A Pebble Smoothed by Tradition: Lines 607-61 of *Beowulf* as a Formulaic Set-piece

Michael D.C. Drout and Leah Smith

In lines 607-61 of *Beowulf*, just before the battle between the hero and the monster Grendel, the Danes and visiting Geats celebrate their comradeship in the great hall of Heorot.[1] While venerable Hrothgar, king of the Danes, presides, Queen Wealhtheow, bedecked with gold, carries the ornamented cup of fellowship to each warrior in turn, old and young alike.[2] The passage, which for convenience we will call "Wealhtheow's cup-bearing," is one of several depictions in *Beowulf* of the social happiness that Anglo-Saxon poetry often calls *dream* ("joy") and has been described as "the most detailed description we possess of the offering of the ceremonial drinking cup to an honored guest in early Germanic society" (Fulk, Bjork, and Niles 2008:155). But in contrast to Wealhtheow's later appearance in the poem (lines 1168b-231)—in which she thwarts Hrothgar's attempted adoption of Beowulf, promotes the king's nephew Hrothulf as a protector for her sons, and gives the legendary Brosing necklace to the hero— nothing much happens. Jeff Opland (1976:446-57) does not include the passage in his list of "joy in the hall" type-scenes.

[1] Corresponding author: mdrout@wheatoncollege.edu

Yet new computer-assisted "lexomic" methods of analysis[3] show that these seemingly banal lines contain some of the highest concentrations of unusual lexical, metrical, grammatical, and formulaic features in *Beowulf*, and the overall distribution of vocabulary in the passage is so distinctive that it affects computer-assisted cluster analysis to a greater extent than any other similar-sized segment of the poem. In the discussion that follows, we introduce several techniques of lexomic analysis and explain how these approaches identify qualitative differences between lines 607-61 and the rest of the poem. We then show how all of these differences are best explained by positing that the passage has a source different from its surrounding textual matrix, a source that was most likely not a written text, but a traditional type-scene.[4] A close reading of the lines in the light of recent approaches to the formula in Old English explains how the passage, so well polished by tradition that it preserved low-level linguistic features to almost the same degree as a written source would, could nevertheless have been easily adapted to other narrative contexts.

Lexomic Methods

Lexomic methods combine computer-assisted statistical analyses with traditional literary approaches such as close reading, philological analysis, source study, and cultural interpretation. The specific techniques employed in this paper fall into two categories: hierarchical clustering, which uses the mathematical calculation of similarity and difference to create groups of texts or segments in which the members inside the group share more features than those outside, and rolling-window analysis, which produces a visual representation of the average frequency of particular words, letters or phrases within whole texts, allowing us to identify much smaller features within them.

In cluster analysis, we determine the relative frequencies of every word in a group of texts or text-segments, calculate the differences among these relative frequencies, square the resulting numbers, and uses the square-root of the sums of the differences to find what is called the "Euclidian distance" between each pair of segments. From this information, the Lexos software[5] uses the free implementation of hierarchical, agglomerative clustering to group the segments, without pre-specifying the number of groups to be created, by clustering together those with the smallest overall differences in word frequencies (these have the most words in common) in a branching diagram, or *dendrogram*, that visually represents the relative similarities

---

[3] Coined by Betsey Dexter Dyer (2002) the term "lexomics," modeled on "genomics," refers to computer-assisted analytical approaches that are focused on words rather than genes.

[4] Although Albert Lord (1960:68) described "groups of ideas regularly used in telling a tale in the formulaic style of traditional song" as "themes," the terminology used in scholarship on oral tradition has been unsettled, with "commonplace," "type-scene," and "cluster" being used interchangeably with "theme." See Fry (1968) and Foley (1985 and 1991:17).

[5] The software is available for free online use at http://lexos.wheatoncollege.edu. It can be downloaded through the Lexomics main page: http://lexomics.wheatoncollege.edu.

of the segments.[6] Branches of the dendrogram are called *clades,* the similarity of which is represented by the vertical distance between the branch-points: the shorter the line, the more similar the clades. Because variations in the distribution of very common words (most often *function words* such as conjunctions, prepositions, and pronouns), more strongly influence dendrogram geometry than the presence or absence of rare words in particular segments, cluster analysis can often identify broad patterns of vocabulary distribution that are not always evident to the unaided eye. The technique has proven to be particularly useful for identifying subsections of texts whose sources or authors are different from those of the main body of the text.[7]

Rolling-window analysis allows us to represent visually the distribution of individual phrases, words, or letters throughout an entire text. We begin by selecting a "window" size, w, which is substantially smaller than the total number of units, T, in the text to be examined. The first window begins with the first unit and ends with the wth unit of the text. We count the number of features of interest, n, found in this first window and then divide by the window size in units, giving us an average of the number of features ($p=n/w$). From this information we produce a data pair comprised of the ordinal number of the window, k, and the value of p (k, p_k), so for the first window, where $k=1$, the resulting data-pair is ($1, p_1$). We then shift the window one unit towards the end of the text by incrementing both the initial and final units in the window by 1 ($k+1, w+1$), tabulate the number of times the feature of interest appears in this shifted window, and calculate $p_2=n_2/w$, producing a new pair of data-points, ($2, p_2$).[8] This process is repeated, moving the window through the text until the edge of the window meets the end of the

---

[6] In our lexomic analyses the number of words is quite large, so it is difficult for the distributions of any single word to make two segments highly similar or dissimilar. A great deal of commonality (or difference) in the proportionate use of a wide array of words is required to create significant similarity (or distance) between two texts. See the discussion in Drout et al. (2011:311-15).

[7] Cluster analysis indicates that lines 235-851 of the Old English *Genesis* have a different source from the rest of that poem—a conclusion consistent with Eduard Sievers' deduction from a century and a half ago but using completely different methodology (Drout et al. 2011:315-19). The methods also correctly identified the parallel lines of the Anglo-Saxon poems *Azarias* and *Daniel* and further supported the conclusion that portions of *Daniel* are influenced by Latin canticles (Drout et al. 2011a:307-15) and a lost Old English poem (Drout and Chauvet 2015). Cluster analysis also correctly identified the divisions of the three *Christ* and two *Guthlac* poems of the Exeter Book and clustered together the signed poems of Cynewulf (Drout et al. 2011:319-35). The methods were also able to distinguish between the sections of the Old English version of Orosius's *Historiae adversus paganos* translated directly from the primary Latin source and those that were not, and to differentiate between the sections of the *Old English Penitential* based on an Anglo-Saxon source and those parts translated from Latin (Boyd et al. 2014 [2012]). Cluster analysis has also shed new light on the textual history of *Guthlac A* (Downey et al. 2012), and has been successfully used in the analysis of Old Norse prose texts (Berger and Drout 2015) and medieval Latin poetry and prose (Downey et al. 2014), and *Beowulf* (Drout et al. 2016).

[8] If we are using a window of 500 words, the first window is made up of words 1-500, the second of words 2-501, the third of words 3-502, and so on.

text (that is, where k+w=T), producing a set of k coordinates in the form (k, pk).[9] The graph produced by plotting the total set of coordinates, which is often much easier to interpret than the same data presented in tabular form, not only indicates the simple presence of features but also highlights clusters of elements of interest in a way that a simple inspection often does not.[10] Because the window moves continuously through the entire text, using a rolling average eliminates the problem of statistical artifacts produced by the placement of segment boundaries. Abrupt changes in the rolling averages or ratios of textual features are frequently associated with changes in authorship, source or scribe (Drout and Chauvet 2015).

Cluster Analysis

Our attention was initially drawn to Wealhtheow's cup-bearing when we noticed that this passage has a peculiarly strong effect on the results of cluster analysis. *Beowulf*'s narrative structure is complex and episodic, and there is no scholarly consensus as to the precise divisions of large-scale narrative units.[11] We were therefore obliged to experiment with many different segmentations, hoping to identify relationships among parts of the poem that were not disrupted by small shifts in segment boundaries (Drout et al. 2016). One of the most surprising but consistent results of this painstaking analysis was the strong influence of lines 607-61 on overall dendrogram geometry:

---

[9] Formally, the value of p at any location k is equal to:

$$p_k = \left| \left(\sum_{i=k}^{k-w} n \right) \div (w) \right|, k + w \leq T$$

where k is the ordinal number of the first unit in the window
w is the size of the window in units
n is the total number of features of interest in the window
T is the total number of units in the text

[10] When investigating the complementary distributions of textual elements that are mutually exclusive (such as þ and ð in the Old English poetic codices), it is useful to calculate the continuously rolling ratio of the two features to each other rather than plotting two separate averages. We therefore calculate the value at a given point by dividing the number of appearances of one feature by the sum of both features in the rolling window.

[11] However, there is a surprising degree of consensus about the boundaries of the smaller, low-level narrative units (Kisor 2009).

Fig. 1. Dendrogram of the A-Scribe Portion of *Beowulf* when the poem is divided into segments. "Wealhtheow's Cup-Bearing" is included in Segment C.

The section of *Beowulf* that we labeled Segment C—lines 499-606, which some scholars have called the "Unferth Intermezzo"[12]—almost always appears in a single-leafed clade, separate from all other segments of the portion of the poem copied by the A-Scribe.[13] However, as can be seen in Fig. 1, if we include lines 607-61 in this segment, it then clusters with Segments E (lines 837-1062), H (1306b-491 and 1623-86), B (189-498) and I (1687-919). Similarly, displacing lines 607-61 into Segment A (1-188) or D (662-836) disrupts the normal placement of those segments by causing whichever segment includes lines 607-61 to move towards the E-H-B-I grouping. Placing Wealhtheow's cup-bearing into H, B, or I keeps this four-segment cluster intact but causes whichever segment contains lines 607-61 to link to Segment E. Deleting the

---

[12] Fulk, Bjork, and Niles (2008:148) adopt this nomenclature for the episode; the name was originally coined by Adrien Bonjour (1965:19-20).

[13] The *Beowulf* manuscript was produced by two scribes, A, who copied lines 1-1939, and B, who copied the rest of the poem. Consistent differences in the spelling and orthography of the two scribes can interfere with cluster analysis, so for the purposes of the current argument, we focus only on the A-scribe portion of the poem. The whole-poem cluster analysis (which requires a normalized text) is not different with regard to these particular results (Drout et al. 2016:42-47).

lines entirely from the poem results in the dendrogram having the same geometry as that shown in Fig. 2 (in which lines 607-61 are included in Segment E). We therefore conclude that the vocabulary of Wealhtheow's cup-bearing and that of Segment E are most similar, since the placement of the lines in this segment is the only arrangement that does not disrupt dendrogram geometry by creating a strong similarity between whichever segment contains the passage and segment E.

Although surprising, this phenomenon might be explained by the similarity in content of lines 607-61 and Segment E, which is made up primarily of Beowulf's and Hrothgar's exchange of formalities and the depiction of gift-giving and happiness in the hall of Heorot. Wealhtheow's cup-bearing thus shares a discourse with Segment E, and, to a slightly lesser degree, with the other sections of the poem that are focused on formal social interactions, such as arrivals and departures, entry into a hall, and the exchange of promises and gifts (Segments B, H, and I). However, the degree to which the placement of the passage affects dendrogram geometry is unique in *Beowulf*; no other short passage in the poem shifts the clustering of segments as much as lines 607-61:[14]
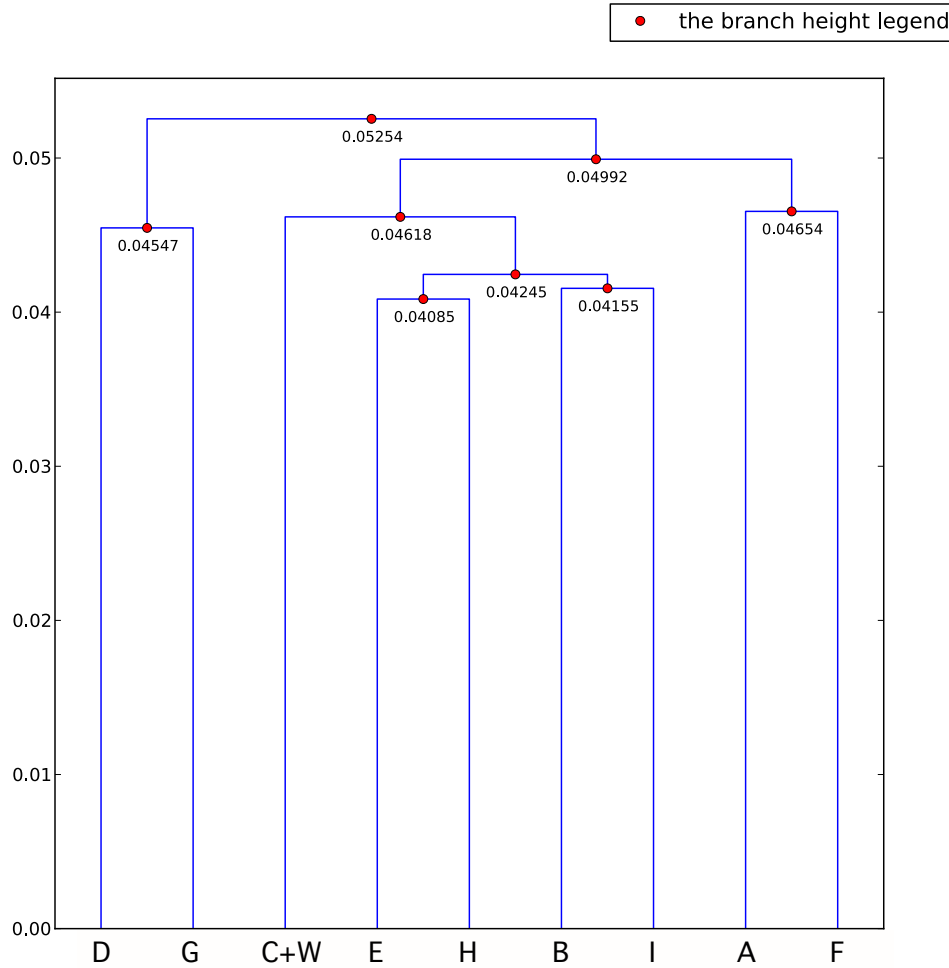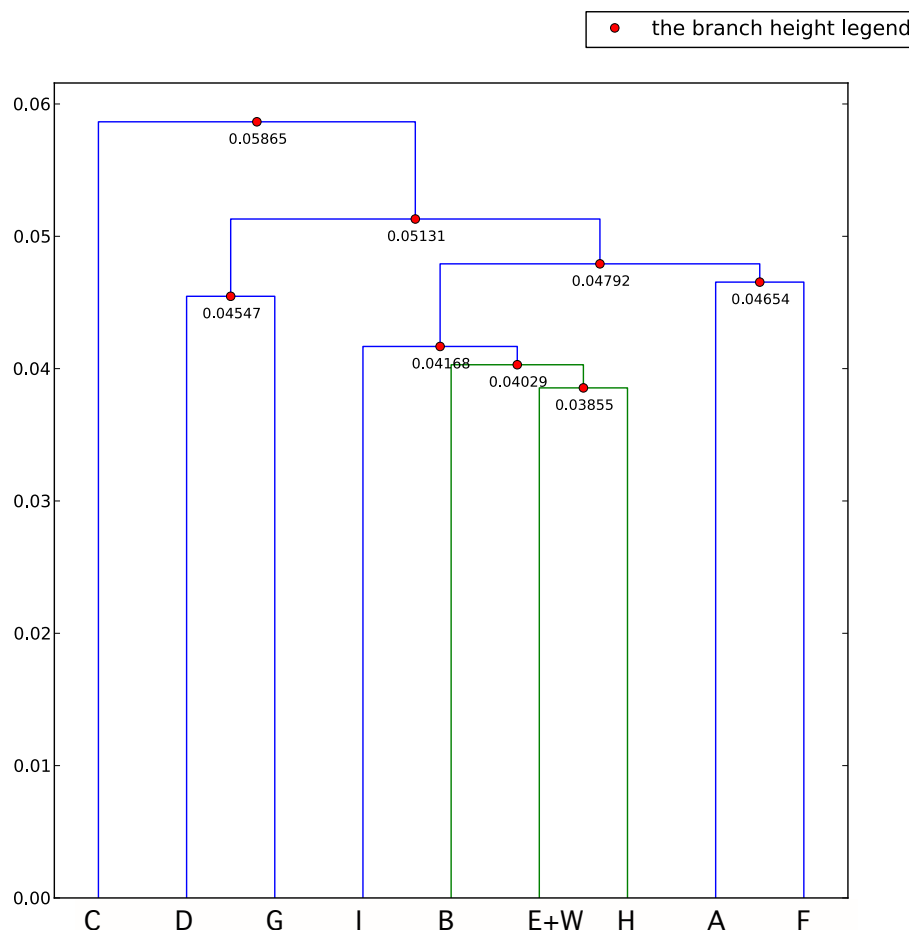

