A CONSTRAINT ON THE WELL-FORMEDNESS OF OLD ENGLISH ALLITERATIVE VERSE

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The well-formedness of half-lines of Old English alliterative verse is determined not only by the distribution of stress but also by the disposition of syllables. The relevance of the syllable disposition to determining the well-formedness of half-lines is seen in the fact that quadrisyllabic half-lines containing two unprefixed disyllabic words must not begin with a word headed by a light syllable. This fact is elegantly captured by a constraint which requires that half-lines of Old English alliterative verse contain at least three feet in Keyser and O'Neil's (1985) sense, and the introduction of the constraint into a theory of Old English poetic meter sheds new light upon some other peculiar aspects of Old English alliterative verse.*

1. Introduction

Various attempts have been made at determining the well-formedness of half-lines of Old English (henceforth, OE) alliterative verse within both the traditional and the generative-phonological framework. The former, which includes Sievers (1885, 1893), Pope (1942), Bliss (1958), Creed (1990), and Hutcheson (1995), among others, argues that the well-formedness of half-lines is determined by the number of syllables and the rhythm produced by the distribution of stress. The latter, which includes Keyser (1969), Halle and Keyser (1971), Russom

* This paper is a revised and enlarged version of the paper read at a symposium of the 46th Annual Conference of the Kyushu Branch of the English Literary Society of Japan held at Fukuoka Women's Junior College on October 24, 1993 and at a workshop of the 15th National Conference of the English Linguistic Society of Japan held at Tokyo Metropolitan University on November 23, 1997. I am grateful to the following people for their insightful comments and criticisms on an earlier version of this paper: Shosuke Haraguchi, Eiji Yamada, Satoshi Ohta, Naoaki Wada, Motoko Katayama, and two anonymous EL reviewers. Thanks should also go to Mark Zimmermann for his suggesting stylistic improvements.

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(1987), and Fujiwara (1990), among others, argues that alliteration plays a primary role in determining the well-formedness of half-lines. There is, however, a fact for which neither the traditional nor the generative-phonological framework can provide any proper treatments. This paper argues that the fact is regulated by the disposition of syllables, which has received little attention in the literature of OE meter, rather than by the number of syllables, rhythm, and alliteration, which have received much attention. In fact, this paper demonstrates that the fact is captured by introducing into a theory of OE meter the notion of foot proposed by Keyser and O’Neil (1985), which is originally designed for an account of OE segmental phenomena.

This paper is organized as follows. Section 2 provides relevant facts to the discussion in this paper and induces a basic generalization, which states that quadrisyllabic half-lines containing two unprefixed disyllabic words must not begin with a word headed by a light syllable but with a word headed by a heavy syllable. Section 3 is devoted to a theoretical characterization of the generalization induced in section 2 and claims that the generalization in terms of the syllable disposition is formulated as a constraint, called the Minimal Half-Line Constraint, which requires that half-lines contain at least three feet in Keyser and O’Neil’s (1985) sense. Section 4 provides supporting evidence for the proposal and demonstrates that the proposed constraint is capable of accounting for some classes of facts which have been puzzles to either the traditional or the generative-phonological framework: the lack of disyllabic half-lines, the lack of trisyllabic half-lines containing a disyllabic word headed by a light syllable, the existence of trisyllabic half-lines containing a disyllabic word headed by a heavy syllable and a monosyllabic word, and the existence of trisyllabic half-lines containing three monosyllabic words. Section 5 examines some apparent exceptions to the constraint. Finally, section 6 demonstrates that recent dominant studies on OE meter do not adequately capture the fact discussed here.

2. Basic Generalizations

2.1. Facts

OE alliterative verse, as schematized in (1), has its peculiar prosodic structure. A line, called a long-line in Germanic metrics, is divided into two parts, called half-lines, which have two prominent characteristics. First, half-lines share the same characteristic with each other in
that they consist of a seemingly undefined number of syllables and contain at least one consonant entering into alliteration. Second, the first half-line, called a-verse, is different from the second half-line, called b-verse, in that the former may contain maximally two alliterating consonants, while the latter contains only one alliterating consonant.

There has been a lot of controversy over puzzles about the well-formedness of half-lines. However, the puzzles are not completely resolved. There are some cases for which neither the traditional metrics nor the generative-phonological metrics provides any proper treatments. One of such cases is the fact, given in (2), that quadrisyllabic half-lines consisting of two unprefixed disyllabic words begin with a word headed by a heavy syllable and not, or more precisely, rarely, with a word headed by a light syllable.\(^1\)

\[
\begin{align*}
&\text{(2a)} \quad \text{[word HX] [word LX]} \\
&\text{(2b)} \quad *\text{[word LX] [word HX]} \\
&\text{(2c)} \quad *\text{[word LX] [word LX]}
\end{align*}
\]

(\(H=\)heavy syllable; \(L=\)light syllable; \(X=\)heavy or light syllable)

Type (2a), which often occurs, is exemplified by the examples in (3). They all contain two unprefixed disyllabic words and begin with a word headed by a heavy syllable.\(^2\)

\(^1\) Heavy and light syllables are defined as shown in (i).

\[
\begin{align*}
&\text{(i) a. heavy syllable: } C_0V C_1; C_0V C_0. \\
&\text{N.B.: } V=\text{short vowel; } \overline{V}=\text{long vowel or diphthong} \\
&\text{b. light syllable: } C_i\overline{V}
\end{align*}
\]

In addition, the syllable division in OE is assumed to obey the Onset First Principle, which requires that a consonant cluster licensed as an onset cluster of monomorphemic words be seen as an onset cluster of a syllable and incorporated into the syllable before the incorporation of coda consonants (Clements and Keyser (1983: 37)).

\(^2\) Examples like those in (3) and (4) are also adduced by Hutcheson (1995) for a different purpose. See Hutcheson (1995) and Suzuki (1996), for other cases and related issues.

Notice in addition that there is another type of two-word quadrisyllabic well-formed half-line beginning with a word headed by a heavy syllable. This type of half-line is schematized as in (i).

\[
\begin{align*}
&\text{(i) [word HX] [word HX]}
\end{align*}
\]
The rarity of types (2b) and (2c) is exemplified by two facts. The first fact is that, as shown in (4), two-word half-lines beginning with an unprefixed disyllabic word headed by a light syllable mostly consist of five syllables.

(4)

a. cyning aelwihta ‘the king of strange creatures’
   
   (Exodus 421b)

b. fæder ælmihtig ‘the father almighty’
   
   (Juliana 658a)

c. guma gilphlæden ‘the man proud of himself’
   
   (Beowulf 868a)

d. werod forbærnde ‘the troop to be consumed’
   
   (Exodus 123b)

e. wiga wægifre ‘the murderous battle’
   
   (Phoenix 486a)

The second fact which exemplifies the rarity of types (2b) and (2c) comes from a statistical survey of quadrisyllabic half-lines containing two unprefixed disyllabic words and beginning with a word headed by a light syllable in Krapp and Dobbie’s Anglo-Saxon Poetic Records (henceforth, ASPR). I selected the disyllabic words in (5) for the survey, whose citation forms are listed in the glossaries of Klaeber’s edition of Beowulf and Doane’s edition of Genesis A.

(5)


b. cearu ‘care’, cofan (gen/dat sg, nom/acc pl of cofa ‘chamber’), cofum (dat pl of cofa), cuma ‘comer’, cyme ‘arrival’, cure (pret 3 sg of ceosan ‘to choose’), cyning

Half-lines like (i) occur most frequently, but this type of half-line is excluded from the discussion here in order to concentrate upon two-word quadrisyllabic half-lines containing a disyllabic word headed by a light syllable. For half-line type (i) and its well-formedness, see section 4.4.

