w

- (79) (a) Oh! I do know what guest I have mett; it is Echo. 'T is Echo. (31, 3)
 s w s w s w s w s w s w
- (b) Echo, what do I gett yelding my sprite to my grieves? Grieves. (31, 5)
 s w s w s w s w s w s w
- (80) (a) Silly rewarde! yet among women hath she of vertu the most. Most. (31, 36)
 s w s w s w s w s w s w s w
- (b) What great name may I give to so heav'nly a woman? A woe-man. (31, 37)
 s w s w s w s w s w s w

None of these is either exceptional or exceptionable²⁶ on the analysis of Sidney's practice outlined here. The last in particular figures in what is clearly not a negligent departure from the rules but rather a clever display of their subtleties. As an argument for dating the poems, then, Ringler's use of departures from the prescribed rules as evidence for earliness is somewhat inconsistent with the claim here that such departures can signify Sidney's growing mastery of the form.

Nonetheless, just as poets' articulated descriptions of their own practices do not necessarily do justice to their poetic intuitions, so the reasons Ringler gives do not necessarily do justice to his critical intuitions, which are based on the most intimate acquaintance with Sidney's practice possible in his capacity as his editor. Therefore, if we can accept his judgment that *OA* 31 does represent an earlier effort, even while rejecting the validity of some of his evidence, the presence in it of a few counter-examples to the generalizations we have found here to characterize *OA* 13 shows not static inconsistency on Sidney's part, but rather just how much he discovered. Indeed, the argument is less circular than if Ringler's characterization of Sidney's development had been based on the generalizations advanced here.

In *OA* 31, for example, there are occasional lexical monosyllables scanned as light. Alongside the expected scansion of the open lexical monosyllable *go* as heavy in (81a) we find a scansion of it as light in (81b):²⁷

- (81) (a) Dev'lls? if in hell such dev'lls do abide, to the hells I do go. Go. (31, 50)
 s w s w s w s w s w s w s w
- (b) Can then a cause be so light that forceth a man to go die? Aye. (31, 24)
 s w s w s w s w s w s w s w

That Sidney understood the length of such a final vowel as ambiguous at the time of this poem is evident from the scansion of the final *-o* of *Echo* in (79) above; the insight that monosyllables do not share any such ambiguity is thus an achievement of *OA* 13. Similarly, alongside the expected scansion of the closed lexical mono-

²⁶ Except perhaps the scansion of *thy* as light, but because of its vowel (which Ringler does not note, presumably because it is spelled with a single letter), not because of the following two consonants.

²⁷ See also:

- (i) Faire Rocks, goodly rivers, sweet woods, when shall I see peace? Peace. (31, 1)
 s w s w s w s w s w s w
- (ii) Where thou poore nature left'st all thy due glory, to fortune (11, 15)
 s w s w s w s w s w s w s w
- (iii) Thus nōt ending, endes thē dūe praise ōf hēr praise; (sapphic) (12, 21)

syllable *gone* as heavy even before a vowel as in (82), we find the analogous *prove* scanned as light there:²⁸

- (82) Oft prove I: but what salve, when Reason seeks to be gone? One. (31, 11)
 s w s w s w s w s w s w

This too is banished from Sidney's practice by *OA* 13.

Second, the favored status of W1 for any stressed syllables of polysyllables is established by *OA* 31. Apart from two Romance words which can be argued to be spurious cases of the kind discussed in section 4.5,²⁹ the only one to appear in W2 in either poem is in (83), where the initial syllable of *lovers* is treated as light, possibly on analogy with the scansion of *love* as short before a vowel which occurs in some of the other early poems (see (iii) and (iv) in footnote 28):

- (83) What do lovers seeke for, long seeking for to enjoy? Joy. (31, 13)
 s w s w s w s w s w s w

But the earlier poems do have stressed syllables of polysyllabic words in W1. As Attridge (1974) points out, these sometimes have long vowels (though for that of *holy* see section 3.2), which by *OA* 13 (except for *Juniper* in (74)) no longer happens:³⁰