Fig. 2: Dendrogram of the A-Scribe Portion of *Beowulf* when the poem is divided into segments. "Wealhtheow's Cup-Bearing" is moved to segment E.

[14] The effect on the B-scribe portion of the poem of lines 2860-91, in which Wiglaf criticizes the cowardly retainers after Beowulf's death, is similar but much less pronounced (Drout et al. 2016:37-41).

As can be seen in Table 1, Wealhtheow's cup-bearing is unusual in that six of its fifteen most frequently used words are not function words: *word*, ("word") *Beowulf*, *Beowulfe*, *cwen*, ("queen") and *ful* ("cup") are nouns, and *eode* ("went") and *gelyfde* ("believed" or "trusted"), verbs.[15] And while each other segment has at least three pronouns in its top fifteen words, only *ic* appears among the most frequently used words in lines 607-61. Although it is highly likely that some of these differences are a result of the passage's small size, in ten other randomly selected passages of similar length, no fewer than fourteen of the fifteen most frequently occurring words are function words:

A (lines 1-188)		B (189-455)		C (456-606)		D (662-836)		E (837-1062)	
word	frequency	word	frequency	word	frequency	word	frequency	word	frequency
ond	0.028	ic	0.021	on	0.033	he	0.029	þæt	0.021
wæs	0.022	þæt	0.021	ic	0.023	þæt	0.027	on	0.020
Þa	0.020	on	0.020	þæt	0.021	on	0.024	ond	0.018
him	0.018	þa	0.018	he	0.015	þa	0.022	wæs	0.014
Þæt	0.018	ond	0.015	ne	0.015	wæs	0.019	þe	0.014
ne	0.015	wæs	0.011	þe	0.015	ond	0.016	he	0.014
on	0.015	he	0.011	swa	0.011	se	0.016	ne	0.011
to	0.012	him	0.011	þa	0.011	him	0.011	to	0.011
in	0.010	to	0.011	þu	0.011	ne	0.011	þa	0.011
se	0.010	se	0.010	git	0.010	ær	0.009	him	0.009
Þe	0.010	þe	0.009	me	0.010	ac	0.008	ic	0.009
he	0.009	ofer	0.008	ond	0.010	hie	0.008	swa	0.008
hie	0.007	wiþ	0.007	to	0.010	his	0.008	fela	0.007
wiþ	0.007	his	0.006	wit	0.010	þe	0.008	þær	0.007
æfter	0.007	is	0.006	no	0.008	Þær	0.007	hine	0.006

F (1063-250)		G (1251-306a, 1492-1622)		H (1306b-491, 1623-86)		I (1687-1887)		Lines 607-61	
word	frequency	word	frequency	word	frequency	word	frequency	word	frequency
ond	0.027	þa	0.034	on	0.028	þæt	0.027	on	0.034
Þa	0.021	þæt	0.027	þæt	0.024	on	0.023	ond	0.031
he	0.017	he	0.022	þe	0.018	þe	0.020	þæt	0.031
on	0.015	wæs	0.021	þa	0.016	him	0.019	þa	0.027
wæs	0.015	on	0.020	he	0.015	ond	0.019	ic	0.020
to	0.014	ond	0.020	wæs	0.013	to	0.017	þe	0.014
Þæt	0.014	se	0.014	ic	0.012	ic	0.016	oþ	0.010
swa	0.010	him	0.012	ne	0.012	he	0.013	word	0.010
hie	0.009	heo	0.010	ond	0.011	se	0.012	wæs	0.010

---

[15] Although the token *ful* can be an adjective or an adverb, in this passage the word is a weak noun in the accusative singular (Fulk, Bjork, and Niles 2008:381)

ne	0.009	ne	0.010	þu	0.011	ne	0.011	beowulf	0.007
Þær	0.009	to	0.009	to	0.010	þa	0.010	beowulfe	0.007
æt	0.009	æfter	0.008	se	0.009	wæs	0.010	cwen	0.007
Þe	0.009	þe	0.008	mid	0.008	swa	0.009	eode	0.007
Þu	0.009	þær	0.008	him	0.007	ofer	0.007	ful	0.007
him	0.008	swa	0.007	þonne	0.007	oþþe	0.007	Gelyfde	0.007

Table 1. Relative frequencies of the fifteen most commonly used words in each segment of the A-Scribe portion of *Beowulf* and in lines 607-60.[16]

The need to disambiguate pronouns in a scene with several interacting characters could explain a lower frequency of *he* and *him* (the presence of *Beowulf* and *Beowulfe* would be consistent with this interpretation). However, there are fewer interacting characters and less ambiguity in these lines than in the later depiction of Wealhtheow in the hall (lines 1168b-231), which does not have the same effect on dendrogram geometry. An alternate explanation for the influence of the passage's vocabulary distribution could be that there is proportionally greater use of bare noun inflection and less frequent use of optional prepositions and demonstratives to indicate grammatical relationships in these lines than elsewhere in *Beowulf*. Proportionally fewer prepositions reduces the number of words and syllables per line, creating the impression that the passage is more verbally compact than its surrounding matrix. Indeed, in published editions of *Beowulf*, lines 607-61 are visibly shorter than the passages that precede and follow them, with the greatest contrast appearing in lines 613-30.[16] Although the physical length of a line in a printed text is not necessarily a precise measure, the impression of tightness is supported by the average number of words per line, which in Wealhtheow's cup-bearing is 5.3, compared to 5.5 in the preceding passage and 5.7 in the lines that follow.[17] A more rigorous measure of density, the frequency of function words, likewise shows that lines 607-61 are more compact than neighboring passages: 1.67 function words per line compared to 2.09 and 2.15 in the preceding and subsequent 54 lines of the poem. Furthermore, between 607a and 630b, there are only seven half-lines that have as many as two unstressed syllables in a row, so there are very few "patter" verses in this section of *Beowulf*, resulting in a density of stressed syllables greater than that in the surrounding lines. All of these measurements support the subjective impression that the passage is verbally tighter than the surrounding material in *Beowulf*.

Verbal compression has often been cited as a sign of a text's oral antecedents. Indeed, the "thrift" of oral traditional works was first noted by Milman Parry, and although, as Foley demonstrated, the specific qualities of the noun-epithet formula that Parry identified were actually emergent phenomena of Homeric prosody, the general quality of "communicative economy" has been shown to be a feature of oral-derived works in many traditions (Foley

---

[16] Physical measurement confirms that this is not merely a trick of the eye: the median length of lines 607-61 in the fourth edition of Klaeber's *Beowulf* is 53.8mm, while it is 54.0 for 559-612 and a much more visibly distinct 56.5 for lines 662-708. The difference is even greater for the core of the passage, lines 613-30, which average 51.7 mm. The lengths were measured with an electronic Vernier caliper using the furthest projection of any letters as termini for each line.

[17] The number of words per line is also less variable in Wealhtheow's cup-bearing than in the other two passages, with a standard deviation of 1.4 words (compared to 1.5 and 1.8).

1991:19 n.37, 1990 chapters 3 and 4, and 2002:116-17). Unfortunately, although there is widespread agreement that oral traditional poetics enable surface-level verbal compression, there is no scholarly agreement as to how such communicative economy might be measured—or even detected—within individual traditions. Verbal compactness is unlikely to be sufficient as a measure of orality, but this quality of lines 607-61, plus the effect that they have on dendrogram geometry,[18] do indicate strongly that the passage is qualitatively different from its surrounding matrix. The additional analyses discussed below can help determine the cause of this difference.

Rolling-Window Analyses

Even though we had noted their unusual effect on dendrogram geometry quite early in our research, we did not think of lines 607-61 as being particularly interesting, in part because their narrative content is unexceptional. It was only after a long series of rolling-window analyses that we began to realize how anomalous the passage was. It seemed that every time we identified the sections of *Beowulf* with the greatest concentrations of some lexico-grammatical, metrical, or formulaic feature, Wealhtheow's cup-bearing was on the list. The cumulative implication of these analyses—discussed individually below—is that lines 607-61 are qualitatively distinct from the rest of *Beowulf*, and that the cause of these differences is unlikely to be the direct influence of a written source.

Distribution of Grammatical Feature: Conjunctive siþþan

In an effort to test arguments made by Levin Schücking (1905) about the composition-history of *Beowulf*, Janet Bately in 1985 examined the distribution of unstressed function-words throughout the Old English poetic corpus. One of these, *siþþan*, can be employed either as an adverb of time or as a conjunction.[19] Bately regarded the use of conjunctive *siþþan* as being potential evidence of a relatively early date for a poem or passage. She determined that although conjunctive *siþþan* is far more common in *Beowulf* than in any other long Old English poem,[20] the distribution of this construction in the poem did not support Schücking's hypothesis that *Beowulf* had been created when a later poet joined together two originally independent poems with a bridging passage. Because she found that conjunctive *siþþan* appeared in all three of

---

[18] Verbal density and dendrogram placement in cluster analysis may not, however, be entirely independent variables, since density can affect the frequencies of the function words whose distributions are important contributors to the results of cluster analysis.

[19] *Siþþan*-clauses "contribute significantly to the body of information contained in the poem, often by sketching in one of those passages that in the past have been labeled as 'digressions'" (Bately 1985:423-25).

[20] "All three parts of *Beowulf* show a preference for *siþþan* conjunction over *siþþan* adjective . . . a preference shared by fewer than half of the other longer poetic texts" (Bately 1985:421). *Siþþan* (with minor spelling variations) is used as a conjunction 56 times in *Beowulf*: lines 6, 106, 115, 132, 413, 604, 648, 656, 722, 834, 850, 886, 901, 982, 1077, 1148, 1198, 1204, 1206, 1235, 1253, 1261, 1281, 1308, 1420, 1472, 1556, 1589, 1784, 1947, 1949, 1978, 2012, 2051, 2072, 2092, 2103, 2124, 2201, 2351, 2356, 2388, 2437, 2474, 2501, 2630, 2888, 2911, 2914, 2943, 2960, 2970, 2996, 3002, 3127. It is used as an adverb in lines 142, 283, 470, 567, 685, 718, 1106, 1453, 1689, 1875, 1901, 1937, 1951, 2064, 2071, 2175, 2207, 2217, 2395, 2702, 2806.