There is no particular reason for choosing Beowulf and Genesis A as sources of the words listed in (5). They are chosen only for the random sampling of a substantial body of words for a statistical survey.
'king'

c. dæge (dat sg of dæg ‘day’), dæges (gen sg of dæg), daga (gen pl of dæg), dagum (dat pl of dæg), dagas (nom/acc pl of dæg), draca ‘dragon’, dracan (gen/dat/acc sg, nom/acc pl of draca), drepe ‘violent death’, drepen (pp of drepan ‘to kill’), dropen (=drepen), duguð ‘people’, duru ‘gate’, dyde (pret 3 sg of don ‘do’), dydon (pret pl of don)

d. eodor ‘prince’, eoten ‘giant’, etan ‘to eat’, eteð (pres 3 sg of etan)


h. ides ‘woman’

i. lagu ‘sea’, lago (=lagu), lage (dat sg of lagu), leger ‘place of lying’, lufi ‘love’, lufen ‘joy’, lyfA (pres 3 sg of libban ‘to live’), luIPA (pres 3 sg of lufian ‘to love’)


k. naca ‘vessel’, nacan (gen/dat/acc sg, nom/acc pl of naca), nacod ‘naked’, nama ‘name’, naman (gen/dat/acc sg,
nom/acc pl of *nama*, name (=*nama*), noma (=*nama*), noman (=*naman*), nearo ‘narrow’, nefa ‘nephew’, neowol ‘steep’, niman ‘to take’, nymeð (pres 3 sg of *niman*), nime (pres 1 sg of *niman*), nimeð (=nymeð), niper ‘downward’, nose ‘projection’, nosan (gen/dat sg, nom/acc pl of *nose*)

l. ofost ‘haste’, open ‘open’

m. racu ‘storm’, race (dat sg of *racu*), rodor ‘heaven’, ryne ‘course of water’


o. trede ‘firm’, trode (acc sg of *trodu* ‘rack’)

p. þonan ‘thence’, þyle ‘orator’

q. wada (gen pl of *wæd* ‘water’), wadan ‘to advance’, wado (=wadu), wadu (nom/acc pl of *wadu*), wala (gen pl of *wæl* ‘slaughter’), walu (nom/acc pl of *wæl*), walo (=walu), wana ‘wanting’, welan (gen/dat/acc sg, nom/acc pl of *wela* ‘prosperity’), warod ‘shore’, weðer ‘weather’, wegan ‘to carry’, wege (dat sg of *weg* ‘way’), welig ‘wealthy’, wered ‘sweet drink’, werod ‘host’, weora (gen pl of *wer* ‘man’), wiga ‘warrior’, wigum (dat pl of *wiga*), wine ‘friend’, wines (gen sg of *wine*), witan ‘to know’, witod (pp of *wiotian* ‘to appoint’), woruld ‘world’, wracu ‘revenge’, wrace (dat sg of *wracu*), wræce (nom/acc pl of *wracu*), wrecan ‘to drive’, wrecce (subj sg of *wrecan*), wrecen (pp of *wrecan*), wucan (gen/dat/acc sg of *wucu* ‘week’), wudu ‘wood’, wuda (gen pl of *wudu*), wudes (gen sg of *wudu*)
The result of the survey, which is indicated in (6), shows that the half-line types in (2b) and (2c) are most unlikely to occur in OE alliterative verse. Of 4102 relevant half-lines containing the words in (5), 14 examples are found which exhibit the LX | LX/HX | pattern. These exceptions are explained in section 5.

(6) a.  

<table>
<thead>
<tr>
<th></th>
<th>LX</th>
<th>LX/HX</th>
<th>frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>4102</td>
<td>14</td>
<td>0.3%</td>
<td></td>
</tr>
</tbody>
</table>

b. exceptional half-lines: *Phoenix 575b; Christ and Satan 273b, 526b; Daniel 427b; Azarias 180a; Elene 438b, 454b; Riddle 78 7b; The Descent into Hell 13b; Paris Psalter 67.7 2b, 73.19 3a; Genesis A 1078a, 1112a, 1551a

2.2. The Nature of the Facts

Having provided the evidence that half-line type (2a) is to be licensed as well-formed, while half-line types (2b) and (2c) are to be seen as ill-formed, I will next examine what kind of factor regulates the frequent occurrence of (2a) and the rare occurrence of (2b) and (2c).

In the first place, the fact under consideration cannot be explained by the rhythmic structure of half-lines. In OE, primary word stress falls on the initial syllable of an unprefixed word. Thus, as illustrated in (7), the alternation of strong (S) and weak (W) beats is realized in (2).

(7) SW SW

a. [WORD HX] [WORD LX] (=2a))

b. *[WORD LX] [WORD HX] (=2b)

c. *[WORD LX] [WORD LX] (=2c)

The three half-line types in (2) are rhythmically identical to, and cannot be distinguished from, each other. More importantly, the rhythmic pattern SWSW is an optimal rhythmic pattern in OE. From a rhythmic point of view, therefore, there is no reason for identifying types (2b) and (2c) as ill-formed half-lines.

The distinction between (2a) and (2b, c) cannot be accounted for by principles of alliteration, either. The irrelevance of alliteration to the distinction is exemplified by facts about double alliteration. Quadrisyllabic half-lines containing an unprefixed disyllabic noun and its un-
prefixed disyllabic modifier (either an adjective or a genitive noun),
when they exhibit double alliteration, are realized as type (2a), not as
type (2b) or type (2c), as the cases in (8)–(11) illustrate. In (8), (9),
and (11), the head nouns are preceded by their modifiers. In (10), by
contrast, the head nouns are followed by their modifiers. Despite the
difference in word order, the half-lines all begin with a word headed by
a heavy syllable.

(8) a. gromheort guma ‘the hostile-minded man’
     (Beowulf 1682a)
    b. gūðfrec guma ‘the man bold in battle’ (Andreas 1117a)

(9) a. waelrēow wiga ‘the cruel man’ (Beowulf 629a)
    b. wælgrim wiga ‘the fierce man’ (Riddle 15 8a)

(10) a. wonsceæft wera ‘men’s misery’ (Beowulf 120a)
     b. wælnīð wera ‘men’s hostility’ (Beowulf 3000a)

(11) a. wærlēas werod ‘the faithless band of people’
     (Genesis A 67a)
    b. wælhrēow werod ‘the cruel troop’ (Daniel 53a)

Both nouns and adjectives are of the highest rank in the alliterative
hierarchy, which determines the likelihood of a word entering into allit-
eration (Fujiwara (1990: 284)). It is logically possible therefore that
half-lines like those in (8)–(11) begin with words like guma, wiga, wera,
and werod. Both the nouns and their modifiers are actually able to
enter into alliteration, and the optimal rhythmic pattern SW is realized.
Such half-lines are not attested, however. Thus, the lack of half lines
like *wiga wælreow (cf. (9a)) cannot be attributed to any constraints on
alliteration.

The third possibility is that the rarity of types (2b) and (2c) is attrib-
uted to some syntactic principle governing word order patterns of
phrases and sentences in OE alliterative verse. Take the cases in
(8)–(11) again as sample cases. Only in (10) do the modifiers (the
genitive nouns) occur in postnominal position. As far as the data in
(8)–(11) are concerned, there arises the possibility that in OE allitera-
tive verse, genitive nouns occur in postnominal position, while adjec-
tives as modifiers occur in prenominal position. That is not the case,
however. As indicated in (12), genitive nouns occur prenominally,
and adjectives modifying nouns occur postnominally, in verse.

(12) a. Ænoses sunu ‘Enos’s son’ (Genesis A 1163a)
     b. waldendes sunu ‘the Lord’s son’
     (Christ and Satan 118b)
c. fæder ælmihtig ‘the father almighty’ (Juliana 658a)
d. Feorh cynna fela ‘many races of mortals’

(Maxims I 14a)

In addition, OE adjectives which modify nouns, as indicated in (13) and (14), occur in either prenominal or postnominal position even in prose. In (13), the modifiers (ælmihtiga in (13a) and andwerdan in (13b)) occur in prenominal position (Mitchell (1985: 51)). In (14), on the other hand, the modifiers (mycel in (14a) and bliðe in (14b)) occur in postnominal position (Mitchell (1985: 62)).

(13) a. se Ælmihtiga Hælend ‘the Savior almighty’

(Homilies of Ælfric i 58.32)
b. ðysse andwerdan tide ‘the existing time’

(Homilies of Ælfric ii 84.25)

(14) a. Nu is þearf mycel ‘Now much is required ...’

(The Blickling Homilies 35.27)
b. gebēoras bliðe ‘the joyous guests’

(Ælfric’s Lives of Saints 26.225)

The above facts indicate that the word order patterns of half-lines like those in (8)–(11) are also subject to syntactic principles operative in OE prose. It follows, then, that the lack of (2b) and (2c) cannot be attributed to syntactic principles governing the syntactic style of OE poetry.