- (84) (a) O poisonous medecin! what worse to me can be then it? It. (31, 7)
 s w s w s w s w s w s w
 (b) Horrible is this blasphemy unto the most holy. O lie. (31, 45)
 s w s w s w s w s w s w
 (85) (a) Nor envie's snaky ey, [ø] finds any harbor here, [ø] (asclepiad) (34, 18)
 s w s w s w s w s w s w
 (b) Nor causelesse duty, nor [ø] comber of arrogance, [ø] (asclepiad) (34, 23)
 s w s w s w s w s w s w
 (c) Nor trifling title of [ø] vanity dazleth us, [ø] (asclepiad) (34, 24)
 s w s w s w s w s w s w

Finally, in *OA* 31 certain unstressed or secondarily stressed but closed syllables are treated as light:

²⁸ See also:

- (i) and that he thence must part [ø] where to live onely I lyved. [ø] (pentameter) (74, 30)
 s w s w s w s w s w s w
 (ii) shall prove that fiercenes [ø] can with a white dove abide? [ø] (pentameter) (74, 34)
 s w s w s w s w s w s w
 (iii) But most wretched I am, [ø] now love awakes my desire. [ø] (pentameter) (11, 20)
 s w s w s w s w s w s w
 (iv) Which is helde in love, love it is, that hath joynde (sapphic) (12, 23)

²⁹ These are:

- (i) Bownded with no limitts [ø], borne with a wing of hope [ø] (asclepiad) (34, 8)
 s w s w s w s w s w s w
 (ii) Her lipps are the riches the warres to maintaine, (phaleuciack) (33, 9)

³⁰ See also:

- Adonis'* end, *Venus'* nett, (anacreontic) (32, 27)

- (86) (a) What do lovers seeke for, long seeking for to enjoy? Joy. (31, 13)
 s w s w s w s w s w s w
- (b) Yet say againe thy advise for th'ev'ls that I told thee. I told thee. (31, 18)
 s w s w s w s w s w s w

This is the opposite of what is found in *OA* 13 in (50); while the correct phonological analysis of the weight of these syllables is somewhat dubious, the change confirms that, as Attridge (1974) suggests, Sidney was consciously trying to avoid confusion of stress and quantity, as shown also in his rejection of lines like (84) and (85); by the time of *OA* 13 not only do lines like (86) not occur, the distinction is even put on display, as in the line discussed in footnote 20.

Thus, the presence in the earlier poems of a few counterexamples to the generalizations found to characterize Sidney's practice in *OA* 13, far from undermining the analysis presented here, ultimately confirms that they represent the most mature conclusions he reached about quantitative meter in English.

4.13 Spelling

We have argued that Sidney's practice is not arbitrary, but principled, and not confused by stress, but rather based on a broadly true if not fully developed apprehension of the relationship between stress and weight in English phonology. What we have not yet addressed is the third common charge of artificiality in Sidney's practice, that it finds its basis in spelling.

There is from the start a methodological problem with this interpretation, which is that Sidney's own spellings for his quantitative poems are in fact unknown. None of the remaining manuscripts of *OA* is in Sidney's hand, and their spelling and punctuation is that of their copyists. Thus Ringler (1962: lxiv, 367) explicitly warns readers that what they should attend to is the words themselves, and not their spellings.

But even more strongly, with the foregoing metrical generalizations in hand, we can see that the assumption that spelling governs scansion not only is unnecessary, but also fares less well as an explanation for Sidney's practice than the phonological analysis offered here. It is evident that care has been taken that spelling should correlate with weight, and this is only to be expected given the cultural context Attridge (1974) documents. But overwhelmingly the evidence is that spelling reflects scansion, rather than determining it. Indeed, it is hard to imagine how it could be otherwise in a period in which spelling was not yet standardized (Paul Kiparsky, p.c.).