Schücking's sections of *Beowulf,* not just the putative bridge, Bately (1985:431) concluded that the distribution "provides no evidence against the theory that one man was responsible for all three parts" of *Beowulf*.[21]

Unfortunately, the assumption that Schücking's tripartite hypothesis was the only reasonable alternative to a unitary *Beowulf* seems to have obscured potentially interesting patterns in Bately's data that can be seen if, instead of simply counting the number of instances of conjunctive *siþþan* in three large sections of the poem, we visualize the full distribution of the construction using rolling-window analysis. When we do so, the generally even distribution of conjunctive *siþþan* that Bately found turns out to be an artifact of the boundaries Schücking proposed for his three sections:
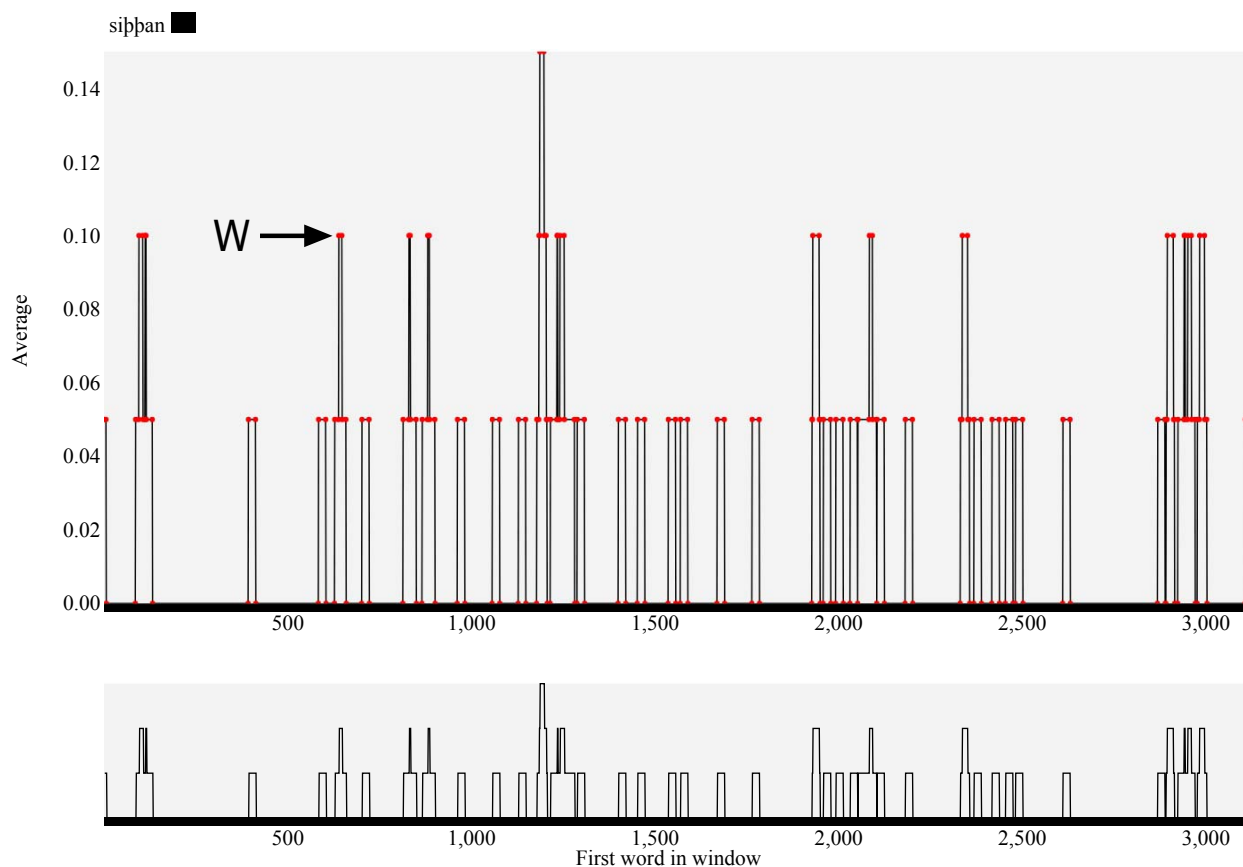
Fig. 3. Frequency of conjunctive *siþþan* in *Beowulf* in a rolling window of 20 lines.

Fig. 3 shows a plot of the distribution of conjunctive *siþþan* in *Beowulf* in a rolling window of 20 lines. The largest cluster of this grammatical feature occurs at 1107-236, a section of the poem that includes the end of the Finnsburg episode, Wealhtheow's speech to Hrothgar, and her gift of the necklace to Beowulf. A narrower concentration of conjunctive *siþþan* centered on line 2903 is coincident with the messenger's description of the wars between the Geats and the Swedes. The next highest concentration occurs with the story of Freawaru and the

---

[21] The elliptical way in which the normally very straightforward Bately phrases this determination, with stacked negatives and the ambiguous term "responsible," perhaps suggests some misgivings about this conclusion.

Heathobards (centered on line 2000). The fight with Grendel (centered on line 802) and the deaths of Hygelac and Heardred (centered on line 2338) also contain clusters of conjunctive *siþþan*. The Scyld material at the beginning of the poem and Wealhtheow's cup-bearing are the only other substantial clusters of this grammatical feature in the poem; the latter of these stands out because it is surrounded by very low frequencies of conjunctive *siþþan*, which is entirely absent from lines 133-412, 414-603, and 657-721, and only appears once between lines 657 and 833.

That there are both concentrations and absences of conjunctive *siþþan* in various parts of *Beowulf* does not necessarily, by itself, tell us much. Random variation also produces clusters. However, the coincidence of the clusters with portions of the narrative that are, for the most part, the historical or pseudo-historical background to the monster-fighting plot of *Beowulf* is by itself suggestive of the influence of sources on these parts of the poem, especially in light of Bately's conclusion that conjunctive *siþþan* is potentially diagnostic of relatively earlier poetic composition.[22] The evidence of cluster analysis and the verbal density of the passage further support an impression that Wealhtheow's cup-bearing has, at the least, been strongly influenced by a source.

Distribution of Metrical Features: Kaluza's Law, Ss/Sx, and Bliss Type A3 Verses

That impression is further strengthened when we consider the distribution in *Beowulf* of various metrical features. The most famous (and controversial) of these is the phenomenon that R. D. Fulk (1992:389-90) named "Kaluza's law." Kaluza's law is a recognition that in certain circumstances, two successive syllables are treated metrically as if they are a single syllable, but that this "resolution" is blocked in particular metrical positions not only if a syllable is "heavy" (that is, if it contains a long vowel, a long diphthong, or a vowel plus one or more consonants) but also if its etymon was heavy (Kaluza 1896). Because the distinction between "long" and "short" inflectional endings had stopped being observed in Old English by 725 south of the Humber and by 825 in the rest of Anglo-Saxon England, verses observing Kaluza's law, Fulk argued (1992:389-90), were likely to have been composed before this change occurred.[23]

The operation of Kaluza's law is also restricted to those verse types in which the resolvable syllables and the stressed syllable that precedes them occur in the same foot. Fulk (1992:389-90) saw the law as only applying under secondary stress[24] and showed that it operated in 106 of the 108 possible verses in *Beowulf*. Rand Hutcheson (1995:3.D) then demonstrated that Kaluza's law should also apply to syllables under primary stress at the end of certain types of

---

[22] For discussion, see Drout et al. (2016:62-66).

[23] To create verses that observed Kaluza's Law after the distinction between long and short inflectional endings had been lost, the poet would have to know the etymological antecedents of words and be a rather skilled philologist.

[24] Bliss' types 2A3a(ii), 2A4, 1D3, and 3E3.

"light" verse types in which resolvable endings do not occur,[25] thus increasing the number of verses in the poem to 176 out of a possible 179.[26]

Because of its potential implications for the dating of *Beowulf*, discussions of Kaluza's Law have been contentious. The most significant challenge to Fulk's conclusions has come from Roberta Frank (2007:857-60), who argues that the Kaluza's Law verses could be examples of deliberate archaizing—what she calls "a 'ye olde' sign." The verses preserve the old metrical features because they were transmitted verbatim from the earlier period as part of the poet's common traditional heritage rather than being composed de novo for *Beowulf* in an older linguistic environment. Frank (2007:857-60) states that the Kaluza's Law verses are concentrated in "dark, martial passages" that emphasize heroism. George Clark (2014:233-34), responding directly to Frank's arguments, disagrees, pointing out that not all dark, martial and heroic passages in the poem contain Kaluza's Law verses and, conversely, not all passages containing Kaluza's Law verses are dark, martial, or heroic. Dividing *Beowulf* into 32 segments of 100 lines and counting the frequency of Kaluza's Law verses in each, Clark determines that the verses are rather evenly distributed throughout the poem.[27] He (2014:233-34) rejects Frank's contention that these "semi-obsolete linguistic markers" were used merely to invoke a heroic past, concluding instead that the archetype of *Beowulf* having been composed before 750 is the simplest explanation of the evidence.

Rolling-window analysis cannot by itself resolve debates about the significance of Kaluza's Law,[28] but it can give us much better resolution of the actual locations of clusters or absences of the verses in question. That distribution suggests that both Frank's and Clark's seemingly diametrically opposed claims are each partially true, but incomplete.[29] Fig. 4 is a plot of the frequency of Kaluza's Law verses (using Hutcheson's expanded definition of the phenomenon) in a rolling window of 25 lines:[30]

---

[25] 2A1b, 2A3b, a1.

[26] Benjamin Slade's (2003) online compendium on Kaluza's Law and his machine-friendly list of the different verses are extremely valuable: https://www.heorot.dk/kaluza-dating-txt.html

[27] Like R. W. Chambers (1959:117-20), Clark (2014:222) recognizes that a random distribution would not spread the verses evenly throughout the text: "a distribution without clusters and corresponding gaps in the occurence of [Kaluza's Law I] verses would be wildly improbable."

[28] The debate is ongoing, and is summarized and discussed in detail in Neidorf and Pascual (2014).

[29] This is not the first time that lexomic analysis has suggested that two antithetical claims are each partially correct. Cluster analysis of both *Guthlac A* and Bede's *Ecclesiastical History*, and rolling-window analysis of *Daniel,* have shown that the heterogeneity of certain early medieval texts has the potential to mislead scholars who apply to complete texts interpretations that should be limited to particular sections (Downey et al. 2012 and 2014; Drout and Chauvet 2015).

[30] Although the shape of the overall plot is somewhat different if we used the more restricted sense of the law—as do Neidorf and Pascual (2014)—the peak at Wealhtheow's cup-bearing remains.
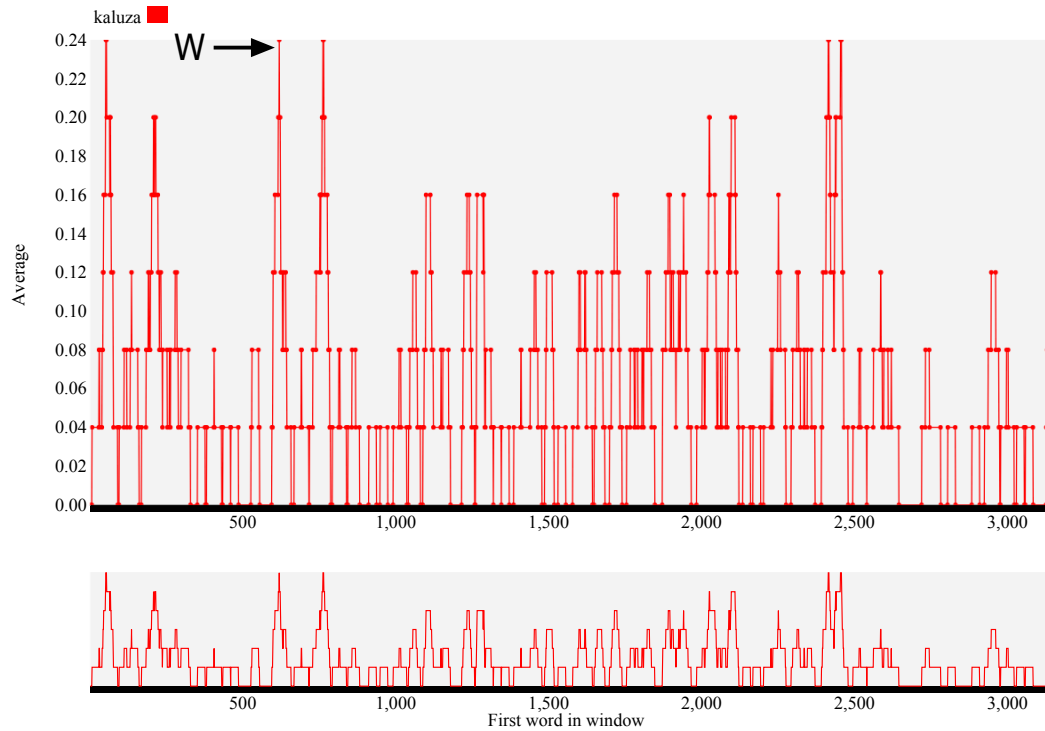
Fig. 4. Frequency of Kaluza's Law verses in a rolling window of 25 lines.

Analysis of the full distribution of these verses throughout *Beowulf* is beyond the scope of this essay,[31] but for present purposes, it is sufficient to note that Wealhtheow's cup-bearing has one of the highest concentrations of Kaluza's Law verses in the poem, with seven occurrences (lines 619b, 622a, 623b, 629a, 640a, 643a, 657a).[32] On average there is in *Beowulf* one Kaluza's Law verse every 18.3 lines (.055/line), so we would expect approximately three in any given 54-line section;[33] the frequency in Wealhtheow's cup-bearing is thus more than twice the poem's average. Only two other passages, lines 751-79 (the fight with Grendel), and lines 2397-462 (the thief leading the men to the barrow, the story of the Geatish succession, and the Father's Lament) —have similarly high frequencies of the verses.

If Clark, Fulk, and others are correct in inferring that concentrations of Kaluza's Law verses are diagnostic of early composition, then Wealhtheow's cup-bearing, along with several other sections of the poem, appears to be older than the rest of *Beowulf*. If Frank is correct, and the presence of Kaluza's Law verses indicates that a poet is drawing on memorized formulas to give the impression of archaism, then the passage is not only formulaically dense, but deliberately archaized in order to make it appear traditional. In either case, it is evident that Wealhtheow's cup-bearing is different from its surrounding matrix in its concentration of features that are generally diagnostic of greater age and formulaicity. By itself, we might

---

[31] That research is forthcoming, to be published as *A (Rolling) Window on the Past: Lexomic Analysis of the Construction of Beowulf*.