The above arguments lead us to conclude that rhythm, stress, alliteration, and word order cannot determine the well-formedness of (2a) or the ill-formedness of (2b) and (2c). In fact, there seems to be little evidence that semantics and pragmatics count in determining the well-formedness of half-lines. Thus, the distinction between (2a) and (2b, c) must be derived by a phonological factor. The only remaining possibility is that the distinction is attributed to the difference in syllable disposition.

2.3. A Descriptive Generalization and the Possibility of Its Characterization

The discussion in the previous section induces the following descriptive generalization about possible and impossible quadrisyllabic half-lines containing two unprefixed disyllabic words.

(15) Quadrisyllabic half-lines containing two unprefixed disyllabic words must begin with a word headed by a heavy syllable.

The next question is what kind of device is to be introduced into a theory of OE meter. One might argue from a viewpoint of traditional
metrics that the principles governing the application of resolution (*Auflosung* in Sievers’s term), by which the sequence of a light syllable plus another syllable is equated with a single heavy syllable, can explain the fact under discussion. A possible explanation in terms of resolution would proceed as follows. Since half-lines are assumed to contain four syllables in a standard theory of traditional metrics (Sievers (1885, 1893)), the ill-formedness of half-line types (2b) and (2c) is attributed to the application of resolution in the first word, which renders half-lines trisyllabic. That is why the types rarely occur. The frequent occurrence of type (2a) is attributed to the suspension of resolution, by which the application of the operation is blocked in order for the half-line type to be licensed as well-formed.

Fujiwara (1990: 313–328) demonstrates, however, that there are many exceptions to resolution which cannot be ignored and that the operation does not play any roles in determining the well-formedness of half-lines. In fact, as shown in (16), trisyllabic half-lines, which are seen to be ill-formed in traditional metrics, are often observed in OE alliterative verse (Fujiwara (1988: 108)). Thus, the prohibition of trisyllabic half-lines does not have any rigid empirical grounds.

(16) a. Ælces twā ‘two of each’ (*Genesis A* 1338b)  
    b. hāt in gān ‘bid (them) come in’ (*Christ and Satan* 386b)  
    c. nēan bīdan ‘wait for (Grendel) near here’  
       (*Christ and Satan* 528b)

If Fujiwara’s argument is correct, then an explanation in terms of resolution for the well-formedness of (2a) and the ill-formedness of (2b) and (2c) is untenable. It follows, then, that a new theoretical device must be introduced into the theory of OE meter in order to capture a restriction on the syllable disposition in quadrisyllabic half-lines consisting of two unprefixed disyllabic words.

3. The Minimal Half-Line of OE Alliterative Verse

3.1. Theoretical Assumptions

Before providing a theoretical characterization of (15), I will introduce some theoretical assumptions on which the characterization is essentially based. In the first place, I assume in line with the current stream of phonological theory that phonological structure, as illustrated in (17), consists of a line of segmental skeletons, where a segment is represented as ‘X,’ and a set of planes, where phonological structures
are represented (cf. Clements (1985) and Sagey (1986), among others).

I will next assume, following Halle and Vergnaud (1987) and others, that metrical structure consists of layers of metrical grids, which are represented by asterisks, and of metrical constituents, which are represented by parentheses and have their heads. Consider the hypothetical case in (18), for example. This hypothetical case indicates a quadrisyllabic word in a language which has binary left-headed metrical structures on line 0 and unbounded left-headed metrical structures on line 1. If the metrical structure in (18) represents a structure on the stress plane, where asterisks on lines 1 and 2 are interpreted as stress, then it indicates that primary word stress falls on the initial syllable and that secondary word stress falls on the penultimate syllable.

\[
(17) \quad (18)
\]

The third assumption relevant to the discussion here is concerned with the metrical structure in OE. I assume in line with Keyser and O’Neil (1985) that OE is a syllabic language which has two metrical structures, one for stress and the other for segmental phenomena. The metrical structure for stress assignment, which is irrelevant to the discussion here, is constructed in accordance with the algorithm in (19) (Okazaki (1989a: 161)) and is represented on the stress plane. The metrical structure for segmental phenomena, which is crucially relevant to the discussion here, is constructed in accordance with the algorithm in (20) (Keyser and O’Neil (1985: 6)) and is represented on a plane

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4 In the subsequent development of metrical theory, metrical structures are more articulated than Halle and Vergnaud’s (1987) structure. However, the subsequent articulation of metrical structures does not have any influence on the contentions in this paper.

5 It is argued in the recent generative-phonological literature that OE is a moraic language. However, the proposed moraic feet, even if they are effective in explaining word-level phonological phenomena, are not effective in distinguishing half-line type (2a) from half-line types (2b) and (2c). For this issue, see section 6.
distinct from the stress plane, called here the second metrical plane.\footnote{The algorithm in (20) appears somewhat dissimilar to Keyser and O’Neil’s (1985: 6) original formulation; it is in fact a reformulated version of their Foot Construction couched in Halle and Vergnaud’s (1987) terms without distorting its essential substance.}

(19)  a. On line 0, construct left-headed quantity-insensitive binary constituents from right to left.

b. On line 1, construct left-headed quantity-insensitive unbounded constituents.

(20)  a. Assign a line 1 asterisk to heavy syllables.

b. On line 0, construct right-headed quantity-sensitive binary constituents from left to right.

Postulation of two metrical structures is a legitimate way of accounting for phonological phenomena locally (cf. Rappaport (1984), Halle and Vergnaud (1987), and Okazaki (1989b)). In fact, there are at least two advantages of postulating two metrical structures in OE. The first advantage is that postulation of the second metrical plane, if OE is a syllabic language, provides a local account of the process of high vowel deletion, which, as shown in (21), deletes short high vowels (/i/ and /u/) in an open syllable when they are preceded, in derived environments, by either one heavy syllable or two light syllables.

(21)  a. déman (inf ‘to judge’) \(<\text{dēm+i+an (from dōm+i+an through i-Umlaut)}\)

b. werod (nom/acc pl of werod ‘troop’) \(<\text{werod+u}\)

Keyser and O’Neil (1985: 10) propose rule (22) to capture facts about high vowel deletion.

(22)  

\[ \begin{array}{c}
\text{V} \\
\text{R}
\end{array} \]

\[ [+\text{high}] \rightarrow \phi / F[ ] \]

Rule (22) says that short high vowels in an open syllable which immediately follow a foot, or a metrical constituent, are deleted. The rule accounts for the fact in (21), as illustrated in (23).

(23)  a. (20a) \(*\) \(*\) \(*\)

(20b) \(*\) \(*\) \(*\) (22)

\[ \text{dēm+i+an \rightarrow dēman} \]

b. \(*\) \(*\) \(*\)

(20b) \(*\) \(*\) \(*\) (22)

\[ \text{werod+u \rightarrow werod} \]
The high vowels /i/ and /u/ in (21), both of which are in an open syllable, are deleted because, as represented in (23), they immediately follow a foot.

Another advantage of postulating the second metrical plane is that it provides a principled account of the distribution of secondary stress. In OE, secondary word stress, as shown in (24), falls on the penultimate syllable when the syllable is preceded by either one heavy syllable or two light syllables, and does not when the syllable is preceded by one light syllable (cf. Sievers (1885, 1893) and Campbell (1959), among others).

(24) a. hängian (inf 'to hang')
    b. æpelinga (gen pl of æpeling 'prince')
    c. lúfode (pret 1, 3 sg of lúfian 'to love')

The algorithm in (19) does not capture the distribution of OE secondary stress. Okazaki (1989a: 150) proposes the following rule by utilizing the metrical structure on the second metrical plane.

(25) *→ . / (* *)
    * * stress plane
    X X
    (* *)
    * second metrical plane (X=syllable nucleus)

This rule requires that secondary stress which corresponds to the head of a metrical constituent on the second metrical plane be deleted. It accounts for the distribution of secondary stress, as shown in (26)(n/a= not applicable).7

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7 Secondary word stress has been one of the central issues in OE phonology, and various attempts have been made from various viewpoints in order to capture its distribution. Some argue that no secondary stress is attested in OE, but others argue that secondary stress is attested on metrical grounds. Keyser and O'Neil (1985: 11) implicitly take the former position, assuming that line 0 on the OE stress plane is unbounded and left-headed. In this paper, by contrast, I take the latter position and adopt Sievers's (1893) theory of OE meter as a descriptive basis for attesting secondary stress of OE words. From Sievers's theory of meter follow the facts about secondary stress illustrated in (24), which cannot be captured by unbounded left-headed metrical constituents. That is the reason for adopting the algorithm in (19). For similar positions on the distribution of OE secondary stress, see Campbell (1959), Ono and Nakao (1980), Nakao (1985), and Dresher and Lahiri (1991), among others. For different positions, see Keyser (1969), Halle and Keyser (1971), and Hogg (1992), among others.