In the case of lexical monosyllables, it is true that in *OA* 13 almost all the lexical monosyllables treated as heavy before vowels are spelled with final double consonants, as in (32), but spelling cannot be the reason for the scansion of them as heavy. First there are a few exceptions, such as *man* in (32c) (see also *man* in *OA* 74, 16 and *whit* in *OA* 74, 5). More important, monosyllables spelled with single final consonants occur in other contexts in *OA* 13 (*get* in (31b), *hid* in (32a)), and abound in Sidney's nonquantitative verse; just a glance at the first few nonquantitative

poems of *OA* turns up *Pan, god, skin, wed*, etc. If spelling is the reason for treatment of a monosyllable like *gett* spelled with two *t*'s as heavy, why does the available variant *get* never appear, which it could perfectly well do before a vowel where the Latin rules would license its treatment as light? The answer is that English phonology precludes this scansion, because lexical monosyllables must be heavy; and the spelling in the poems is in turn chosen to reflect this.

In the case of polysyllables too, it is true that most CV.C syllables treated as heavy are spelled with either a double consonant or a double vowel, as in *bitter, treasure* and other words in (36). But there are also exceptions: for instance, the initial syllables of *bodily* and *clamor* and in fact of all of the words of these types in (35) and (37), respectively, are treated as heavy but not spelled with any double letters. On an analysis that takes spelling with double letters as the basis for treating syllables as heavy, the presence of such inconsistencies stands totally unexplained: it may take a poet to unravel the complex interactions of weight, stress, and metrical structure that we have seen to govern Sidney's distribution of such syllables, but a schoolchild can tell that *blemishe* (37a) has one *m* while *emmot* (footnote 6 (i)) has two. Again, metrical systematicity emerges from the hypothesis that phonology determines the scansion and spelling reflects it, but not from assuming things are the other way around.

Finally, in the case of unstressed syllables, while there is a stronger correlation between scansion and spelling, corresponding perhaps to the greater conformity to Latin precedent which we have seen accompanies greater inconclusiveness about English phonology, that correlation does not fare particularly better than phonology in producing a consistent account of Sidney's practice. It is true, for example, in some of the more troublesome cases from sections 4.8 and 4.11, that the vowel of *you* spelled with two different letters is treated as long as in (64c); that of *Juniper* spelled with one is treated as short as in (74); and that of the diphthong of *my, by, thy, I* in (65) and *testifis* and *Idea* in (75b)–(76) is spelled with one letter and treated as short. But it is just as true that *to* spelled with one vowel is sometimes heavy (64a), *too* spelled with two is sometimes light (64b); and *do* is spelled sometimes with one vowel (63a,b,d), sometimes with two (69c, 56d) while consistently treated as short.

Why not then take Sidney at his word regarding the role he attributes to spelling, in a note appended to *OA* 11 (Ringler, 1962: 391)?

- (87) (a) Single consonantes comonly shorte, but suche as have a dowble
sownde (as 'lack', 'will', 'till') or suche as the vowell before dothe produce
longe (as 'hate, debate').
(b) Some wordes, as they have divers pronounciacons, to be written dyversly
(as some saye 'though', some pronounce it 'tho').
(c) As for 'wee', 'hee', 'shee', though they maye seeme to be a dowble vowel by
the wronge orthographi, be heere shorte, being in deed no other then the greek
iota; and the lik of our 'o', which some write dowble in this worde 'doo'.

(87c) shows that Sidney explicitly rejects the reliability of spelling as a guide to syllable weight. (87b) shows that at the same time he considers it important that the

spelling should reflect the syllable weight. Only the opaque (87a) is even plausibly interpreted as suggesting that spellings with double consonants can reveal syllable weight; but all the words cited are ones which are legitimately interpretable as heavy.

In sum, the instances in which spelling explains a scansion which is otherwise phonologically unsubstantiated boil down to possibly the vowels /u/ and /i/ in (74–76) and (65–66), and the /s/ spelled as *sc* in *discern*, *descende* in (73) – hardly the ‘written code’ of Hollander (1985).