[32] There are seven total verses affected by Kaluza's Law in the passage: 3 Type I, 0 Type II, and 4 Type III.

[33] Using the more restrictive definition of the Law, we find that Wealhtheow's cup-bearing has 3 occurrences of Kaluza's law when we would expect 1.8, 66 percent more than the baseline value.

interpret the concentration as simply an artifact of a random distribution of Kaluza's Law verses throughout *Beowulf*, but in light of the differences in vocabulary distribution, the greater verbal economy, and the more frequent use of conjunctive *siþþan,* the clustering of Kaluza's Law verses in Wealhtheow's cup-bearing seems to be less of a coincidence, especially because these different kinds of features are independent of each other, and the latter two are generally considered to be indicative of earlier rather than later composition.

Distribution of the Ss/Sx verse type

Another metrically distinct feature of *Beowulf*, the Ss/Sx verse type (using Geoffrey Russom's word-foot notation), is concentrated in lines 607-61 of the poem.[34] Ss/Sx verses have a primary and secondary stress in the first foot, and a stressed and unstressed syllable in the second. Although there is some overlap between Kaluza's Law and Ss/Sx verses, they are not identical. A variation of the primary building block of Germanic alliterative poetry, the Sievers type A verses.[35] There are seven instances in Wealhtheow's cup-bearing (lines 619a, 622a, 626a, 629a, 640a, 643a, 657a), all of which begin with a compound word: *sincfato* ("treasure cup"), *wīsfæst* ("fast in wisdom"), *wælrēow* ("fierce in battle"), *gilpcwide* ("boasting speech"), *þrȳðword* ("strong word"), *ðrȳþærn* ("great hall"). More than 85 percent of the Ss/Sx verses in *Beowulf* begin with a compound word, so the rate of 100 percent in Wealhtheow's cup-bearing is not an enormous deviation from the norm, but compounds are somewhat more frequent in the passage than in the rest of the poem. There are 242 Ss/Sx verses in *Beowulf*, about 3.8 percent of the poem. If these verses were evenly distributed we would expect there to be four examples in Wealhtheow's cup-bearing rather than the seven that do appear.

Fig. 5 is a plot of the frequency of the verse type Ss/Sx in a rolling window of 50 lines. Wealhtheow's cup-bearing is the second-highest concentration of these verses in the first two-thirds of *Beowulf*; the only place where the verse form is used with greater frequency is in lines 1160-285, the portion of the poem that includes Wealhtheow's speech and gift-giving after the Finnsburg episode, the story of the Brosing necklace, and the preparations for bed before the attack by Grendel's mother.[36] It is, at the least, an interesting coincidence that the two largest concentrations of this verse type in the Danish part of the poem are scenes in which Wealhtheow appears:

---

[34] In Russom's (1998:18-19) scansion notation, a syllable receiving primary stress is indicated by capital S, one receiving secondary stress by a lower-case s, x indicates an unstressed syllable, and / marks the caesura or breath pause. We would like to thank Geoffrey Russom for generously allowing us to use his metrically parsed *Beowulf* for this analysis. The concentration of Ss/Sx verses was first identified by Audrey Dubois**,** Lexomics research associate.

[35] Sievers type A2l; Bliss 2A3a.

[36] Because the metrically parsed *Beowulf* is arranged by half-lines, the numbers on the horizontal axis of the plot must be divided by two to identify the correct line number.
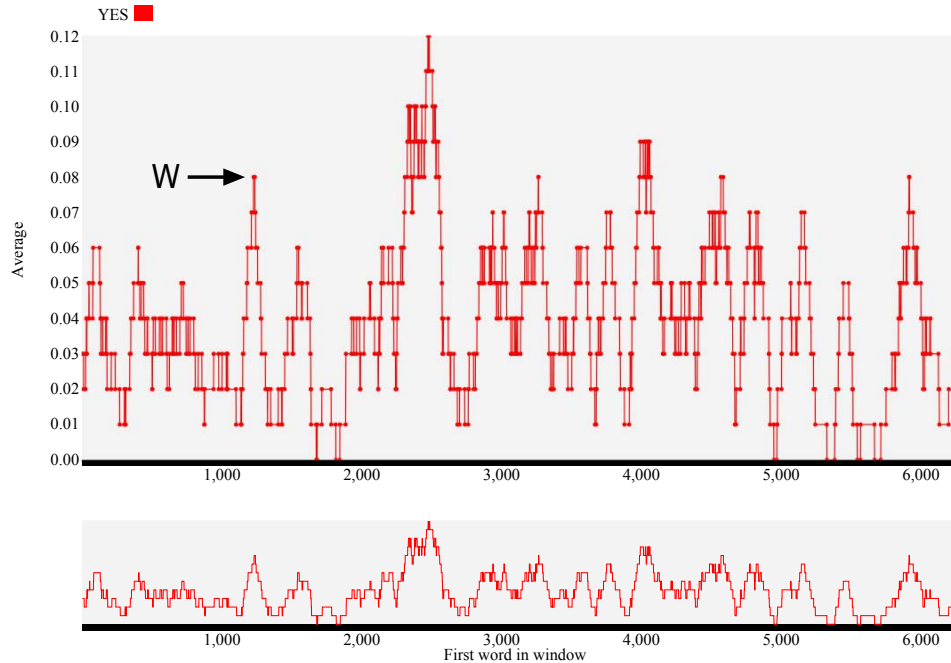
Fig. 5: Frequency of Ss/Sx verse types in *Beowulf* in a rolling-window of 50 lines.

Of the seven compound words beginning these Ss/Sx lines, five are found only in poetry, and 57 percent of the instances of the sixth, *wisfæst,* appear in poems. Only *wælreow* occurs more frequently in prose texts than in poetry.[37] There is, therefore, a higher concentration of purely poetic compound words in lines 607-61 than in most other parts of the poem. Approximately 10 percent of the Ss/Sx lines in *Beowulf* begin with names,[38] and elsewhere in the poem the names *Beowulf*, *Hrothgar*, and *Wealhtheow* are used line-initially.[39] But even though Wealhtheow's cup-bearing both contains all of these names and includes a concentration of Ss/Sx verses, none of those verses begin with the names of these major characters (640a and 657a contain the names, but not initially).

Poetic compounding was more productive in the early period of Old English poetry than the later,[40] but we do not have enough data to determine if there was a steady decline in compounding from the earliest period through the evolution of Middle English verse, nor can we separate out the presumed variability of individual authors' composition processes. By themselves, therefore, the concentration of Ss/Sx verses in Wealhtheow's cup-bearing cannot

---

[37] Because the prose corpus is so much larger than the poetic corpus, we cannot infer that *wælreow* is a non-poetic compound, only that it is not an exclusively poetic word.

[38] For discussion of whether many of the names in *Beowulf* were parsed as dithematic compounds or as single units, see Neidorf (2013).

[39] In Ss/Sx verses elsewhere in the poem, "Beowulf" appears initially seven times: lines 364a, 676a, 1191a, 1216b, 1310b, 1758b, and 2389b ("Beowulf" in line 18a is likely a scribal error for "Beow"). "Hroðgar" is used initially in Ss/Sx verses five times: lines 339b, 1646b, 1816b, 2010b, and 2144b, and "Wealhþeow" is used initially in an Ss/Sx verse in 664b.

[40] For the decline in the productivity of compounding in the later part of the Old English period, see Fulk (1992:254-68) and Russom (1998:65-8).

prove that the passage antedates the majority of the poem (in which this verse form appears less frequently). We do note, however, that once again, a distinctive formal feature associated with a poem's being relatively older rather than younger, is concentrated in lines 607-61.

Distribution of Verses Containing Alliterating Un-Displaced Finite Verbs (Bliss Type A3)

When stressed elements and displaced sentence particles of a verse clause are found in the alliterating positions of a line of Old English poetry, they alliterate; un-displaced sentence particles and proclitics are regularly placed in a group at the beginning of a line before the first alliterating element. The only exceptions to this rule are the finite verbs, the majority of which alliterate, thus creating an apparent contradiction between the alliterative and metrical-grammatical systems of Old English. In a recent essay, Mark Griffith (2016:113-14) updates and augments the work of Alan Bliss (1967 [1958]) on this problem, arguing that, when un-displaced finite verbs throughout the entire poetic corpus are examined, it becomes evident that register rather than syntax determines their behavior: "for the Old English poets, *un-displaced, poetic finite verbs ought to alliterate*." However, there was "license within the system which allowed the poets to exploit much more fully the potential of their verbs" (Griffith 2016:118). As Griffith shows in his close readings of multiple passages in *Beowulf* and other poems, poets could use the flexibility allowed by the system to create various aesthetic effects.

This poetic freedom, we can infer, would have been exploited to different degrees by different poets. Griffith (108) argues that the *Beowulf*-poet's general avoidance of "structures with alliterating finites preceding full compounds and two separate nouns" is probably "a particular constraint of that poet's style." If this is the case, then large discrepancies in the frequency of verses in which the finite verbs do not alliterate (among those verbs that appear in Bliss' groups of alliterative finite verbs) may be diagnostic of a passage's having a different author or source. The rolling-window plot in Fig. 6 was created from Griffith's (2016:108-11) list of verses:[41]
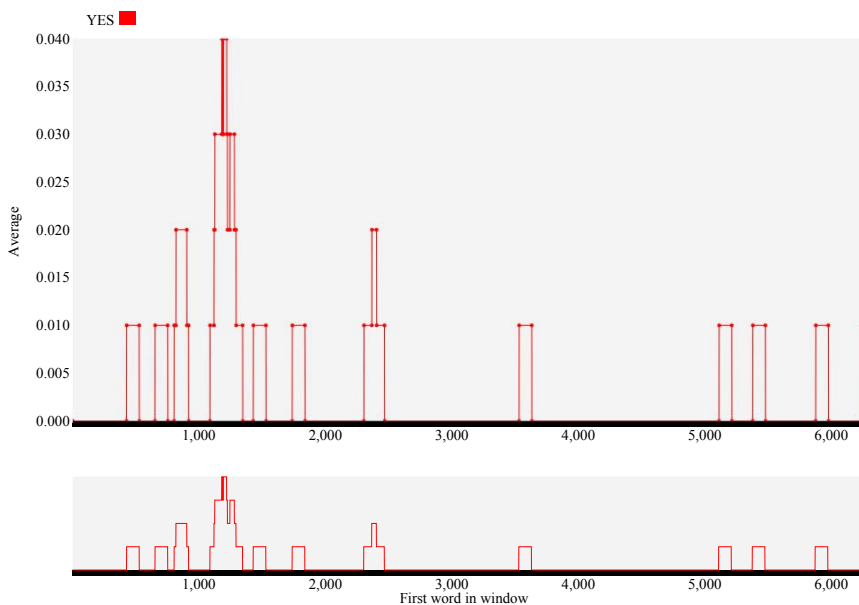
Fig. 6. Average frequency of alliterating non-displaced finite verbs in *Beowulf* in a rolling-window of 50 half-lines. Horizontal scale is in half-lines.

---

[41] This plot was made using Griffith's list of verses in Bliss' groups 2, 3, 4, and 7, which are the groups of these type of verses in which alliteration is most frequent in *Beowulf*. A plot of only the verses in group 3, which, according to Bliss (1966 [1958]), is the only group in which the alliteration is functional (the verb is the only particle before the first stressed element), has exactly the same shape as that of the four groups combined shown in Fig. 6.

Once again we find a cluster of a feature centered on Wealhtheow's cup-bearing: the frequency of verses containing alliterating non-displaced finite verbs is here twice that of any other section of *Beowulf*. The second-highest frequencies of the verses are found in the interaction between Hrothgar and Beowulf, when the hero offers to fight Grendel (lines 409-450), and in Wealhtheow's speech to Hrothgar (lines 1159b-1196), a passage which, as noted above, contains the highest concentration of conjunctive *siþþan* in the poem. Because the use of non-alliterating finite verbs in Bliss type A3 verses is a feature under the control of an individual poet (rather than being forced by the metrical system) and because the author of the vast majority of *Beowulf* appears to prefer to employ verses in which the finite verbs alliterate, the concentration shown in Fig. 6 strongly implies that Wealhtheow's cup-bearing either has a different author or has been influenced by an external source, a conclusion consistent with the other evidence discussed thus far.

Density and Distribution of Formulas

Francis Magoun's (1953) pioneering study of the oral-traditional nature of Anglo-Saxon poetry used formulaic density as an indicator of poems' relative orality. This measure was for the most part rejected by critics after Larry Benson (1966) showed that some Anglo-Saxon poems translated from Latin appeared to have the same formulaic density as texts, such as *Beowulf*, that were thought to have oral-traditional sources.[42] Even after significant flaws were identified in Benson's methodology—he was searching for Homeric formulas in a tradition that works quite differently (Foley 1990:207-35)—most scholars have followed Lord (1986:478-81) in seeing formulaic density as an unreliable marker of a text's orality. This may indeed be true, for a variety of reasons, (there is not even agreement in the scholarship as to what constitutes a formula), but variations in the frequency of formula-use—using any consistent definition of "formula"—*within* a given poem is, at the very least, additional data about that poem, regardless of whether or not we accept the idea that higher formulaic density is diagnostic of immediate oral origins.

Andy Orchard's tables of repeated formulas (2003:274-326) allow us to create a database of lines containing formulas. We recognize (as does he) that the method used by Orchard of counting as formulas only those phrases that exhibit verbatim or near-verbatim identity, probably misses many actual formulas.[43] For the purposes of this study, however, that conservatism is useful precisely because it avoids the confirmation bias that could arise from employing scholarly cleverness to identify putative non-obvious formulas: it is just too easy to apply more ingenuity to the identification of formulas in those passages that one suspects of being more formula-dense. Orchard's selection, therefore, provides a useful proxy measurement for whatever

---

[42] Benson's argument was so influential in part because he gave the field something it desired: a means of evading the critical problems posed by oral tradition. For a similar example of flawed arguments being accepted because they were what scholars wanted to hear, see Drout, Boyd, and Bowman (2014:157-77).