OE secondary stress also assumes theoretical importance and have received much
Notice that the metrical structure constructed by (20), which has been justified above, reflects the syllable disposition in an indirect way. Thus, I will reformulate the generalization in (15) as a constraint on half-lines in terms of the metrical structure on the second metrical plane.

3.2. Formulating a Constraint on Half-Lines

In this section, I will apply the algorithm in (20) to an explanation for the well-formedness of half-lines of OE alliterative verse. Since half-lines mostly contain more than one word, I add a proviso which regulates the mode of constructing the second metrical structure at the postlexical level.

(27) The metrical structure on the second metrical plane is constructed in such a way that the boundaries of a metrical constituent do not cross a word boundary.

Given the algorithm in (20) and the proviso in (27), type (2a) (the abbreviation of the four cases in (29)), which is licensed as well-formed, has the metrical structure represented in (28).

What is characteristic of the metrical structure in (28) is the fact that it contains three feet. This fact, together with the fact that half-lines of OE alliterative verse frequently contain more than three syllables, leads us to formulate a constraint on the well-formedness of half-lines of OE alliterative verse, called here the Minimal Half-Line Constraint (henceforth, MHLC). 8

(30) ** Minimal Half-Line Constraint (MHLC)**
Half-lines of OE alliterative verse must contain at least three feet on the second metrical plane.

3.3. Ill-Formed Half-Lines and Their Explanations

3.3.1. The Ill-Formedness of the Half-Line Type [WORD LX] [WORD HX]

The ill-formedness of type (2b) is captured by the MHLC. The algorithm in (20) and the proviso in (27) produce the metrical structure in (31) for (2b).

(31) . * * *
     (* *) (*)(*)
     [WORD L X] [WORD H X]

This metrical structure at first glance seems to be well-formed, for it contains three feet. However, it is seen to be ill-formed. The reason

8 Given the MHLC in (30), two questions naturally arise. One is the question of whether or not a constraint determining the maximal half-line is operative. However, it is not unreasonable to define only the size of minimal half-lines. It is often the case in phonology that minimal phonological units such as the ‘minimal foot’ and the ‘minimal word,’ rather than maximal phonological units, play significant roles in determining phonological well-formedness.

The other question, which has a more theoretical flavor, is why the minimal half-line contains three feet. Behind this question lies the presupposition that a minimal prosodic unit generally consists of two smaller prosodic units. I do not have any definite answer to this question. At the same time, however, the requirement that half-lines contain at least three feet on the second metrical plane has the possibility of being restated in terms of the number ‘two.’ If we postulate a further prosodic category, generally called a Superfoot, which consists of two feet, on the second metrical plane, three feet are grouped into two Superfeet. In other words, at least three feet are necessary in order to construct two Superfeet. Thus, the number ‘three’ is meaningful in determining the well-formedness of half-lines. To provide a full answer to the question is, however, far beyond the scope of this paper.
for its ill-formedness is due to the succession of three heads.

In (31), the head of a binary foot and the two heads of degenerate feet are adjacent to each other and form a configuration of clash. The second foot is assumed to receive pressure from both the preceding binary foot and the following degenerate foot. Thus, it is not unreasonable to postulate that a clash deletion rule like (32) is operative at the postlexical level on the second metrical plane in OE.9

(32) Clash Deletion

\[
\begin{array}{c c c c c c c c}
* & \rightarrow & . & / & . & * & * \\
(* *) & (*) & (*)
\end{array}
\]

This rule applies to the configuration in (31), as shown in (33).

(33)

\[
\begin{array}{c c c c c c c c}
* & * & * & * & * \rightarrow . & . & * & * \\
(* *) & (*) & (*) & (*) & (*) & (*)
\end{array}
\]

[WORD L X] [WORD H X] \rightarrow [WORD L X] [WORD H X]

The application of rule (32) produces a two-footed structure. The two-footed structure violates the MHLC, which requires that half-lines contain at least three feet. Thus, type (2b) is naturally ill-formed.

3.3.2. The Ill-Formedness of the Half-Line Type [WORD LX] [WORD LX]

The MHLC explains the ill-formedness of type (2c) in a straightforward manner. The algorithm in (20) and the proviso in (27) produce the metrical structure in (34) for (2c).

(34)

\[
\begin{array}{c c c c c c c c}
* & * & * \\
(* *) & (*) & (*)
\end{array}
\]

[WORD L X] [WORD L X]

In (34), two feet are contained. The two-footed structure is clearly ill-formed, for it violates the constraint in (30), which requires that half-lines contain at least three feet. Thus, (2c) is ill-formed.

4. Further Cases

4.1. The Lack of Disyllabic Half-Lines

The first piece of evidence for the MHLC is the fact that disyllabic half-lines do not occur in OE alliterative verse. This fact did not have any theoretical significance in traditional metrics, which builds on the hypothesis that half-lines canonically contain four syllables. However,

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9 For other pieces of evidence for rule (32), see Appendix.
it assumes significance, given Fujiwara's (1990) claim that what is metrically relevant in half-lines is a strong syllable which contains an alliterating consonant and the following weak syllable. Fujiwara's claim implies that two syllables are enough to constitute a half-line. However, no disyllabic half-lines are attested. If Fujiwara's claim is correct, then the question arises of why disyllabic half-lines are not attested.

The MHLC provides an answer to the above-mentioned question. There are four possible combinations of two syllables, as shown in (35).

(35) a. LL b. LH c. HH d. HL

The algorithm in (20) and the proviso in (27) produce the metrical structures in (36) for (35a–d), depending on whether half-lines contain a single word or two.

(36) a. .* b. * * 
   (**) [WORD LL] [WORD L] [WORD L]
c. * * d. * * 
   (**) [WORD LH] [WORD L] [WORD H]
e. * * f. * * 
   [WORD H] [WORD H]
f. * * 
   [WORD H] [WORD H]
g. * * h. * * 
   [WORD H] [WORD L]

Notice that at most two feet are constructed in (36). The proposed constraint requires that there be at least three feet in half-lines. That is, the metrical structures in (36) all violate the constraint. Thus, disyllabic half-lines are avoided. Only if we take the syllable disposition into account can we explain the avoidance of disyllabic half-lines.

4.2. The Lack of Trisyllabic Half-Lines Containing an Unprefixed Disyllabic Word Headed by a Light Syllable

The second piece of evidence for the MHLC comes from the fact that trisyllabic half-lines which contain an unprefixed disyllabic word headed by a light syllable are not attested. There are two possible syllable dispositions of such half-lines.

(37) a. [WORD LX] [WORD X] b. [WORD X] [WORD LX]

As shown in (38), the algorithm in (20) and the proviso in (27) produce
two feet for the half-lines schematized in (37), regardless of the weight of the syllable ‘X.’

(38) a. \[\text{[WORD LX]} [\text{WORD X}] [\text{WORD X}] [\text{WORD LX}]\]
    b. \[\text{[WORD X]} [\text{WORD X}] [\text{WORD HX}]\]

The metrical structures in (38) violate the MHLC, which requires that there be at least three feet in half-lines. Thus, half-lines as schematized in (37) are not attested in OE alliterative verse.¹⁰

4.3. Attested Trisyllabic Half-Lines

The third piece of evidence for the MHLC involves the fact that trisyllabic half-lines such as those in (39) actually occur. The types of half-lines in (39), which are taken to be ill-formed in traditional metrics, occur so frequently that they cannot be disregarded.

(39) a. \[\text{[WORD HX]} [\text{WORD X}]\]
    b. \[\text{[WORD X]} [\text{WORD HX}]\]
    c. \[\text{[WORD X]} [\text{WORD X}] [\text{WORD X}]\]

Typical examples of the half-line types in (39a–c) are given in (40), (41), and (42), respectively.¹¹

(40) a. ālces twā ‘two of each’ (Genesis A 1338b) (= (16a))
    b. holmes hlæst ‘sea’s burden (=fish)’ (Genesis A 1515a)
    c. ōðer Cham ‘the second (is) Ham’ (Genesis A 1241b)

¹⁰ Examples of the half-line types in (37) actually occur if a disyllabic word begins with the stressless prefix ge-. A typical example of this type of half-line is given in (i).