5 Quantitative meter in English

If we these wonders, I say, with wonder abandon,
Nor can for mental heaviness their high study pursue, . . .
(Bridges, ‘Wintry Delights’, lines 156–7)

5.1 *Sidney’s lesson*

If Sidney’s practice is so much more phonologically well-founded than it has been held to be, we are back to the question we started with: why did he abandon the project of quantitative meter in English, and why did poets succeeding him in the English tradition never successfully establish the form either? More precisely, can we add any phonological explanations to the cultural explanations Attridge (1974) discusses, such as the waning of the humanist values that made the project so compelling, and the waxing of a luminous body of stress-based verse?

One, of course, is that even at its best Sidney’s practice is not perfect, as we have seen. And there are peculiar characteristics of the poems not even touched on here, such as more awkward syntax than is found in his stress-based verse (Iain Higgins, p.c.). But if that were all, surely someone in the galaxy of brilliant poets who were Sidney’s contemporaries – or indeed Sidney himself – could have taken the project a few steps further, and corrected any such imperfections.

What is more important, I would suggest, is that Sidney’s phonological achievement itself consists in recognizing real ambiguities in syllable weight in English, which compromise its suitability as the basis for meter. Most important is the inconstancy of the weight of CV.C syllables; the problem is compounded by indeterminacy of the weight of CVC syllables and to a lesser extent the neutralization of vowel length in final open syllables. The significance of this recognition of ambiguity emerges particularly clearly through its contrast with the assumption that has dominated the English critical discourse on quantitative meter, that in principle each type of syllable should be able to have its weight settled once and for all.

5.2 *Stone’s theory and Bridges’ practice*

Foremost in expressing this view is probably Stone (1901: 118), who found Sidney’s ‘“versifying” . . . a very unsatisfactory production’, and in a brief treatise firmly stated that:

since the subject [quantitative meter] is one on which there has been nothing but diversity of opinion and wanton inconsistency in the various statements of those who have undertaken to explain it, a simple and consistent account of the matter should find an audience.

Stone himself died young and never lived to illustrate his ideas, but his friend Robert Bridges did it for him, in his poem ‘Winty Delights’.

In what seem like perfectly reasonable naturalizations of the Latin rules of (2), Stone rejects the ideas that *h* does not function like a consonant, and that a vowel before another vowel is short:

(88) Less than a rheum, think of me to-day, dear Lionel, and take (6)
 s w s w s w s w s w s w

And his classifications of vowels’ individual lengths accord with standard descriptions of present day British English phonology.

But for unstressed syllables, Stone holds strictly that all CVC syllables are heavy unless they are followed by a vowel, and that all final open syllables are heavy, except for *a*, *the*, *to*, as well as *be* when it is a proclitic (*to be let*) and *me* when it is an enclitic (*give me*).

CVC lexical monosyllables are assumed to be no different from unstressed CVC syllables, though Stone (1901: 162) does puzzle about the fact that ‘short monosyllables ending in a consonant seem sometimes to have so much force that they are unwilling to scan short even before a vowel’, and occasional diacritics of Bridges reflect a similar intuition: his ‘˘’ in (89b) indicates that he feels the syllable to be heavy even though Stone’s theory classifies it as light:

(89) (a) Yea, set aside with these all NATURE’s beauty, the wildwood’s (38)
 s w s w s w s w s w s w

(b) From the credit sūm of enjoyment those simple AFFECTIONS, (53)
 s w s w s w s w s w s w

(c) That, set in our animal flesh-fabric, of our very lifeblood (55)
 s w s w s w s w s w s w

(d) In the flat accretions of new sedimentary strata; (93)
 s w s w s w s w s w s w

Most important, for polysyllables Stone (1901: 116–17) states explicitly that ‘the accent in English does *not* lengthen the syllables at all . . . accent and quantity are two entirely separate things, neither affecting the other in the smallest degree’. Thus in Bridges’ practice stressed CV.C syllables are scrupulously treated as light, occurring freely in either W1 as in (90a–c) or W2 as in (90d–f), just as in Latin:

(90) (a) Now in wintry delights, and long fireside meditation, (1)
 s w s w s w s w s w s w