[43] Inter alia, Mize's examples of the *corna q-st* formula—*hwitust corna* and *corna caldest*—might not have enough overlap to be considered a formula if multiple appearances of the same exact phrases are required (Mize 2013:86-92; see below for further discussion).

the true (but now undetectable) formulaic density is within *Beowulf*.[44] After compiling a machine-readable list of Orchard's lines containing formulas, we used the Lexos software to produce a plot of the frequency of repeated formulas in a rolling window of 20 lines (Fig. 7):[45]
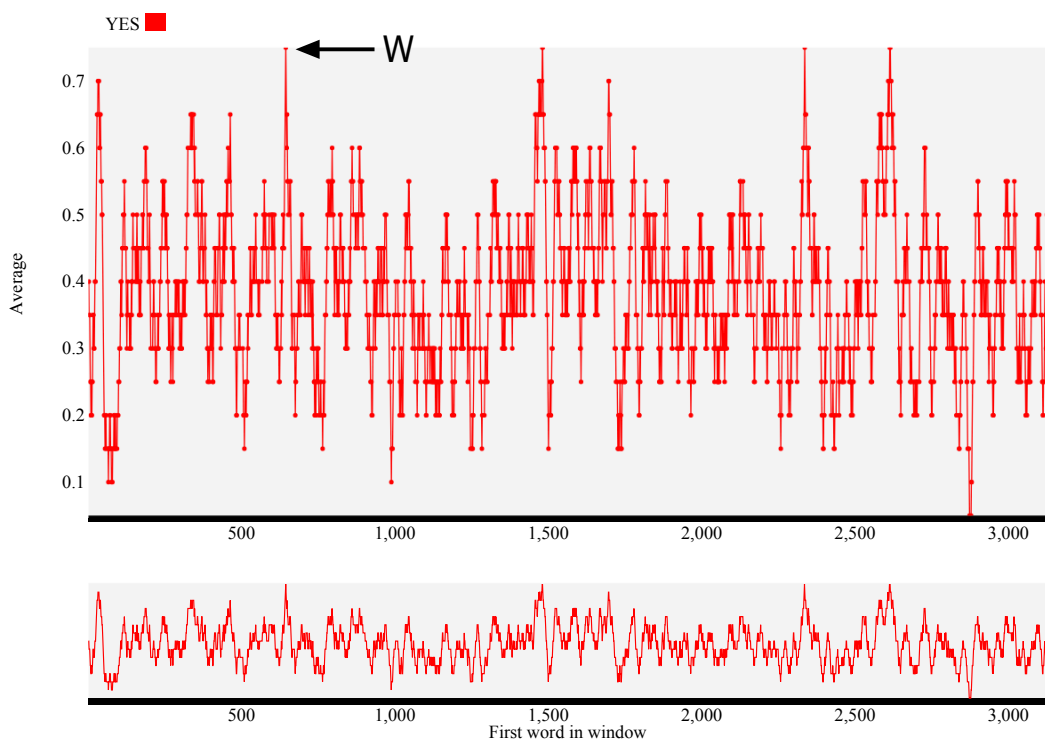

Fig.7. Frequency of repeated formulas in *Beowulf* in a rolling window of 20 lines.

The most important result of this analysis, for the purposes of this study, is the identification of Wealhtheow's cup-bearing as one of the four most formulaically dense passages in *Beowulf*, with an average density of .75 formulas per line. There are only three other places in the poem that reach this level of density, short passages centered on lines 1481, 2335, and 2614 (Beowulf's fight against Grendel's mother, the deaths of Hygelac and Heardred, and Wiglaf's upbraiding of the cowardly retainers). Taken in isolation, the concentration in lines 607-61 might not appear significant, because a random distribution of formulas would be expected to produce some areas of concentration and others of absence. However, the correlation of the high formulaic density in this part of the poem with all of the other features discussed above (which are at least theoretically independent of the passage's formulaicity) further supports the conclusion that lines 607-61 are qualitatively different from both their surrounding matrix and from most of the rest of *Beowulf*, and this difference, once again, is associated with a feature that has been linked to a text's being relatively older or more traditional.

---

[44] Orchard excludes phrases that appear in other poems but are not repeated in *Beowulf*, so his list certainly undercounts the total number of formulas in the poem, but again, for the purposes of this study, that useful restriction avoids the very difficult problem of the influence of a poem's topic on its formulaic density.

[45] It is remarkable how similar the general outline of this graph is to the plots in Foley's (1978) pioneering computer-based study of metrical patterns in *Beowulf*, even though the technology of the time limited Foley to calculating frequencies within arbitrary segments.

Distribution of thorn *<þ> and* eth *<ð>: Orthographic Evidence Against a Written Source*

In Old English orthography, the allographs <þ> *thorn* and <ð> *eth* are both used to represent the dental fricatives, both voiced and unvoiced. The two graphs are thus linguistically interchangeable, so their ratio in a text is not dependent on the content of the text, but instead on the interaction of scribal orthographic practice and exemplar influence.[46] A tenth-century scribe freshly composing a text might use approximately equal numbers of þ and ð, but when that same scribe copied an older text that preferentially employed ð, the relative frequency of that grapheme increased. Abrupt changes in the rolling ratio of the allographs have, in some cases, been shown to be indicative of sections of a text having different copying- and thus, presumably, composition-histories than their matrices (Drout and Chauvet 2015).

Fig. 8 shows the ratio of þ to ð in a rolling window of 25 lines of *Beowulf*. We immediately note that the orthographic practices of the A- and B-scribes of the poem are extremely different. The A-scribe, who copied lines 1-1939, uses þ much more frequently than the B-Scribe, who prefers ð. Because of this disparity in orthography, we can only make useful comparisons within the work of each scribe. Lines 607-61 contain one of the highest concentrations of þ in the A-Scribe's portion of the poem; only in lines 755-80 (the middle of Beowulf's fight with Grendel) and 1215-47 (talk in the hall and preparation for bed before the attack of Grendel's mother) does the scribe use proportionally more thorns.

In previous research, concentrations of þ were correlated with those sections of a poem that post-date the material in the rest of the text: *Genesis B*, which is substantially younger than *Genesis A*, uses many more *thorns* than *eths*. Conversely, high concentrations of *eth* appear to be correlated with sections of poems that antedate their matrices: the "Song of the Three Youths" in *Daniel* appears to be older than the rest of that poem (Drout and Chauvet 2015:292-99). However, it is not possible at this stage in our knowledge to state absolutely that a higher ratio of *thorns* to *eths* is always diagnostic of a younger underlying exemplar. Although ð entered Anglo-Saxon orthography somewhat before þ, and a number of early manuscripts, such as the Vespasian Psalter Gloss,[47] use only ð (Roberts 2005:20-28; Campbell 1959:25), the B-Scribe's much more frequent use of this grapheme when copying from the same exemplar as the A-Scribe indicates that individual orthographic practice could vary substantially even between two scribes working on the same manuscript at roughly the same time and in the same place.[48]

---

[46] Rolling-window analysis was originally developed specifically to investigate the complimentary distribution of the two letters in Anglo-Saxon poems.

[47] London, British Library, Cotton Vespasian A.i; the continuous gloss was written in the ninth century at St Augustine's, Canterbury (Ker 1957: no.203; Gneuss and Lapidge 2014: no.381).

[48] The handwriting of the B-Scribe suggests that he was perhaps a generation older than the A-Scribe, but that is not a sufficient explanation for the predominance of ð in his orthography (Fulk, Bjork, and Niles 2008:xxvii).
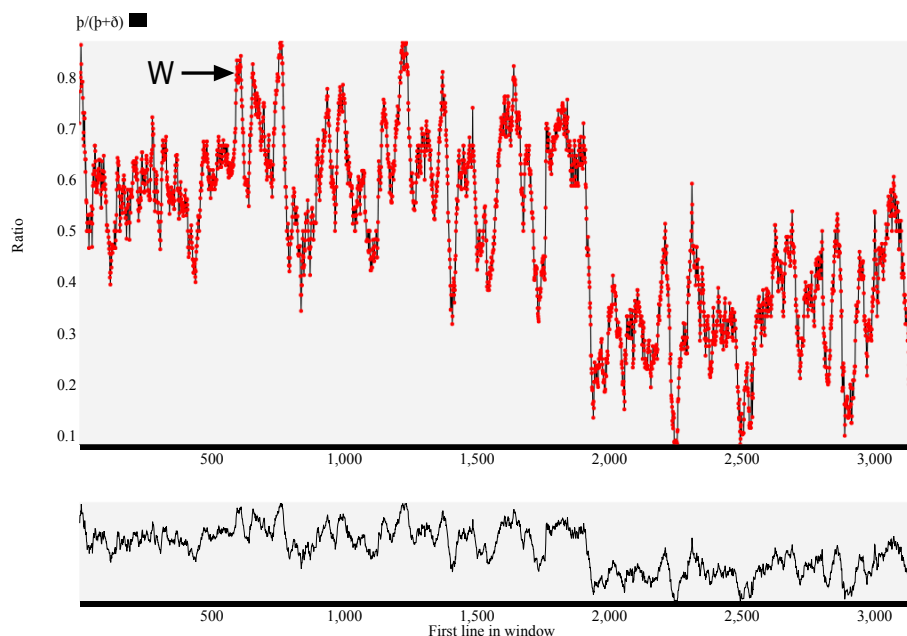
Fig.8. Ratio of þ to ð in a rolling window of 25 lines.

Two sections within the A-Scribe's portion of *Beowulf* that are generally thought to be most likely to have written, Old English sources are characterized by a more frequent appearance of *eth*: lines 1063-159a (the Finnsburg episode), and lines 1399-437 (the description of the mere). The now-lost Finnsburg fragment demonstrates that more than one version of that story existed in written form in the Anglo-Saxon period (Fulk, Bjork, and Niles 2008:278), and because neither the fragment nor the episode shows signs of being derived directly from the other, we can infer the existence of some ultimate source for both, although whether that source was written or oral is a problem that remains unsolved. The presence of a few unusual and lexically similar words in both fragment and episode[49] might imply that the source was written (Fulk, Bjork, and Niles 2008:279), but unusual and thus distinctive words are often conserved— even after their original significance has been lost—through many stages of oral transmission.[50] From this evidence alone, therefore, we can not determine if the different orthography of Finnsburg episode is due to the influence of a written or an oral source for this section of the poem.

However, the second concentration of *eth* can be traced to the likely influence of a specifically written source. As Charles Wright (1993:106-36) has demonstrated, the much-remarked similarities between the description of the mere in lines 1399-1441 and Blickling Homily XVI can best be explained by the *Beowulf*-poet having been familiar with a now-lost, vernacular verse treatment of the *Visio Pauli*. Although Wright's analyses are based on data entirely independent of the orthography of the passage, the distribution of the two allographs also

---

[49] *Eorðcyning* and *eorðbuend*, *hildeleoma*, and *swurdleoma*. For discussion see Campbell (1962:13-26) and Drout et al. (2016:103-107).

[50] See Amodio (2005:130). J. R. R. Tolkien (2014:210-11) thought that the similarity of *hæftmece* in *Beowulf* and *heptisax* in *Grettis Saga*, what he called "an extraordinary linguistic connexion," indicated that in the very old common source the hero wielded a wooden-hafted weapon that broke at a key moment in a fight with a monster. For an alternative view, see Fjalldal (1998).

supports his conclusion that the source was vernacular, as only an Old English text could influence the ratio of *thorn* to *eth* in a derived work.[51] We may infer, then, that the similar frequency of *ð* found in the Finnsburg episode is likewise also likely to have been caused by the influence of a written, vernacular source that antedated the composition of the rest of *Beowulf*.

Previous investigations have determined that although the ratio of *þ* to *ð* reached rough equilibrium in tenth-century poetic manuscripts, *eth* was never entirely replaced by *thorn* during the Anglo-Saxon period (Drout and Chauvet 2015:286-90). Thus, while we can have some confidence that a high-*eth* section of a manuscript is likely indicative of the influence of an older source, at the current state of our knowledge we cannot be equally certain that a particularly high-*thorn* section is definitely younger (only that it is not likely to be substantially older).

To this point in our analysis, the most parsimonious interpretation of the evidence has seemed to be that lines 607-61 had a written, Old English source antedating the composition of the majority of *Beowulf* (as the Finnsburg episode and the description of Grendel's mere most likely do). However, the distribution of *thorn* and *eth* in Wealhtheow's cup-bearing militates against this conclusion, as it strongly implies that the source of the passage was either not older or not written. The first of these possibilities seems unlikely, since the passage's being younger would not explain the concentration of non-orthographic features of the poem discussed above. The influence of an older, non-written source, on lines 607-61 of *Beowulf*, however, could explain the full range of evidence.

The Formulaicity, Feature-Interlinkage, and Adaptability of the Passage

The content of lines 607-661, however, would appear to be inconsistent with the passage having an oral source. The passage contains the names of peoples, families, and individuals, all of which are metrically, and for the most part alliteratively, integrated into the lines; it seems custom-made for *Beowulf*. But a close reading in the light of an improved theory of the Old English formulaic system shows that, at their core, lines 607-61 are much more generic and adaptable than they at first appear. The phrases containing *Beowulf*-specific names are in fact formulaic in a way that allows different proper nouns to be substituted with only minimal disruption to describe any queen passing a cup in any hall. The apparent specificity of the passage, therefore, is an artful illusion that does not preclude the influence of an antecedent on lines 607-61 but is instead evidence for the traditional nature of Wealtheow's cup-bearing.