(i) man gepeon \[\text{[WORD H]} [\text{WORD LH}]\] ‘one (shall) thrive’ (Beowulf 25b)

The fact that cases like (i) actually exist seems to issue a challenge to (30), for about 120 cases like (i) are found in the ASPR (Okazaki (1997)). However, their occurrence is due to the peculiarity of the unstressed prefix ge-. In particular, the unstressed prefix, like stress domain suffixes in Halle and Vergnaud’s (1987) sense, constitutes its own foot on the second metrical plane. This implies that examples like (i) contain three feet, as shown in (ii).

(ii) \[\text{(*) (*) (*)}\]
    man gepeon

For further details, see Okazaki (1997).

¹¹ Half-line type (39c) has the possibility of consisting of three light syllables. However, such half-lines are not attested. That is because OE words mostly contain at least one heavy syllable. Thus, the lack of half-lines containing three monosyllabic words consisting of a light syllable is a necessary consequence of one of the essential phonological properties of OE monosyllabic words.
(41) a. nēan bidan ‘wait for (Grendel) near here’
    \textit{(Christ and Satan 528b)} (=\text{(16c)})

b. secg betsta ‘the best man’ \textit{(Beowulf 947b/1759a)}

c. Wāt gearwe ‘(I) know certainly’ \textit{(Genesis A 1098b)}

(42) a. bord wið rond ‘a board with a reinforcing rim’
    \textit{(Beowulf 2673a)}

b. hāt in gān ‘bid (them) come in’
    \textit{(Christ and Satan 386b)} (=\text{(16b)})

c. on flet tēon ‘lead into the floor’ \textit{(Beowulf 1036b)}

The occurrence of the half-line types in (39) follows directly from the MHLC. The three types, as shown in (43), contain three feet on the second metrical plane, as required by the constraint.

\begin{align*}
\text{(43) a.} & \quad (*) (*) (*) (*) (*) (*)
\quad [\text{WORD H X}] [\text{WORD X}] [\text{WORD X}] [\text{WORD H X}] \\
\text{b.} & \quad (*) (*) (*) (*)
\quad [\text{WORD X}] [\text{WORD X}] [\text{WORD X}] \\
\text{c.} & \quad (*) (*) (*)
\quad [\text{WORD X}] [\text{WORD X}] [\text{WORD X}]
\end{align*}

In (43a) and (43b), a word headed by a heavy syllable contains two feet in accordance with the algorithm in (20). Thus, the two types of half-lines contain three feet in accordance with the proviso in (27), which requires that foot boundaries not cross word boundaries. \text{(43c) contains three feet regardless of the weight of the three syllables in accordance with the proviso in (27). Given the MHLC, therefore, the occurrence of the half-line types in (39) ceases to be a puzzle. Their occurrence is a mere result of poets’ obeying the MHLC, which is assumed to have been internalized in their brains.}

One might argue that the second foot in (43) is deleted because of the adjacency of three heads. This argument seems to be valid because the adjacency of heads can serve as a trigger for the deletion of a head. There is, however, every reason for the retention of the second foot in the metrical configuration in (43). Notice that there is a crucial difference between (43) and (32), repeated here as (44), in which the deletion of the second foot is assumed to take place.

\begin{align*}
\text{(44) \quad .} & \quad (*) (*) (*)
\quad (* *)(*)(*)
\end{align*}

The difference is that the second foot in (43) is preceded by a degenerate foot, while the second foot in (44) is preceded by a binary full foot. Binary full feet have more pressure, and are more stable, than degener-
ate feet, so that the second foot in (44), which is degenerate, is easy to delete. However, the first foot in (43), which is degenerate, is assumed not to have enough power to trigger the deletion of an adjacent foot. Thus, the deletion of the second foot is assumed not to take place.\textsuperscript{12}

4.4. Sievers’s Five Types of Basic Half-Lines

The final piece of evidence for the MHLC comes from the reanalysis of Sievers’s (1885, 1893) five types of basic half-lines within the framework proposed here. Sievers (1885, 1893), who constructed one of the most influential theories of OE meter which builds on the hypothesis that half-lines of OE alliterative verse canonically contain four syllables, claims that basic types of half-lines are reduced to five types in accordance with rhythmic patterns produced by the distribution of stress. Typical examples of the five basic half-line types are indicated in (45).

\begin{align*}
(45) & \quad \text{a. Type A (SW|SW): drihtēn hālēnd ‘Christ the Savior’} \\
    & \quad \text{(Christ A 218a)} \\
    & \quad \text{b. Type B (WS|WS): ŝon Hālgā til ‘in the saint’s goodness’} \\
    & \quad \text{(Beowulf 61b)} \\
    & \quad \text{c. Type C (WS|SW): frām blīndnēssē ‘from the blindness’} \\
    & \quad \text{(Elene 299a)} \\
    & \quad \text{d. Type D (S|SWW): māw singēndē ‘a seagull singing’} \\
    & \quad \text{(Seafarer 22a)} \\
    & \quad \text{e. Type E (SWW|S): ēntiscnē hélm ‘the giant’s lord’} \\
    & \quad \text{(Beowulf 2979b)}
\end{align*}

The five basic types of half-lines in (45), as indicated in (46), contain more than three feet on the second metrical plane.

\begin{align*}
(46) & \quad \text{a.} \quad * * * * \quad \text{b.} \quad * * * * \\
    & \quad \text{(*)(*) (*)(*)} \quad \text{(*) (*)(*)(*))} \\
    & \quad \text{drihten hālēnd \quad \text{on Hālgā til}} \\
    & \quad \text{c.} \quad * * * * \quad \text{d.} \quad * * * * \\
    & \quad \text{(*) (*) (*)(*)} \quad \text{(*) (*)(*)(*))} \\
    & \quad \text{frām blīndnēssē \quad māw singēndē}
\end{align*}

\textsuperscript{12} The problem discussed in this subsection is concerned with the particular grammar of OE. The deletion of the head of a metrical constituent does not necessarily obey universal principles. For more evidence for the deletion of the second head in (44), see Appendix.
entiscne helm

The metrical structures in (46) amply show that the well-formedness of Sievers’s five basic half-line types is also guaranteed by the MHLC.\textsuperscript{13}

The result of the reanalysis indicated above has two implications. The first is that the MHLC, which is formulated on the basis of the contrast between type (2a) and types (2b) and (2c), should be seen as a device for determining the well-formedness of a wider range of half-lines. The second implication of the reanalysis is that the rhythmic differences among the five types of half-lines are of no theoretical significance. The rhythmic differences are merely seen as a range of surface rhythmic realizations permitted by the MHLC. What is significant is again the fact that the five basic types of half-lines contain more than two feet on the second metrical plane.

5. Exceptions to the MHLC and Their Explanations

5.1. The Half-Line Type [\emph{LX}] [\emph{HX}]

The first type of exception to the MHLC involves half-lines of type (2b), repeated as (47).

\begin{verbatim}
(47)  [\emph{LX}] [\emph{HX}]
\end{verbatim}

The examples of this sort of exception among the 4102 examples examined are given in (48).

\begin{verbatim}
(48) a. Bana lâfe ‘a remnant murderer’ (Phoenix 575b)
    b. brego Caldea ‘the ruler of Chaldea’
        (Daniel 427b, Azarias 180a)
    c. fæder minum ‘my father’ (Elene 438b, 454b)
    d. flote cwealde ‘... executed the boat’ (Riddle 78 7b)
    e. hæleð Iūđēa ‘a man of Jews’
        (The Descent into Hell 13b)
\end{verbatim}

\textsuperscript{13} One may argue here that a clash deletion rule like (i), which is similar to rule (32), applies to the structure in (46).

\begin{verbatim}
  ( i )  * → . / * * — *  
  (*)(*)(*)(*)
\end{verbatim}

It would be better if rule (i) should apply to cases like those in (46). But whether the rule is operative or not is not crucial here. Most important is the fact that Sievers’s five types of basic half-lines contain four feet.
f. hæleo sniome ‘a man quickly ...’ (Paris Psalter 67.7 2b)
g. naman þinne ‘your names’ (Paris Psalter 73.19 3a)
h. ryne tunglo ‘the course of life’

(The Metres of Boetius 28 3b)
i. suna Nões ‘Noah’s sons’ (Genesis A 1551a)

The half-lines in (48) might falsify the MHLC, for they are expected to be prohibited from occurring. However, they are not at all problematic for it.