(b) ’Twixt studies and routine paying due court to the Muses, (2)
 s w s w s w s w s w s w

(c) My solace in solitude, when broken roads barricade me (3)
 s w s w s w s w s w s w

- (d) And 'twere worth the living, howe'er unkindly bereft of (15)
 s w s w s w s w s w s w
- (e) Nay, – set aside the pleasant unhinder'd order of our life, (17)
 s w s w s w s w s w s w
- (f) Where the turrets and domes of pictured Tuscany slumber, (25)
 s w s w s w s w s w s w

Apart from the lexical monosyllables, about which in any case he concedes some doubt, there are few choices about syllable weight resulting from Stone's ideas which are in themselves untrue to English syllable weight. Yet Saintsbury (1906–10, 3: 425–7) is just as certain that Stone is wrong. He cites Clough's line in (91) which is praised by Stone,

- (91) Now with mighty vessels [ø] loaded, a lordly river. [ø] (pentameter)
 s w s w s w s w s w s w

and excoriates it as follows:³¹

Mr. Stone thought a line of his 'a perfect pentameter' – asked, indeed quite touchingly, if it is not? The answer is that it is not a pentameter at all . . . To scan 'rīvēr' 'rīvēr' is mere childish petulance, because it is pronounced the other way . . . One of the commonplaces for fighting on this subject is the almost famous position that 'quantity' is a dactyl while 'quiddity' is a tribrach . . . the late Mr. Stone 'would have that there did not live a man who, if the question were fairly put to him, could fail to detect the difference'. Well, I am that man; or rather, though I do see that 'quantity' is a rather (not much) more *dactylly* dactyl than 'quiddity', I deny that the latter is a tribrach at all.

How can poets and critics who must have some sensitivity to syllable weight in order to care about the issue at all disagree about it so passionately? Part of the answer, I have suggested here, is that both have some truth on their side: for many syllables the question of what its weight is has more than one plausible answer. Stone (1901: 151–2) himself notes that

the Romans from the moment that they began to write quantitative verse were never in any doubt as to the quantity of their syllables . . . there was none of that astonishing diversity of opinion, that amazing elasticity and inconsistency which we see even in the most conscientious of Elizabethan experimentalists.

Yet he never considers the possibility that that doubt itself is phonologically significant, rooted in complexities of syllable weight in English not shared by the languages of the poets' models.

5.3 Syllable weight in stress-based English meter

It is a commonplace that the failure of quantitative meter to take root in English is bound up with the success of stress-based meter in doing so. But the stark opposition

³¹ It is interesting to note that Saintsbury doesn't make his point by objecting to a line in which a CV.C syllable is in W2. This suggests that lines of this type may not strike him as unharmonious in quite the same way.

is misleading, as the adoption of stress-based meter did not in fact entail the abandonment of a role for weight. Not in Sidney's own practice, but not long after, certainly by that of Shakespeare, it reappears subtly as a condition on 'trissyllabic substitution' in iambic pentameter as illustrated in (25) and footnote 8 above; indeed, Saintsbury (1906–10) suggests that Spenser's influential experiments with trissyllabic substitution resulted directly from his experiments with equivalence in quantitative meters. Formally, as noted in section 3.5, iambic pentameter which allows productive trissyllabic substitution can be understood as in fact defining position size by a moraic trochee just as in (9a), though taking it only as a maximum, and not also a minimum (Hanson, 1997; Hanson & Kiparsky, 1996). Where it differs is in its prominence constraints, which, rather than requiring weight in strong positions as in (9b), prohibit, roughly speaking, stressed syllables of polysyllabic words in weak positions (Hanson & Kiparsky, 1996; Kiparsky, 1977), as noted in section 2.4.