Although the formulaic nature of Anglo-Saxon poetry was recognized as early as 1953 by Magoun, and despite six decades of subsequent scholarly effort, the precise workings of the formulaic system in Old English have not been captured by any single model. The fundamental challenge, recognized forty years ago by Vaira Vikis-Freibergs and Imants Freibergs (1978:331), is that while we identify formulas syntagmatically, by noting repetition in the surface structure, formulaic systems almost certainly work paradigmatically, providing a pattern or template into which various elements could be substituted.[52] Orchard's (2003:278-94) working definition of a

---

[51] Neither grapheme is used in Latin orthography.

[52] For a very recent summation of the problem, see Nikolaev (2016:112-15).

formula as a phrase that appears verbatim in at least one other place in the corpus takes the syntagmatic approach. Identifying *þeodnes þrymfulle* and *þegnas þrymfulle* as both being instantiations of the same underlying formula is more paradigmatic.[53]   But although a paradigmatic model seems more desirable, there are, as Vikis-Freibergs and Freibergs (1978:329-31) note, some significant challenges to constructing one. In practical terms, identifying formulas in any large corpus can only be done syntagmatically, because most current digital tools are limited to finding repetitions only in the surface features of the text.[54] Identifying paradigmatic formulas would have to done by hand, and, at the current stage of our knowledge, we cannot be certain that such an approach would be successful, because recognition of the paradigm underlying any given formulas requires scholarly cleverness. We do not have a theory that would allow us to be sure that we have captured all the paradigmatic formulas in a corpus, or that what we think is a paradigmatic formula really is one. We thus end up relying on syntagmatic similarity even when trying to develop a paradigmatic model.

The most fruitful approaches to the formula in Old English, both of which can account for many of the observed features of Anglo-Saxon poetry are Foley's (1988) and Fry's (1967), particularly this latter as extended by John Niles (1981), who demonstrated how verbatim repetitions can arise as a product of the underlying flexible system rather than simply being "fixed formulas."[55] Britt Mize's (2013:52 n.44, 92 n.21) much more recent model, which is built upon those foundations, moves closer to a fully generative formulaic system and therefore seems to us to have the greatest potential for explaining the specific phenomena under discussion here.

In Mize's system, which is part syntagmatic and part paradigmatic, a formula is made up of a combination of fixed and variable lexical elements. These latter, designated by q in Mize's notation, can be constrained to varying degrees by phonetic value, grammar, meter, alliteration, and meaning. So, for example, in the q on *frofre* formula, q must be a polysyllabic noun or substantive adjective bearing primary stress and alliterating on /f/; in the q *on mode* formula, q must be a mono- or disyllabic adjective or noun bearing strong stress and participating in the line's alliteration (Mize 2013:52 n.44, 53). Similarly, *corna cealdest* and *hwitest corna* as two instantiations of the same underlying formula that includes a superlative associated with weather with *corn* in the genitive plural. Mize's model has the great benefit of including the phenomenon of interlinking different categories of linguistic features, to different degrees, across levels of the morpho-semantic hierarchy.[56] For example, in q on *frofre*, q is globally restricted to a single phonetic value, to either of two grammatical categories, and to being more than one syllable; it is locally restricted to words that would bear primary stress in the line in which the formula appears and whose meanings are consistent with being followed by on *frofre* [in consolation or relief]. The formulas that can be generated by this system exhibit the "variation within limits" that Foley

---

[53] In a different essay Orchard (2003:279) classifies these two half-lines as variants of the same formula.

[54] Nikolaev's remarkably clever algorithm for Russian is not easily transferrable to Old English.

[55] As Kiparsky suggested, a complete theory of the formula must be generative and productive of non-verbatim formulas (Kiparsky 1976:102-04).

[56] For the morpho-semantic hierarchy, see Drout (2013:103-07).

(1991:6-8 and 1998:149) and many others have identified as a key characteristic of oral-traditional poetics (see also Drout 2011).

In the following discussion we further elaborate on Mize's formulaic model by specifying semantic as well as phonetic, morphological, and metrical constraints on *q*. Thus instead of "*q on mode*" we write "[mono- or disyllabic adjective or noun meaning "emotion," bearing strong stress and alliterating with the other half of the line] *on mode*." To reduce visual clutter, we have not put every constraint into every q-slot but have instead only given those most relevant to the immediate discussion, which is focused on the participation of proper nouns in the formulaic system in lines 607-61.

There are ten different proper nouns (in various inflected forms) in Wealhtheow's cup-bearing.[57] The majority of these appear in just 25 lines of the passage, which we analyze in detail below. Proper nouns are given in italic type; phrases identified by Orchard (2003) as repeated formulas are underlined:

Þa wæs on salum	sinces brytta	
gamolfeax ond guðrof;	geoce gelyfde	
brego *Beorht-Dena*;	gehyrde on *Beowulf*e	
folces hyrde	fæstrædne geþoht.	610
Ðær wæs hæleþa hleahtor,	hlyn swynsode,	
word wæron wynsume.	Eode *Wealhþeo* forð,	
cwen *Hroðgares*	cynna gemyndig,	
grette goldhroden	guman on healle,	
ond þa freolic wif	ful gesealde	615
ærest *East-Dena*	eþelwearde,	
bæd hine bliðne	æt þære beorþege,	
leodum leofne;	he on lust geþeah	
symbel ond seleful,	sigerof kyning.	
Ymbeode þa	ides *Helminga*	620
duguþe ond geogoþe	dæl æghwylcne,	
sincfato sealde,	oþ þæt sæl alamp	
þæt hio *Beowulf*e,	beaghroden cwen	
mode geþungen	medoful ætbær;	
grette *Geata* leod,	Gode þancode	625
wisfæst wordum	þæs ðe hire se willa gelamp	
þæt heo on ænigne	eorl gelyfde	
fyrena frofre.	He þæt ful geþeah,	
wælreow wiga	æt *Wealhþeon*,	
ond þa gyddode	guþe gefysed.	630
Beowulf maþelode	bearn *Ecgþeowes*	

[57] In the uninflected forms used in the glossary of proper names in the fourth edition of Klaeber's *Beowulf* (1950 [1922]), these are: *Beorht-Dene* (609), *Beowulf* (609, 623, 631, 653), *Wealhþeow* (612, 629), *Hroðgar* (613, 653), *East-Dene* (616), *Helmingas* (620), *Geatas* (625, 640), *Ecgþeow* (631), *Healfdene* (645), and *Dene* (657) (Fulk, Bjork, and Niles 2008).

Despite the passage being quite formulaically dense (even when using the very restrictive method of identifying a formula only by finding a verbatim or near-verbatim repetition of a half-line), only two of the repeated formulas identified by Orchard include a proper name: "brego Beorht-Dena" in line 609, which also appears in *Beowulf* line 427, and "eode Wealhþeo forð" in line 612, a variant of which can be found in line 1162 as "þa com Wealhtheow forð." In both of these cases, the proper names are among the alliterating words in the line, as they also are in lines 616, 623, 625, and 629 (the proper names do not alliterate in lines 614 and 620). Any change in the proper name, therefore, would almost certainly necessitate other changes in the line. This feature interlink across levels of the morpho-semantic hierarchy contributes to a verbal unit being preserved and transmitted in its own form (Drout 2013:102-10), but therefore makes adaptation of the line to other narrative contexts a somewhat more difficult process than adapting a non-interlinked line would be.

However, when read in terms of Mize's system, the phrases containing proper nouns become more visibly adaptable (and therefore appear to be more formulaic). For example, in line 609, "brego Beorht-Dena, gehyrde on *Beowulf*e," the alliteration on /b/ ties the name of the hero both to the genitive plural proper noun "*Beorht-Dena*" and to the noun "brego" [chief, lord]. Substituting a different hero's name for Beowulf would therefore require modifying both the word for lord and the genitive plural form of the people that lord ruled. Such a set of changes would indeed be challenging to perform in real time if the formulaic system were merely a collection memorized of half-lines. But if the formula is instead a generative system combining stress patterns, morphological elements and lexical features, the required changes are surprisingly easy to accomplish:

> [**synonym for ruler**] + [(**positive adjective or noun**) + (name of people + genitive plural)] ‖
> gehyrde on [**hero's name** + dative singular]

This formula provides a template that is lexical, metri-syntactic and phonological (alliterating elements are in boldface type). The poet is not required to search through an entire lexicon to identify three individual elements that would fit together; instead, the hero's name in the head-stave narrows the search space for the other elements. For example, if that name was Wulfgar, then the word for lord and the name of the that lord's people in the a-verse must alliterate on /w/, a condition that is easily met. Even a cursory glance at Stephen Barney's (1977) *Word-Hoard* or a search of the *Old English Thesaurus* shows a multitude of synonyms for *brego*, at least two of which alliterate on /w/ (*weard*, *wealdend*). The regular compounding of the names of peoples with either nouns or adjectives that indicate geographic location, glory, or martial prowess makes it simple to find a word with the appropriate alliteration for the first element in the compound (West is the most obvious). Thus if Wulfgar were the hero, the line could become **weard West-Dena / hyrde on Wulfgare*.

The formulaicity of line 613 is even easier to explain, since the underlying formula would simply be:

> **cwen** [king name + genitive plural] ‖ **cynna** gemyndig.

The line would still alliterate if Hrothgar's name were replaced with that of any king in the genitive plural: *cwen Wulfgares, cynna gemyndig, *cwen Beowulfes, cynna gemyndig, *cwen Finnes, cynna gemyndig*. Line 620 works the same way, and can be generated from an underlying formula of:

Ymbeode þa || **ides** [family-name + genitive plural]

The vocalic alliteration is determined by *ides* in the b-verse, so any family name can be substituted for the Helmings, for example, * *ides Wulfinga*, * *ides Scylfinga*. Both 620 and 613 thus alliterate on a generic word for queen or woman and allow open substitution of the personal or family name, providing great flexibility in adapting the passage to different stories containing different queens.

Adapting line 616, "ærest East-Dena eþelwearde," to some other context initially appears to be more difficult, since two substitutions would be required if the name of the people in the a-verse did not happen to alliterate. Vocalic alliteration, however, can be preserved by compounding any tribal name with a descriptive noun or adjective beginning with any vowel. The simplest and most obvious of these, used three times in *Beowulf*, is *East*: *East-Engla*, *East-Wedera, *East-Seaxna*. The element *eþel-* in the compound could very easily be replaced with one of many synonyms for native land or people, such as *þeod*, or with a synechdochic word like *hama* ("homes") or *hord* ("treasure"), producing a surface form like *Hring-Dena hamweard*. The underlying formula, then, would either be:

[**direction/characteristic** + people-name + genitive plural] || **eþelwearde**

or

[**direction/characteristic** + people-name + genitive plural] || [**thing being protected**] + wearde]

In line 631, "Beowlf maþelode bearn Ecgþeowes," *Beowulf*'s name in the a-verse requires alliteration on /b/ in the second half-line, making substitution of another name slightly more difficult than in lines 613 and 620. However, the word to which the proper name is alliteratively linked is a compound whose first element can be replaced with many possible synonyms while preserving the sense of the phrase. The underlying formula is:

þæt hio [**name** + dative singular] || [**treasure-word** + hroden] cwen

There are in the Old English corpus a significant number of treasure-words that could be combined with—*hroden* to create a compound with the necessary alliteration: *beag*, *gold*, and *sinc-hroden* are all attested, and *hring-*, *frætwe-*, *maþþum-*, *hord-*, and *wela-* would all preserve the sentence's meaning while enabling a different name to be substituted in the passage.

The double alliteration in the a-verse in "grette Geata leod, Gode þancode" (625) would at first appear to create a more substantial problem for replacing the name of the Geats with

some other people.[58] However, only a double, and not a triple substitution is needed as long as the name of the people does not alliterate on /g/.[59] The alliterating element in the a-verse is simply the name of the visiting people being greeted by the queen; that name must alliterate in the b-verse with a synonym for God—with which the Old English corpus is plentifully supplied. The underlying formula, then, is:

grette + [**people name** + genitive plural] leod ‖ [**Name for deity** + accusative singular] þancode

Similarly, in line 629, "wælreow wiga ‖ æt Wealhþeon," the double alliteration in the a-verse is not required, so another queen's name would only require a different initial compound adjective: *gromheort guma ‖ æt Godgifu*. If the passage was composed while poetic compounding was still a productive process in Old English (as seems likely for a variety of reasons, including the distribution of Ss/Sx verses), then the poet could create a compound with the necessary alliteration. Retaining the double alliteration in the a-verse might not even be difficult in this particular circumstance, as there are quite a few monosyllabic words for "warrior" that could alliterate with the initial poetic compound chosen to alliterate with the queen's name. The underlying formula for this line, then would be:

[**compound adjective**] wiga ‖ æt [**queen's name** + dative singular]

or

[**compound adjective**] [**word for warrior**] ‖ æt [**queen's name** + dative singular]

If the queen's name had fewer syllables or a significantly different stress pattern than "Wealhtheow," the insertion of an adjective might be required, but this would not be difficult, as there are many positive mono- and disyllabic adjectives that could easily be applied to a queen. Again, the key substitution elements—compound adjective and synonym for warrior—are not in short supply in the surviving lexicon of Old English.

We are thus left only to explain line 612, "word wæron wynsume ‖ eode Wealhþeo forð," the first line in which Wealhtheow's name is used. The anticipation of the queen's name by the triple alliteration on /w/ in the a-verse[60] would seem to imply that the line was composed specifically for this purpose and was not part of a formulaic set-piece into which the queen's name was substituted. We could even justify excluding this line from the putatively formulaic material, since the most compressed part of the passage begins with the next line. Finally, 612a is

---

[58] This line and the next seem slightly awkward. The combination of the expanded Sx/Sxs (Sievers Db) with a S/Sxx (Sievers Da) verse, may even suggest that the line as we have it is an adaptation of some earlier, tighter form instead of being composed specifically for this particular place in *Beowulf*.