Notice that the well-formedness of quadrisyllabic half-lines containing two unprefixed disyllabic words is not determined by a single constraint but by interactions of more than one constraint. Besides the MHLC, a constraint on the rhythmic pattern of half-lines is operative in OE alliterative verse (Fujiwara (1990: 181)). The constraint, called here the Rhythmic Constraint (henceforth, RC), is roughly reformulated as in (49) without distorting its essential substance.¹⁴

(49) Rhythmic Constraint (RC)
The rhythmic pattern SW, where S corresponds to a word containing an alliterating consonant, must be realized in half-lines of OE alliterative verse.

I assume the ranking in (50) between the MHLC in (30) and the RC in (49).

(50) Rhythmic Constraint (49) ⊃ Minimal Half-Line Constraint (30)

¹⁴ The RC in (49) does not seem to determine the well-formedness of half-lines containing function words preceding content words. A typical example of such half-lines is given in (i).

(i) ge æt hám gē on herge ‘both at home and in the army’ (Beowulf 1248a)

This half-line superficially exhibits the rhythmic pattern indicated in (ii).

(ii) W W S W W S W

ge æt hám gē on herge

The words ge, æt, and on do not receive stress, for they are function words. Thus, the rhythmic pattern WSWSW, which is by definition not optimal in OE, seems to be realized.

The presence of half-lines like (i) might at first glance issue a challenge to (49). However, there is the possibility that in half-lines like (i), ge and æt, which are in the initial position of the half-line, are metrically irrelevant, although the mechanism which governs the distribution of function words in OE alliterative verse has not been clarified yet. It is highly likely then that the half-line in (i) does not falsify (49). For this issue, see Fujiwara (1990), McCully (1992), and Suzuki (1995).
This ranking indicates that violations of (49) produce worse results than violations of (30). In other words, violations of (49) must always be avoided. Violations of (30), on the other hand, may result if obeying (30) bring about a violation of (49). The above-mentioned assumption provides explanations for the existence of the seemingly anomalous half-lines in (48). In those half-lines, the first words contain an alliterating consonant. The half-lines, although they violate (30), obey (49). Take (48i) as a sample case. Its long line is indicated in (51).

(51) súna Nões, Sém and Cham ‘Noah’s sons, Shem and Ham’

(51) súna Nões, Sém and Cham ‘Noah’s sons, Shem and Ham’

This line exhibits the alliteration of /s/, and the a-verse exhibits the rhythmic pattern SW, as shown in (52).

(52) S W
suna Nões

The inversion of the word order, which is logically possible, results in a violation of the RC. That is because the rhythmic pattern WS is realized, as shown in (53).

(53) W S
*Nões suna

Since (51) exhibits the alliteration of /s/, suna is, even if the word order is changed, stronger than Nões. However, the rhythmic pattern in (53) violates the RC. Thus, example (48i) begins with a word headed by a light syllable.

15 The symbol ‘⊃’ means that the element on its left is more important than that on its right.

The MHLC in (30) and the RC in (49) are both language-specific in nature. They are thus different from such entities as Prince and Smolensky’s (1993) universal constraints and Burzio’s (1994) parameterized constraints on possible feet. The introduction of the constraint ranking in (50) into a theory of OE meter does not mean that language-specific constraints are to be introduced into Optimality Theory, where only ranked universal constraints are assumed to be operative in determining phonological well-formedness.

16 Recently, Hanson and Kiparsky (1996) have proposed a parametric theory of meter, which, building mainly on the meter of iambic verse in Finnish, makes crucial use of universal principles in Optimality-Theoretic terms. However, they exclude the meter of OE alliterative verse from consideration. Thus, it is not clear whether or not the well-formedness of half-lines of OE alliterative verse can be accounted for within their parametric theory of meter.
The same line of reasoning can be provided for the other cases in (48) as well.

5.2. An Exceptional Half-Line Containing Self

The second type of exception to the MHLC is a half-line containing self 'self' such as (54).

(54) sunu selfes ‘the son himself’ ([WORD LL] [WORD HL])

This example becomes two-footed through the application of Clash Deletion (32), as shown in (55).

(55) . * * * . . * *

sunu self es → sunu selfes

This half-line is exceptional in the following respects. As Fujiwara (1990: 232) points out, the word self exhibits the same metrical behavior as nouns in OE alliterative verse. In addition, the OE self, as indicated in (56) and (57), either precedes or follows a noun in verse.

(56) pa segnade selfa drihten ‘when the king himself made the sign of the cross’ (Genesis A 1390a)

(57) swa he self gecwæð ‘just as he himself said’ (Genesis A 2761a)

Thus, the phrase selfes sunu, which obeys the two constraints on half-lines and a syntactic rule in OE, is logically allowed to occur.

It follows, then, that the occurrence of example (54) remains a puzzle at the present stage. Notice, however, that the example does not seem to pose any problem for the MHLC. The reason is that (54) is the only example that is found among the 4102 half-lines examined. The example has the possibility of resulting from artificial errors like scribal errors.

5.3. The Half-Line Type [WORD LX] [WORD LX]

The last type of exception involves half-line type (2c). Two examples, given in (58), are found among the 4102 examples examined.

(58) a. godes sunu ‘a son of God’ (Christ and Satan 526b)

b. labal noma ‘Jubal (is) the name’ (Genesis A 1078a)

These examples seem to be problematic for the proposals in this paper, for they violate the MHLC. They contain only two feet on the second metrical plane, as shown in (59).
I argue, however, that examples like those in (58) do not serve as counterexamples to the MHLC for the following reasons. The first reason is that the examples in (58), although they violate the MHLC, obey the RC, whose violations must always be avoided. They exhibit the alliteration of /g/ and /y/, respectively, and exhibit the optimal rhythmic pattern SW.

The second reason is that the frequency of occurrence of examples like those in (58) is low. Among the 4102 half-lines examined, only two examples of this type are found. Thus, the examples also have the possibility of resulting from artificial errors.

The third reason is that (58b) contains a foreign proper name. Notice that foreign proper names exhibit exceptional metrical behavior in OE alliterative verse. For example, quadrisyllabic foreign proper names consisting only of light syllables occur as a single half-line, as shown in (60).

(60) Iuliana ‘Juliana’ (LLLL)

(Juliana 96a, 106a, 131b, 148b, 167a, 316b, 540a, 628b)

The reason for this peculiar prosodic behavior has not been completely clarified. But examples like (60) serve to indicate that example (58b) has an exceptional status.

6. Previous Studies

Finally, I will examine whether or not recent dominant generative-phonological studies on OE meter are able to distinguish half-line type (2a) from half-line types (2b) and (2c).


Fujiwara (1990), pointing out problems with both traditional and generative-phonological metrics, proposes that what is metrically significant is a strong syllable containing an alliterating consonant and a weak syllable following the strong syllable. In fact, half-line types of OE alliterative verse are reduced to two and only two types, as indicated in (61) (Fujiwara (1990: 181)).
Although Fujiwara’s framework is effective in explaining the rare occurrence of types (2b) and (2c), it cannot distinguish type (2a) from types (2b) and (2c). Given the two half-line types in (61), the half-line types in (2), where the initial word contains an alliterating consonant, have exactly the same metrical structure, as roughly shown in (62).

(62) a. S W
    [WORD HX] [WORD LX] (=2a))
b. S W
    [WORD LX] [WORD HX] (=2b))
c. S W
    [WORD LX] [WORD LX] (=2c))

6.2. Moraic Accounts


Drescher and Lahiri (1991) and Tanaka (1992) hypothesize that OE is a moraic language with a single metrical plane, and propose their respective ideas which are formulated for an account of OE phonological phenomena including the well-formedness of half-lines of alliterative verse. Their ideas, aside from technical differences, produce the same effect, as far as the well-formedness of half-lines is concerned. The crux of their proposals is restated as in (63) without distorting their essential substance.

(63) From left to right, construct binary, quantity-sensitive left headed feet whose left element contains at least two moras. (Heavy syllables and light syllables are assumed to contain two moras and one mora, respectively.)