In later meters too, such as Hopkins' Sprung Rhythm, weight again plays a role through position size being defined by a moraic trochee as in (9a), as we saw in (24), again as a maximum and not a minimum. This meter differs even less from quantitative meter in that it also requires prominence in strong positions; however, the relevant form of prominence is stress, not weight as in (9b) (Hanson, 1992; Hanson & Kiparsky, 1996; Kiparsky, 1989). Since there is such a close relationship of weight to stress in English, the form of the meter remains strikingly similar to Sidney's quantitative practice – or at least as Sidney's might have been if he had arrived at Hopkins' scrupulous judgments about the lengths of English vowels (Hanson, 1992; Hanson & Kiparsky, 1996; Kiparsky, 1989: 313). But it is perceived as robust, not effete: only those CVC syllables which meet all conditions for potentially bearing stress in the phonology, rather than just that of weight, occur in S; and CV.C syllables occur either in S or in W1 without any shifting assumptions about the relevant phonological representations being required for scansion.

5.4 Conclusion

In contrast to the rigid assumptions of his critics, Sidney's quantitative practice shows discovery of the inconstancy and indeterminacy of syllable weight in English, and comes to structure it in a way which communicates the nature of this complexity. But because the phonology underdetermines the metrical possibilities, this communication is ultimately dependent only on metrical preferences rather than on the metrical constraints themselves. Quantitative meter in English is not too hard, as its critics and practitioners have sometimes claimed, but too easy. What it gave way to was a more restrictive system, where weight continues to play a role, but only within the contribution it makes to stress, exactly the situation which obtains in English phonology.

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References

- Allen, W. S. (1973). *Accent and rhythm: prosodic features of Latin and Greek: a study in theory and reconstruction*. Cambridge: Cambridge University Press.
- Attridge, D. (1974). *Well-weighed syllables: Elizabethan verse in classical metres*. Cambridge: Cambridge University Press.
- Barber, C. (1997). *Early modern English*. New edn. Edinburgh: Edinburgh University Press.
- Borowsky, T. J. (1986). Topics in the lexical phonology of English. PhD dissertation, University of Massachusetts.
- Brogan, T. V. F. (1981). *English versification, 1570–1980: a reference guide with a global appendix*. Baltimore: Johns Hopkins University Press.
- Chomsky, N. & M. Halle (1968). *The sound pattern of English*. New York: Harper and Row.
- Dobson, E. J. (1968). *English pronunciation 1500–1700*. 2nd edn. Oxford: Clarendon Press.
- Dresher, E. B. & A. Lahiri (1991). The Germanic foot: metrical coherence in Old English. *Linguistic Inquiry* 22: 251–86.
- Fidelholtz, J. L. 1966. Vowel reduction in English. MS, MIT.
- Fussell, P. (1979). *Poetic meter and poetic form*. Rev. edn. New York: Random House.
- Gussenhoven, C. (1986). English plosive allophones and ambisyllabicity. *Gramma* 10: 119–41.
- Halle, M. & S. J. Keyser (1971). *English stress: its form, its growth and its role in verse*. New York: Harper and Row.
- Hammond, M. (1997). Vowel quantity and syllabification in English. *Language* 73: 1–17.
- Hanson, K. (1992). Resolution in modern meters. PhD dissertation, Stanford University.
- Hanson, K. (1997). From Dante to Pinsky: a theoretical perspective on the history of the modern English iambic pentameter. *Rivista di Linguistica* 9: 53–97.
- Hanson, K. (1999). Nonlexical word stress in the English iambic pentameter: a study of John Donne. MS, University of California at Berkeley.
- Hanson, K. & P. Kiparsky (1996). A parametric theory of poetic meter. *Language* 72: 287–335.
- Hayes, B. (1981). A metrical theory of stress rule. PhD dissertation, MIT (1980). Bloomington: Indiana University Linguistics Club.
- Hayes, B. (1982). Extrametricality and English stress. *Linguistic Inquiry* 13: 227–76.
- Hayes, B. (1987). A revised parametric metrical theory. In *NELS* 17: 274–89.
- Hayes, B. (1995). *Metrical stress theory: principles and case studies*. Chicago: University of Chicago Press.
- Hoard, J. E. (1971). Aspiration, tenseness, and syllabification in English. *Language* 47: 133–40.
- Hollander, J. (1985). Observations in the art of English quantity. In *Vision and resonance*. 2nd edn. New Haven: Yale University Press.
- Hung, H. (1994). The rhythmic and prosodic organization of edge constituents. PhD dissertation, Brandeis University.
- Inkelas, S. & D. Zec (1993). Auxiliary reduction without empty categories: a prosodic account. *Working Papers of the Cornell Phonetics Laboratory* 8: 205–53.
- Jakobson, R. (1973). Principes de versification. In T. Todorov (ed.), *Questions de poétique*,