[59] "Sievers' rule of precedence" requires that the initial verb *not* alliterate if the following noun does not, so *grette Huga leod*, *God þancode* would not be well formed (Fulk, Bjork, and Niles 2008:334). We are grateful to an anonymous referee for *Oral Tradition* for pointing this out.

[60] For discussion of verses with supplemental alliteration, see Orchard (1995).

the conclusion of a sentence that begins in line 611, so it seems that the poet would have had to anticipate needing a half-line that could alliterate with Wealhtheow's name at the same time that he was finishing a previous sentence. Closer examination of 612 and its immediate context, however, shows that even this seemingly customized line could easily be modified to accommodate a variety of queen names in the b-verse.

Line 612 has two functionally alliterating syllables in the a-verse, *word* and *wynsume*, and one in the b-verse, *Wealhtheow*'s name; the alliteration on *wæron* is ornamental. The core of the line could thus be generated from a simple substitution formula like those discussed above:

[**aspect of hall life** past-tense form of "to be" / [**positive adjective**] || eode [**Queen-name** / **ephithet**] forð

By "aspect of hall life," we mean any of the phenomena that, in Anglo-Saxon poetry, are associated with social activity in the mead-hall, including speech, laughter, music, song, joy, friendship, warmth, light, gold, wine, mead, beer, treasure (all of which are potential elements of the "joy in the hall" theme discussed below). A noun-adjective pair alliterating with the queens's name is required, but this can be constructed out of almost any positively connoted, monosyllabic alliterating nouns, since the second noun can be converted to an adjective by means of a suffix (Campbell 1959:263-72). Because the past-tense form of the verb "to be" does not take primary stress, the verb inserted between the two nouns is easily changed to monosyllabic *wæs* if the initial noun is singular. Finally, although 612a is grammatically linked to 611 while being alliteratively linked to 612b, the half-line is actually superfluous to the sentence of which it is a part; line 611 can stand alone grammatically without 612a. Compare line 1162, "win of wunderfatum || þa cwom Wealhþeo forð." The b-verse is nearly identical to 612b, but unlike 612a, 1162a is grammatically essential to the previous sentence. Without it, there is no object of the transitive verb *sealdon* in line 1161a.

We find, therefore, that lines containing a proper name and thus appearing to be specific to *Beowulf* can be rather straightforwardly converted to include different characters. Additionally, the words that must be modified in order to accommodate the lines to different names are, more often than not, drawn from semantic fields in which the Old English lexicon is particularly rich in synonyms. Lines 607-61, then, despite their inclusion of proper names, could easily be generic, the particular form of the passage in *Beowulf* just one instantiation of an underlying paradigmatic scene that could be readily adapted for any queen who enters any hall and passes the cup among any assembled happy warriors.

Lines 607-61 as a Theme or Type-Scene

In a 1976 study, Jeff Opland identified a "joy in the hall" commonplace in Old English poetry. This "theme" or "type-scene" is marked by the coincidence of a narrative pattern—a feast among warriors in a hall—with a cluster of lexical elements, including the words *dream* ("joy"), *gomen* ("mirth"), *gleo* ("glee"), *gyd / gied* ("song"), *sang / singan* ("song" / "to sing"), *sweg*

("sound" or "music"), *hearpe* ("harp"), and *scop* ("poet") (Opland 1976:446-57).[61] John Miles Foley (1983:690-91) extended Opland's argument, showing how the "joy in the hall" is used in The Seafarer to create an impression of loss by evoking the traditional connotations of the theme even as it is "negativized," thus evoking a sense of desolation. But despite their depiction of happy warriors at an indoor feast, lines 607-60 of *Beowulf* are not included in Opland's list of examples of "joy in the hall," and the passage is not discussed by Foley.

We can only infer the reasons for this omission, but it seems likely that the absence of harp music or singing made the passage seem too different from the other instances of "joy in the hall" identified by Opland and Foley. However, although there is no explicit mention of song or the music of the harp in lines 607-60, we do find the words *hlyn* ("sound"), *hleahtor* ("laughter"), and *swynsode* ("made a pleasing sound"). If traditional themes "are groupings of ideas rather than of words" (Foley 1985:42), then the passage, which includes social happiness and pleasant sounds in a hall, certainly seems to be very close to the other instances of "joy in the hall." Even if we use a more restrictive definition of theme that requires the grouping of both ideas and lexical items (Foley 1983:691), we find that that *Beowulf* lines 607-60 has the words *sweg* ("sound" or "music"), *hæleþ* ("warriors"), *duguþ* ("warriors"), and *geoguþ* ("young warriors") in common with some of the "joy in the hall" passages.[62] However, the word *sweg* is the only lexical item in "Wealhtheow's cup-bearing" that is among those listed by Opland; all of his "joy in the hall" passages share a minimum of three words (1976:449). It may be, therefore, that the combination of a slightly different idea-group (due to the lack of music) with the limited shared lexis made these lines of *Beowulf* sufficiently distinct from the other "joy in the hall" themes or type-scenes.

Another possible reason for Opland and Foley not identifying Wealhtheow's cup-bearing as an example of "joy in the hall" is the seeming specificity of the passage to *Beowulf* rather than being an example of a more generally applicable traditional commonplace or type-scene. However, three of Opland's eight "joy in the hall" passages also include proper nouns specific to *Beowulf*: the Danes and Weders, Healfdan, Hrothgar, Healgamen (if this is a proper name),[63] and the Scyldings. Only the last of these is not an alliterating element in its line.[64] Thus there appears

---

[61] These lexical elements can either stand alone or be parts of compounds like *gomenwudu* ("mirth-wood," that is, "harp").

[62] *Sweg* also appears in lines 89-9, 1063-68, and 3020-24; *hæleþ* also appears in lines 496-98, as does *duguþ*, and *geoguþ* can be found in lines 2105-10.

[63] In his third edition of *Beowulf*, Klaeber (1950 [1922]:170-71) interprets *healgamen* in line 1066 as a common noun meaning "entertainments in the hall." The fourth edition of the text, however, takes *Healgamen* to be the name of Hrothgar's *scop* (Fulk, Bjork, and Niles 2008:180-81).

[64] Opland states that he has identified seven passages, but one of these is a composite made of lines 1063-68 and 1159-61, which bracket the Finnsburg episode. The first of these includes references to Healfdane and Hrothgar, while the second is more generic, so, for the purposes of this essay, it seems better to count two separate instances here. The other generic examples of "joy in the hall" are lines 89-91, 2262-65, 2457-59, and 3020-24. The last three are all negative examples (that is, "there was no sound of the harp . . ."). Lines 496-98 contain references to Heorot and the Danes, and lines 2015-10 mention the Scyldings.

to be no obvious reason to exclude Wealhtheow's cup-bearing from the "joy in the hall" theme.[65] Indeed, we ourselves originally not only took the passage as a variant of "joy in the hall," but identified it as the archetypal instance of the topos in *Beowulf*, even going so far as to label the passage "Joy in the Hall" in another publication.[66] Based on the evidence surveyed above, however, we now interpret the passage as the only surviving example of a different, though related, type-scene: the "cup-bearing of a queen."

The Traditionality of Wealhtheow's Cup-Bearing

Although no single piece of evidence is dispositive, the distribution of vocabulary in the passage, its verbal economy and formulaic density, along with the concentrations of specific grammatical and metrical features, all combine to indicate that Wealhtheow's cup-bearing is qualitatively different than its surrounding matrix in *Beowulf*. This conclusion is further substantiated by the independence of the different kinds of evidence. Although the overall distribution of vocabulary could be in some way related to verbal economy, and, perhaps, formulaic density, hierarchical agglomerative cluster analysis is not affected by the distribution of infrequently used words and is therefore independent of the frequency of conjunctive *siþþan*, the Kaluza's Law and Ss/Sx verses, and verses containing an un-displaced finite verb. With the exception of the Kaluza's Law and Ss/Sx verses, between which there is some overlap, these features are also independent of each other. Therefore the clustering of all of these different variants in the same part of the poem is highly unlikely to be either a random occurrence or a set of epiphenomena of the concentration of just one feature.[67]

Previous scholars have associated the use of conjunctive *siþþan* and the presence of verses that follow Kaluza's Law, with relatively older Anglo-Saxon texts. The process of poetic compounding that underlies the Ss/Sx verse-type was more active earlier in the Old English period than it was later. Proportionally greater verbal economy and formulaic density are regularly assumed to be indicative of a text's relative proximity to oral tradition and thus, in the

---

[65] In part, not identifying Wealhtheow's cup-bearing as an example of "joy in the hall" may just be a manifestation of the lack of agreement within oral traditional theory as to how to define, recognize and classify the structures and sub-units of traditional works. Scholars do not even agree completely on the *size* of traditional "multiforms." Although Milman Parry and Albert Lord (1960:68) originally restricted the identification of formulas to identical metrical conditions, Lord also discussed much larger-scale "themes" that were groupings of ideas. More recent work has identified much larger formulaic entities (Honko 1998:102-14), even to the point where complete songs can be traditional multiforms (Foley 1998). Oral traditional theory does recognize a gradation in size of formulaic units ranging from the phraseological to the overarching narrative pattern, but how this continuum should be subdivided and its units taxonomized is an unresolved problem. Even within the narrower field of Old English studies there is little agreement on the differences between theme, type-scene, commonplace and motif (although see Foley 1988 74). However, in this particular case both Opland and Foley seem to agree upon the characteristics of the theme. For additional discussion see Ritzke-Rutherford's (1981a and 1981b) discussion of formulaic micro- and macrostructure and the essays in *Oral Literature and the Formula* (Stolz and Shannon 1976).

[66] It is both ironic and embarrassing that we picked the single instance of hall-happiness that is not on Opland's list to label "Joy in the Hall" (Drout et al. 2016:25, 31).

[67] Even if all the other pieces of evidence were merely epiphenomena of one, that concentration would still need to be explained.

context of Anglo-Saxon poetry, composed earlier in the period. The simplest explanation for the concentration of all of these features in lines 607-61 would be that the poet who created the archetype of *Beowulf* drew upon an older source for Wealhtheow's cup-bearing.

This interpretation cuts against the grain of a general scholarly consensus, which for nearly a century has strongly resisted the idea that *Beowulf* could be in any meaningful way a composite. Editors and commentators have repeatedly asserted, in no uncertain terms, that "scholarship is justified in regarding *Beowulf* as a unified composition" (Fulk, Bjork, and Niles 2008:xci).[68] This certainty is somewhat surprising. Many contemporary *Beowulf*-scholars—often the same ones who reject the notion of a composite poem—have supported the idea that nothing about the poem is certain (indeed, the supposed indeterminacy of the text has been celebrated).[69] However, the long-recognized medieval practice of *compilatio*, the incorporation of previously existing material into texts, is well documented in Anglo-Saxon poetry. Most famously and uncontroversially, Eduard Sievers' identification of *Genesis B* within the earlier *Genesis A* showed how one text could be inserted into another without any explicit indication in the manuscript. *Daniel* (Drout and Chauvet 2015), *Guthlac A* (Downey et al. 2012) and *Christ III* (Drout et al. 2011) also contain sections that either ante- or post-date the main body of the poems. In *Beowulf* itself, the Finnsburg episode almost certainly has an ultimate source different from the majority of the text,[70] and the conclusion that the description of Grendel's mere is derived from a lost Old English translation or poetic treatment of the *Visio Pauli* is widely, if not universally, accepted (Wright 1993). The possibility that Wealhtheow's Cup-Bearing has a different source than the rest of *Beowulf* should not, therefore, be a particularly radical claim.

Indeed, a different transmission history for these lines is the simplest explanation for not only all of the evidence discussed above, but also for the otherwise odd phenomenon of the passage being left out of lists of "joy in the hall" themes despite including both a hall and joy, as well as comradeship and sounds of happiness. We can infer that Opland and Foley, as well as subsequent scholars who have discussed "joy in the hall," intuited that there was something qualitatively different about Wealhtheow's cup-bearing.

Were it not for the distribution of *þ* and *ð*, that qualitative difference would be most easily explained by the passage being an insertion of a written version of a type scene. However, the apparent conflict between the evidence of orthographic variation and all the other concentrations of features could be harmonized if lines 607-61 were influenced by a source, but that source was not written. If the author of *Beowulf*, who was obviously skilled in the composition of Old English verse, had internalized a formulaic type-scene in which a queen enters a hall and passes the cup of fellowship to the assembled happy retainers, his application of this theme to the demands of *Beowulf* would produce a passage whose grammar, vocabulary distribution, meter,

---

[68] Among many others, see Fulk (2003:16-24 **[AQ: There is a Fulk 1992 in the references list and a Fulk, Björk, and Niles 2008 in the references, but not this one. Could you provide a citation for Fulk 2003]**).

[69] See the discussion in Frantzen (2014:239-45). For celebrations of the indeterminacy of the text, see Howe (1997) and Earl (1994:16-17).

[70] Although Fulk, Bjork, and Niles (2008:lxxxvii) dismiss the idea that the Finnsburg episode was a separate lay "inserted" into *Beowulf*, they accept that the poet has "reworked the material thoroughly and in original ways," tacitly accepting that there was a source to rework. For additional discussion, see Drout et al. (2016:62-63).

and formulaicity would then be different from the other material that he composed that did not have such a source.[71] Such an internalized template would not affect the distribution of þ and ð in the text.

Part of the appeal of this interpretation is that it explains how *Beowulf* could come to be characterized by varying densities of oral-traditional features. A tradition-fluent poet would mobilize the underlying oral tradition to different degrees in different compositional situations. At times only elements at the two ends of the morpho-semantic hierarchy might be used: the formulaic system and the abstract, overarching narrative pattern. But at other points, the poet could use set-pieces—such as sea-voyages, greetings, the exchange of gifts or the entrance of a queen into a hall—as more or less fully formed, feature-interlinked templates integrating material at multiple levels of the morpho-semantic hierarchy. These would include not just the grouping of ideas and lexical items (as per Foley's discussion of themes), but also the arrangement of these entities into somewhat more detailed formulaic patterns (as per Mize's *q formulae*). If the poet was also highly literate and thus influenced by a range of written sources (in both Latin and Anglo-Saxon), as he seems to have been, we would expect to find exactly what we do see in *Beowulf:* clusters and absences of various features in a blend of intellectual and literary traditions.