(63) produces the metrical structures for (2a), (2b), and (2c) in (64), (65), and (66), respectively, where the minimum and neutral representation is adopted (m=mora).
In (64)–(66), the number of feet and the disposition of feet vary from variant to variant. This means that even if the moraic feet are effective in capturing OE stress and segmental phenomena, as demonstrated by Dresher and Lahiri (1991) and Tanaka (1992), they cannot adequately distinguish type (2a) from types (2b) and (2c).

6.2.2. Gąsiorowski (1997)

Gąsiorowski (1997), who also argues that OE is a moraic language with a single metrical plane, claims that the presence and the absence of half-line types are regulated by the number of moras and the disposition of feet. In particular, Gąsiorowski (1997: 117) formulates a template for half-lines of OE alliterative verse in moraic terms, a relevant part of which is restated as in (67).

(67) If a half-line consists of two unprefixed content words, both words canonically contain three moras. (Segments defined
as moras include vowels and consonants immediately following a short vowel in word medial position.)

Template (67), which in effect requires that canonical half-lines contain six moras, correctly predicts the lack, or the rarity, of half-line type (2c). It contains only four moras, as shown in (68).

   (68) a. [WORD LH] [WORD LH] = 2 moras + 2 moras
   b. [WORD LH] [WORD LL] = 2 moras + 2 moras
   c. [WORD LL] [WORD LH] = 2 moras + 2 moras
   d. [WORD LL] [WORD LL] = 2 moras + 2 moras

Template (67), however, cannot provide a clear-cut explanation for the fact that half-line type (2a) frequently occurs in OE alliterative verse. The template predicts that type (2a) does not occur, for, as shown in (69), the type contains five moras, regardless of the weight of the syllable ‘X.’

   (69) [WORD HX] [WORD LX] = 3 moras + 2 moras

However, examples of the type, as given in (70), actually occur in Beowulf, which Gąsiorowski selects as the only basis for his theory of OE meter.

   (70) Hrunting nama ‘Hrunting (is) the name (of the sword)’
   (Beowulf 1457b)

Gąsiorowski (1997: 116) observes that examples like (70) must be considered irregular. However, type (2a) occurs so frequently that they cannot be considered irregular (cf. Hutcheson (1995: 84–87)). Thus, template (67) cannot provide any adequate explanation for the frequent occurrence of type (2a).

Finally, template (67) cannot adequately capture the contrast between type (2b), schematized in (71), and the half-lines in (41), schematized and repeated in (72). Both types of half-lines have the same moraic composition. They consist of a bimoraic and a trimoraic word. Thus, the template predicts that both types of half-lines are rarely attested. However, they show a sharp distributional contrast with each other. The former type rarely occurs, but the latter type often does.

   (71) [WORD LX] [WORD HX] = 2 moras + 3 moras
   (72) [WORD H] [WORD HX] = 2 moras + 3 moras
   a. néan bidan (=41a))
   b. secg betsta (=41b))
   c. Wät gearwe (=41c))

Template (67) does not distinguish the latter type from the former
It follows, then, that the template that Gąsiorowski (1997) proposes does not provide any bases for explaining the contrast between type (2a) and types (2b) and (2c).17


Halle, O’Neil and Vergnaud (1993) (henceforth, HOV) provide arguments against Dresher and Lahiri’s (1991) moraic feet. Thus, they claim that the well-formedness of half-lines can be captured, without reference to moraic structure, by the assumptions in (73) (p. 530) and the proviso in (74) (p. 536).

\[(73)\]
\[
\begin{align*}
\text{a. Stressable elements are head vowels of syllables and the immediately following rime segment, if any.} \\
\text{b. Construct binary quantity-sensitive left-headed feet from left to right.}
\end{align*}
\]

\[(74)\]
\[
\text{Metrically relevant are the head vowels of syllables and the immediately following rime segment, if any; except that in a heavy syllable at the end of a half-line it is optional whether or not the rime-final segment is counted as metrically relevant.}
\]

HOV’s proposed feet, although it is effective for word-level phonology, does not distinguish (2a) from (2b, c), either. (73) and (74) produce the metrical structures for (2a), (2b), and (2c), as in (75), (76), and (77), respectively, where the heads of constituents are omitted for their irrelevance.

\[(75)\]
\[
\begin{align*}
\text{a. (** (** (** (** [WORD H H] [WORD L H]}
\text{b. (** (** (** [WORD H H] [WORD LL]}
\text{c. (** (* (** [WORD H L] [WORD L H]}
\text{d. (** (* [WORD H L] [WORD LL]}
\end{align*}
\]

17 McCully (1992) also proposes a template for half-lines of OE alliterative verse. However, McCully makes crucial use of resolution, which, as briefly mentioned in
The metrical structures in (75)–(77) clearly show that HOV’s proposed feet cannot distinguish type (2a) from types (2b) and (2c). The number and disposition of feet in the three half-line types under discussion vary from variant to variant.

7. Concluding Remarks

In this paper, I have demonstrated that the disposition of syllables, as well as the distribution of stress, regulates the well-formedness of half-lines of OE alliterative verse. In fact, I have proposed a constraint, called the Minimal Half-Line Constraint, which requires that a half-line contain at least three feet on the second metrical plane. The introduction of the constraint into the metrics of OE alliterative verse enables us to provide principled explanations for prima facie peculiar facts about the occurrence and the nonoccurrence of several types of half-lines, which have been overlooked for the lack of a clear angle of factual observation in the previous literature on OE metrics. The introduction of the constraint also implies the usefulness and the validity of section 2.3, does not have any rigid empirical grounds. Thus, McCully’s proposed template is problematic regardless of whether or not it captures facts about the well-formedness of half-lines.
of postulating the second metrical plane in OE and the validity of the hypothesis that the syllable, even if the mora plays some important role(s), plays crucial roles in OE phonology.18

Appendix: Evidence for Clash Deletion on the Second Metrical Plane in OE

In section 3.3.1, I have proposed Clash Deletion (32), repeated below, to account for the rare occurrence of half-line type (2b), repeated here as (78).

\[(32)\text{ Clash Deletion} \quad * \rightarrow . / . * _ * \]
\[(* *) (* ) (* ) \]

\[(78) \text{ [WORD LX] [WORD HX] } (=2b)\]

Rule (32) at first glance seems to be ad hoc, because I have not adduced any piece of independent evidence for it. In this appendix, I will show that the rule is not ad hoc. In particular, it is indispensable for an explanation for the rare occurrence of other types of half-lines as well.

Evidence for rule (32) comes from facts about the distribution of words like those in (79) in OE alliterative verse.

\[(79) \text{ a. [WORD LXX]} \]
\[\text{ b. [WORD HLXX]} \]
\[\text{ c. [WORD LXHX]} \]

Rule (32) predicts that the half-line types in (80) occur, whereas those in (81) do not.

\[(80) \text{ a. [WORD HLXX]} \quad \text{ b. [WORD X] [WORD LXX]} \]
\[\text{ (81) a. *[WORD LXHX]} \quad \text{ b. *[WORD LXX] [WORD X]} \]

The half-line types in (80), which have the metrical structures in (82) in accordance with (20) and (27), do not meet the structural description of rule (32) and contains three feet on the second metrical plane. They

18 I do not intend to say that the MHLC is the only constraint that regulates the well-formedness of half-lines. It is highly likely that other constraints which regulate the well-formedness of half-lines are operative. The complete clarification of poorly understood constraint interactions in determining the well-formedness of half-lines is, however, beyond the scope of this paper and must be left for future research.
are licensed as well-formed by the MHLC in (30).

(82) a. * * * * b. * * * *
   \[\text{[WORD H LX X]} \quad \text{[WORD X]} \quad \text{[WORD LX X]}\]

By contrast, the half-line types in (81), as shown in (83), meet the structural description of rule (32) and are turned into two-footed half-lines through its application. The derived structures violate (30).

(83) a. * * * * b. * * * *
   \[\text{[WORD LX H X]} \quad \text{[WORD LX H X]}\]

The above-mentioned prediction is in fact borne out. In the first place, the half-line types in (80) are actually observed in OE alliterative verse. Typical cases are given below.