- Paris: Editions de Seuil. Partial translation by L. Robel of *O cheshskom stikhe preimushchestvenno v sopostavlenii s russkim*, Berlin–Moscow, 1923.
- Kager, R. (1989). A metrical theory of stress and destressing in English and Dutch. PhD dissertation, Rijksuniversiteit Utrecht, The Netherlands. Dordrecht: Foris.
- Kahn, D. (1980). Syllable-based generalizations in English phonology. PhD dissertation, MIT (1976). New York: Garland.
- Kenyon, J. S. & T. A. Knott (1953). *A pronouncing dictionary of American English*. Springfield, MA: G. and C. Merriam Co.
- Kiparsky, P. (1968). Metrics and morphophonemics in the *Kalevala*. In Gribble, C. E. (ed.), *Studies presented to Professor Roman Jakobson by his students*. Cambridge, MA: Slavica. 137–64. (Reprinted in Freeman, D. C. (ed.), *Linguistics and literary style*. New York: Holt, Rinehart and Winston, 1970. 165–81.)
- Kiparsky, P. (1972). Metrics and morphophonemics in the *Rigveda*. In Brame, M. K. (ed.), *Contributions to generative phonology*. Austin: University of Texas Press. 171–200.
- Kiparsky, P. (1975). Stress, syntax and meter. *Language* 51: 576–616.
- Kiparsky, P. (1977). The rhythmic structure of English verse. *Linguistic Inquiry* 8: 189–247.
- Kiparsky, P. (1982). Lexical morphology and phonology. In Linguistic Society of Korea (ed.), *Linguistics in the morning calm*. 2 vols. Seoul: Hanshin Publishing Co. 1: 3–91.
- Kiparsky, P. (1989). Sprung rhythm. In Kiparsky, P. & G. Youmans (eds.), *Rhythm and meter*. San Diego: Academic Press.
- Kiparsky, P. (1991). Catalexis. MS, Stanford University.
- Kiparsky, P. (1993). Blocking in nonderived environments. In Hargus, S. & E. Kaisse (eds.), *Studies in lexical phonology*. San Diego: Academic Press.
- Kiparsky, P. (1999). Inversion, quantitative compensation, and latent stress. Paper presented at Formal Approaches to Poetry: Recent Developments in Generative Metrics, University of Toronto, October 8–10.
- Kökeritz, H. (1953). *Shakespeare's pronunciation*. New Haven: Yale University Press.
- Lahiri, A. & P. Fikkert (1999). Trisyllabic shortening in English: past and present. *English Language and Linguistics* 3: 229–67.
- Lahiri, A., T. Riad & H. Jacobs (1999). Diachronic prosody. In van der Hulst, H. (ed.), *Word prosodic systems in the languages of Europe*. Berlin and New York: Mouton de Gruyter. 335–422.
- Leino, P. (1985). *Language and metre: metrics and the metrical system of Finnish*. Helsinki: Suomalaisen Kirjallisuuden Seura. Translation by A. Chesterman of *Kieli, runo ja mitta: suomen kielen metriikka*, Pieksämäki, 1982.
- Lieberman, M. & A. Prince (1977). On stress and linguistic rhythm. *Linguistic Inquiry* 8: 249–336.
- Malone, J. (1982). Generative phonology and Turkish rhyme. *Linguistic Inquiry* 13: 550–3.
- Malone, J. (1988). On the global-phonologic nature of Classical Irish alliteration. *General Linguistics* 28: 91–103.
- McCarthy, J. & A. Prince (1986). Prosodic morphology I. MS, University of Massachusetts at Amherst and Brandeis University.
- McCully, C. B. (1991). Non-linear phonology and Elizabethan prosody. *Transactions of the Philological Society* 89: 1–35.
- McCully, C. B. (1992). The phonology of resolution in Old English word-stress and metre. In Colman, F. (ed.), *Evidence for Old English: material and theoretical bases for reconstruction*. Edinburgh: John Donald Publishers Ltd. 117–41.
- Mester, A. (1994). The quantitative trochee in Latin. *Natural Language and Linguistic Theory* 12: 1–61.