(84) a. andswarede ‘(He) answered’ (Genesis A 872a)
   b. eorðcyninges ‘the king’s’ (Beowulf 1155b)
   c. mismicelra ‘of varying sizes’ (Exodus 373a)
   d. reordberendum ‘of the men’ (Dream of the Rood 89b)
   e. þeodecyninga ‘kings’ (Beowulf 2a)

(85) a. feorh cyninges ‘the king’s life’ (Beowulf 1210b)
   b. folc Cananēa ‘the people of Canaan’ (Genesis A 1909a)
   c. fyll cyninges ‘the king’s death’ (Beowulf 2912b)
   d. sār wanian ‘(shall) diminish the pain’ (Guthlac B 1073b)
   e. wroht wriðian ‘to flourish the sin’ (Genesis A 1903a)

The occurrence of half-lines like those in (84) and (85) is due to the fact that they do not meet the structural description of Clash Deletion (32) and contains three feet on the second metrical plane.

The lack, or the rare occurrence, of the half-line types in (81) is exemplified by a statistical survey of the half-line types in the ASPR. I examined in the ASPR the distribution of trisyllabic words beginning with a light syllable in (86) and trisyllabic inflected forms of disyllabic words beginning with a light syllable and ending in a consonant in (87). (The citation forms of both classes of words are also listed in the glossaries of Klaeber’s edition of Beowulf and Doane’s edition of Genesis A.)

(86) a. æðele ‘excellent’, æðeling ‘prince’, æðelu ‘nobility’
   b. berian ‘to make bare’, berigean (=berian), bereden
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(a pret pl of berian), bysigu ‘affliction’
c. culufre ‘pigeon’
d. eafora ‘son’, egesa ‘fear’
e. ferian ‘to go’, feredest (pres 2 sg of ferian), feriap (pres pl of ferian), ferigan (=ferian), ferigean (=ferian), ferede (pret 1, 3 sg of ferian), feredon (pret pl of ferian)
f. gædeling ‘kinsman’, gifede ‘given’
g. hatian ‘to be hot’, herian ‘to praise’, herigan (=herian), herige (pres 1 sg of herian) (=herie), heriap (pres pl of herian), herigað (=heriað), herigeað (=heriað), herede (pret 1, 3 sg of herian), heredon (pret pl of herian), herigen (subj pl of herian) (=herien), hwæþere ‘still’
h. lifian ‘to live’, lufian ‘to love’, lufie (pres 1 sg of lufian), lufige (=lufie), lufiað (pres pl of lufian), lufode (pres 1, 3 sg of lufian), lufodon (pret pl of lufian), lufien (subj pl of lufian)
i. nerian ‘to save’, nerede (pret 1, 3 sg of nerian)
j. scirian ‘to ordain’, scyrian (=scirian), scyrede (pret 1, 3 sg of scyrian), swerian ‘to swear’, swerigean (=swerian), sweriað (pres pl of swerian)
k. tiðian ‘to give’, tiðiað (imp pl of tiðian)
l. ufera ‘later’, ufara (=ufera)
m. wanian ‘to diminish’, wanigean (=wanian), wanige (pres 1 sg of wanian), waniað (pres pl of wanian), wanode (pret 1, 3 sg of wanian), warian ‘to guard’, wariað (pres pl of warian), warigeað (=wariað), weotena ‘wise man’, werian ‘to guard’, werigean (=werian), werie (pres 1 sg of werian), weriað (pres pl of werian), werede (pret 1, 3 sg of werian), weredon (pret pl of werian), wunian ‘to inhabit’, wunigean (=wunian), wunodest (pres 2 sg of wunian), wunode (pret 1, 3 sg of wunian), wunude (=wunode), wunodon (pret pl of wunian)

(87) a. duguða (gen pl of duguð ‘people’), duguðe (dat sg of duguð), duguðum (dat pl of duguð), dugeda (=duguða), dugedæ (=duguðe), dugedæm (=duguðum), dugeda (=duguða), dugode (=duguðe), dugodæm (=duguðum)
b. fædera (gen pl of fæder ‘father’), fæderas (nom/acc pl of fæder), fæderes (gen sg of fæder), fæderum (dat pl of fæder), færoðe (dat sg of faroð ‘sea’), fugolas (nom/acc
pl of fugol 'bird'), fugule (dat sg of fugul) (=fugol), fugelas (nom/acc sg of fugel) (=fugol), fugeles (gen sg of fugel) (=fugol)
c. gafole (dat sg of gafol 'tribute'), gafoles (gen sg of gafol), geogoðe (dat sg of geogoð 'the state of youth'), geoguðe (=geogoðe), gomene (dat sg of gomen 'joy'), gomenes (gen sg of gomen), gamene (=gomene), gamenes (=gomenes)
d. hæleða (gen pl of hæleð 'hero'), hæleðas (nom/acc pl of hæleð), hæleðe (dat sg of hæleð), hæleðum (dat pl of hæleð), hæliðum (=hæleðum), heofona (gen pl of heofon 'heaven'), heofonas (nom/acc pl of heofon), heofones (gen sg of heofon), heofonum (dat pl of heofon), heofona (=heofona), heofenas (=heofonas), heofenes (=heofones), heofenum (=heofonum)
e. idesa (gen pl of ides 'woman'), idese (dat sg of ides), idesum (dat pl of ides)
f. legere (dat sg of leger 'place of lying')
g. mægena (gen pl of mægen 'strength'), mægene (dat sg of mægen), mægenes (gen sg of mægen), micela (nom/acc pl fem of micel 'much'), micelan (nom/acc pl masc/neut/fem of micel) (weak declension), micle (acc sg fem of micel), micle (inst sg masc/neut of micel), mycelra (gen pl masc/neut/fem of micel), mycelan (=micelan), mycele (=micle), mycelra (=micelra), mycelum (=micelum), monige (inst sg masc/neut/fem of monig 'many'), moniges (gen sg masc/neut/fem of monig), monigne (acc sg masc of monig), monigra (gen pl masc/neut/fem of monig), monigum (dat/inst pl masc/neut/fem of monig)
h. nacodan (nom/acc pl masc/neut/fem of nacod 'nude'), nacode (inst sg masc/neut of nacod), neowolne (acc sg masc of neowol 'steep'), neowulne (=neowolne)
i. openan (nom/acc pl masc/neut/fem of open 'open') (weak declension), opene (acc sg fem, inst sg masc/neut of open), openum (dat sg masc/neut of open)
j. rodora (gen pl of rodor 'heaven'), rodoras (nom/acc pl of rodor), rodore (dat sg of rodor), rodores (gen sg of rodor), rodorum (dat pl of rodor), rodera (=rodora),
roderas (=rodoras), rodere (=rodore), roderes (=rodores), roderum (=rodorum)

k. weliga (nom/acc pl fem of welig ‘wealthy’), weligan (nom/acc masc/neut/fem of welig) (weak declension), welige (acc sg fem of welig), weligne (acc sg masc of welig), weroda (gen pl of werod ‘host’), werode (dat sg of werod), werodas (nom/acc pl of werod), werodum (dat pl of werod)

l. yfela (nom/acc pl fem of yfel ‘evil’), yfelan (nom/acc pl masc/neut/fem of yfel) (weak declension), yfele (acc sg fem of yfel), yfeles (gen sg masc/neut of yfel), yfelne (acc sg masc of yfel), yfelum (dat sg masc/neut of yfel)

The result of the survey is that only one example of half-line type (81b) is found (Genesis A 2518b). This implies that the half-line types in (81) are ill-formed, as required by the MHLC. They meet the structural description of rule (32) and are transformed into illegitimate two-footed half-lines through the application of the rule.

It is now clear that the difference between (80) and (81) is attributed to the application of rule (32). This implies that rule (32), which is originally formulated for an account of the rare occurrence of half-line type (2b), is also indispensable for an account of the rare occurrence of the half-line types in (81). In fact, the rare occurrence of the types is accounted for only by rule (32). It follows, then, that rule (32) is not at all ad hoc. It provides a straightforward account of the rarity of some classes of half-line types.

Finally, I will provide an explanation for one exceptional case, given in (88).

(88) tīðiað mē ‘give (imp) me’ (Genesis A 2518b)

This example, although it violates the MHLC in (30), obeys the RC in (49). Its long line exhibits the alliteration of /t/, as shown in (89).

(89) trēowe and hyldo tīðiað mē ‘Give me grace and favor’

(Genesis A 2518)

Notice that a half-line like (90) is logically allowed to occur. It observes the MHLC. However, it cannot occur in phonological contexts like that in (89). It exhibits the rhythmic pattern WS, which is prohibited by the RC.

(90) W S
    * mē tīðiað

The reason for the existence of examples like (88) is again that obeying
the MHLC results in a violation of the RC, whose violations must be avoided.

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