- Minkova, D. (1997). Constraint ranking in Middle English stress-shifting. *English Language and Linguistics* 1: 135–75.
- Mohanan, K. P. (1986). *The theory of lexical phonology*. Dordrecht: Reidel.
- Myers, S. (1987). Vowel shortening in English. *Natural Language and Linguistic Theory* 5: 485–518.
- Prince, A. (1985). Improving tree theory. *Berkeley Linguistic Society* 11: 471–90.
- Prince, A. (1989). Metrical forms. In Kiparsky, P. & G. Youmans (eds.), *Rhythm and meter*. San Diego: Academic Press. 45–80.
- Prince, A. (1990). Quantitative consequences of rhythmic organization. *Chicago Linguistic Society* 26: 355–98.
- Prince, A. & P. Smolensky (1993). Optimality theory: constraint interaction in generative grammar. MS, Rutgers University and University of Colorado.
- Raven, D. S. (1965). *Latin metre: an introduction*. London: Faber and Faber.
- Riad, T. (1992). Structures in Germanic prosody. PhD dissertation, Stockholm University.
- Ross, J. R. (1972). A reanalysis of English word stress. Part I. In Brame, M. K. (ed.), *Contributions to generative phonology*. Austin: University of Texas Press. 229–323.
- Saintsbury, G. (1906–10). *A history of English prosody from the twelfth century to the present day*. 3 vols. London: Macmillan.
- Selkirk, E. O. (1984). *Phonology and syntax: the relation between sound and structure*. Cambridge, MA: MIT Press.
- Smith, G. (ed.) (1937). *Elizabethan critical essays*. 2 vols. Rpt. from 1st edn. (1904). Oxford: Oxford University Press.
- Stone, W. J. (1901). Classical metres in English verse. Published with R. Bridges, *Milton's Prosody*, Oxford.
- Thompson, J. (1961). *The founding of English metre*. London: Routledge and Kegan Paul.
- Young, Sir G. (1928). *An English prosody on inductive lines*. Cambridge: Cambridge University Press.
- Zec, D. (1988). Sonority constraints on prosodic structure. PhD dissertation, Stanford University.

Editions cited

- Bridges, R. *Poetical works of Robert Bridges*. London: Oxford University Press, 1953.
- Chaucer, G. *The Riverside Chaucer*, 3rd edn. L. Benson (general ed.). Boston: Houghton Mifflin, 1987.
- Donne, J. *The Complete Poetry of John Donne*, ed. J. T. Shawcross. Garden City, New York: Anchor Books, 1967.
- Hopkins, G. M. *The poems of Gerard Manley Hopkins*, 4th edn, ed. W. H. Gardner and N. H. Mackenzie. London: Oxford University Press, 1967.
- Shakespeare, W. *The Riverside Shakespeare*, textual ed. G. B. Evans. Boston: Houghton Mifflin, 1974.
- Sidney, Sir P. *The Countess of Pembroke's Arcadia (The Old Arcadia)*, ed. J. Robertson. Oxford: Clarendon Press, 1973.
- Sidney, Sir P. *The poems of Sir Philip Sidney*, ed. W. A. Ringler. Oxford: Clarendon Press, 1962.
- Vergil. *The Aeneid of Vergil Books I–VI and The Metamorphoses of Ovid. Selections with introduction, notes and vocabulary*, rev. edn, ed. C. Knapp. Chicago: Scott, Foresman and Co., 1928.