But exactly because such an interpretation is so appealing, we should be cautious in accepting it. Although our identification of clusters of features is as objective as it is possible to be in humanistic research, it could still be the result of confirmation bias. If the distribution of various features is random, there will eventually be some correlated absences or concentrations: if you fish in the pool of random numbers long enough, you will catch something. That we did not proceed in that fashion in this research (quite the opposite: we resisted until the last the idea that there was anything unusual about the passage and even mistakenly identified it as just another example of the "joy in the hall" theme), gives us some confidence that the patterns we have identified are real and significant, but we cannot be certain.

Another potentially substantial problem is that we appear to be suggesting that the type-scene would have been transmitted in near verbatim form, and this interpretation seems to violate what could be called the central dogma of the theory of oral composition: that oral traditions are not characterized by verbatim memorization of long passages (Hunter 1984 and 1985).[72] Indeed most investigations of type-scenes in Old English find exact repetition only at the lower and higher levels of the morpho-semantic hierarchy, in lexical elements, half- or single-line formulas at one extreme and in abstract idea groups at the other (Opland 1976; Foley 1983; Magoun 1953; Fry 1968; for a summary of previous approaches, see Foley 1988:69-74). The "cup-bearing of a queen," however, has a more linear narrative logic than "joy in the hall" or "the beasts of battle": for the scene to make sense, the participants must be introduced in a certain order.[73] That

---

[71] As Mize (2013:26 n.55) notes, all the characteristics of oral tradition in Anglo-Saxon—as delineated by Niles (1992 **[AQ: There is a Niles 1981 in the references but not Niles 1992; could you provide the reference?]**)—are just as consistent with "active, robust poetic traditionality" as they are with orality.

[72] For additional discussion, see Goody (1987:87-91).

[73] See Rubin (1995:24-28) for discussion of how such narrative "scripts" help to structure and mnemonically preserve oral traditions.

requirement is an additional constraint on variation, as is the formulaic density of the passage. The more tightly interwoven, at multiple levels of the morpho-semantic hierarchy, a passage becomes, the more difficult it is for variation to arise (see Rubin 1995:208-10; Drout 2013:102-10). Familiarity with such a highly traditional, interlinked type-scene could affect a poet's normal composition process, causing the appearance of different frequencies of features in the type-scene than in the sections of the poem without such an influence. Furthermore, if the formal qualities of a type-scene cause it to be replicated in its own form, then that particular form is likely to be committed to memory. A sufficiently tightly interlinked passage would thus not only seem like a verbatim reproduction, but might eventually become one as the passage was passively memorized. In the absence of comparanda, it is impossible to tell to what degree the "cup-bearing of a queen" type-scene was so cross-linked, and there must have at least been sufficient flexibility to allow for the adaptation of the scene to different narrative contexts.

At this stage of our knowledge, the most parsimonious explanation for the different pieces of evidence (both independent and inter-related) is that the *Beowulf*-poet had an unwritten, highly traditional source for lines 607-60 of the poem. As per Opland's and Foley's description of the "joy in the hall" theme or type-scene, this "cup-bearing of a queen" included both the narrative pattern (the plot of a queen entering a hall and passing the cup) and a group of ideas (joy, a hall, warmth, enjoyable sounds, friendship, social unity) with their associated words. But unlike the other instances of "joy in the hall," the lexical items in the *Beowulf*-poet's internalized "cup-bearing of a queen" were incorporated into half- and full-line formulas interlinked semantically, morpho-syntactically, metrically, and phonologically, both to each other and to the type-scene as a whole. This interlinkage across different levels of a morpho-semantic hierarchy explains how such a set-piece could be adapted to the particular demands of an individual narrative while preserving many specific features of the underlying tradition.

If the "cup-bearing of a queen" did exist as such a set-piece, we may infer that the entrance of a queen into a hall to pass the cup of friendship was a common enough feature of heroic poetry that it was internalized by the creator of *Beowulf*. That the other queens in *Beowulf* (Hildeburh, Hygd, Fremu, and perhaps Freawaru) are not given such scenes may therefore be variants of the "negativized" use of a theme similar to what Foley identified in *The Seafarer's* inversion of "joy in the hall." If this is the case, then the poet is contrasting Wealhtheow to the other queens in the poem. At the very least, the absence of the "cup-bearing of a queen" theme in the introductions of the other queens shows that the poet was not a slave to his tradition, even when that tradition was so strong that he internalized it.

Given the lack of comparative data, such inferences may be stretching the evidence too far. But even if we accept only the more narrow conclusion that lines 607-61 are a formulaic set-piece, we can recognize that the linguistic and metrical tightness and verbal efficiency that we observe in every aspect of the passage are produced by the interaction of a long-developed tradition with an individual poet. Wealhtheow's cup-bearing is a single instantiation of a multiform, shaped and polished by many minds and cultural transmissions, a pebble worn smooth by the stream of tradition.

Wheaton College, Massachusetts

References

Amodio 2005   Mark Amodio. *Writing the Oral Tradition: Oral Poetics and Literary Culture in Medieval England*. South Bend, IN: University of Notre Dame Press.

Barney 1977   Stephen Barney. *Word-Hoard: An Introduction to Old English Vocabulary* New Haven, CT: Yale University Press.

Bately 1985   Janet Bately. "Linguistic Evidence as a Guide to the Authorship of Old English Verse: A Reappraisal, with Special Reference to *Beowulf*." In *Learning and Literature in Anglo-Saxon England: Studies Presented to Peter Clemoes on the Occasion of his Sixty-Fifth Birthday*. Ed. by Michael Lapidge and Helmut Gneuss. Cambridge: Cambridge University Press. pp. 409-31.

Benson 1966   Larry D. Benson. "The Literary Character of Anglo-Saxon Formulaic Poetry." *Pulications of the Modern Language Association*, 81:224-41.

Berger and Drout 2015   Rosetta Berger and Michael D.C. Drout. "A Reconsideration of the Relationship Between *Víga-Glúms Saga* and *Reykdœla Saga*: New Evidence from Lexomic Analysis." *Viking and Medieval Scandinavia*, 11 (2015):1-32.

Bliss 1967 [1958]   Alan J. Bliss. *The Metre of* Beowulf. Oxford: Blackwell.

Bonjour 1965   Adrien Bonjour. *The Digressions in* Beowulf. Oxford: Blackwell.

Boyd et al. 2014 [2012]   Phoebe Boyd, Michael D.C. Drout, Namiko Hitotsubashi, Michael J. Kahn, Mark D. LeBlanc and Leah Smith. "Lexomic Analysis of Anglo-Saxon Prose: Establishing Controls with the Old English Penitential and the Old English translation of Orosius." *Revista de la Sociedad Española de Lengua y Literatura Inglesa Medieval (SELIM)*,19 (2012 [2014])*:*7-51.

Campbell 1959   Alistair Campbell. *Old English Grammar*. Oxford: Clarendon Press.

Campbell 1962   _____. "The Old English Epic Style." In *English and Medieval Studies Presented to J.R.R. Tolkien on the Occasion of his Seventieth Birthday*. Ed. by Norman Davis and C. Wrenn. London: Allen and Unwin. pp. 13-26.

Chambers 1959   R. W. Chambers. Beowulf*: An Introduction to the Study of the Poem with a Discussion of the Stories of Offa and Finn*. Cambridge: Cambridge University Press.

Clark 2014   George Clark. "Scandals in Toronto: Kaluza's Law and Transliteration Errors." In *The Dating of* Beowulf*: A Reassessment*. Cambridge: D. S. Brewer.

Crowne 1960   David K. Crowne. "The Hero on the Beach: An Example of Composition by Theme in Anglo-Saxon Poetry." *Neuphilologische Mitteilungen*, 61:362-72.

Downey et al. 2012   Sarah Downey, Michael D. C. Drout, Michael J. Kahn, and Mark D. LeBlanc. "'Books Tell Us': Lexomic and Traditional Evidence for the Sources of Guthlac A." *Modern Philology*, 110:153-81.

Downey et al. 2014   Sarah Downey, Michael D.C. Drout, Veronica Kerekes, and Douglas Raffle. "Lexomic Analysis of Medieval Latin Texts." *Journal of Medieval Latin*, 24:225-74.

Drout 2011   Michael D. C. Drout. "Variation within Limits: An Evolutionary Approach to the Structure and Dynamics of the Multiform." *Oral Tradition*, 26:447-74. http://journal.oraltradition.org/issues/26ii/drout

Drout and Chauvet 2015   Michael D. C. Drout and Elie Chauvet, "Tracking the Moving Ratio of þ to ð in Anglo-Saxon Texts: A New Method, and Evidence for a Lost Old English Version of the *Song of the Three Youth*s." *Anglia*, 133.2:278-319.

Drout et al. 2011   Michael D.C. Drout, Michael J. Kahn, Mark D. LeBlanc, and Christina Nelson. "Of Dendrogrammatology: Lexomic Methods for Analyzing the Relationships Among Old English Poems." *Journal of English and Germanic Philology*, 110:301-36.

Drout et al. 2016   Michael D.C. Drout, Yvette Kisor, Leah Smith, Allisson Dennett, and Natasha Piirainen. Beowulf *Unlocked: New Evidence from Lexomic Analysis*. New York: Palgrave.

Drout, Boyd, and Bowman 2014   Michael D.C. Drout, Phoebe Boyd, and Emily Bowman. "'Give the People What They Want': Historiography and Rhetorical History of the Dating of *Beowulf* Controversy." In *The Dating of Beowulf: A Reassessment*. Ed. by Leonard Neidorf. Cambridge: D. S. Brewer. pp. 157-77.

Dyer 2002   Betsey Dexter Dyer. *"Blunt End" Genome Technology 1.27*. Accessed November 2014. http://www.genomeweb.com/

Earl 1994   J. W. Earl. *Thinking About* Beowulf. Stanford, CA: Stanford University Press.

Fjalldal 1998   Magnús Fjalldal. *The Long Arm of Coincidence: The Frustrated Connection between* Beowulf *and* Grettis Saga. Toronto: University of Toronto Press.

Foley 1978   _____. "A Computer Analysis of Metrical Patterns in *Beowulf*." *Computers and the Humanities*, 12:71-80.

Foley 1983   _____. "Literary Art and Oral Tradition in Old English and Serbian Poetry." *Anglo-Saxon England*, 12:183-214.

Foley 1985   _____. *Oral Formulaic Theory and Research: An Introduction and Annotated Bibliography*. New York: Garland.

Foley 1988   _____. *The Theory of Oral Composition: History and Methodology*. Bloomington: Indiana University Press.

Foley 1990   _____. *Traditional Oral Epic: The* Odyssey, Beowulf, *and the Serbo-Croatian Return Song.* Bloomington: Indiana University Press.

Foley 1991   _____. *Immanent Art: From Structure to Meaning in Traditional Oral Epic*. Bloomington: Indiana University Press.

Foley 1998   _____. "Individual Poet and Epic Tradition: Homer as Legendary Singer." *Arethusa*, 31:149-78.

Foley 2002   _____. *How to Read an Oral Poem*. Urbana: University of Illinois Press.

Frank 2007   Roberta Frank. "A Scandal in Toronto: The Dating of *Beowulf* a Quarter Century On." *Speculum*, 82:843-64.

Frantzen 2014   Allen J. Frantzen. "Afterword: *Beowulf* and Everything Else." In *The Dating of* Beowulf: *A Reassessment*. Ed. by Leonard Neidorf. Cambridge: D. S. Brewer, pp. 235-47

Fry 1967   Donald K. Fry. "Old English Formulas and Systems." *English Studies*, 48:193-204.

Fry 1968   _____. "Old English Formulaic Themes and Type-Scenes." *Neophilologus,* 52.1:48-54.

Fulk 1992   R. D. Fulk. *A History of Old English Meter*. Philadelphia: University of Pennsylvania Press.

Fulk 2003   R. D. Fulk. "On Argumentation in Old English Philology, with Particular Reference to the Editing and Dating of *Beowulf*." *Anglo-Saxon England*, 32:1-26.

Fulk, Bjork, and Niles 2008   R. D. Fulk, Robert E. Bjork, and John D. Niles. *Klaeber's* Beowulf, *Fourth Edition*. Toronto: University of Toronto Press.

Gneuss and Lapidge 2014   Helmut Gneuss and Michael Lapidge. *Anglo-Saxon Manuscripts: A Bibliographical Handlist of Manuscripts and Manuscript Fragments Written or Owned in England up to 1100*. Toronto: University of Toronto Press.

Goody 1987   Jack Goody. *The Interface Between the Written and the Oral*. Cambridge: Cambridge University Press.

Griffith 2016   Mark Griffith. "Alliterating Finite Verbs and the Origin of Rank in Old English Poetry." In *Old English Philology: Studies in Honour of R. D. Fulk*. Ed. by Leonard Neidorf, Rafael J. Pascual, and Tom Shippey. Woodbridge, Suffolk: D.S. Brewer. pp. 103-21.

Honko 1998   Lauri Honko. *Textualizing the Siri Epic*. Helsinki: Academia Scientiarum Fennica.

Howe 1997   Nicholas Howe. "The Uses of Uncertainty: On the Dating of *Beowulf*." In *The Dating of Beowulf*. Ed. by Colin Chase. Toronto: University of Toronto Press pp. 213-20.

Hunter 1984   I. M. L. Hunter. "Lengthy Verbatim Recalled (LVR) and the Mythical Gift of Tape-Recorded Memory." In *Psychology in the 1990's*. Ed. by K.M.L. Lagerspetz and P. Niemi. Amsterdam: North Holland. pp. 425-40.

Hunter 1985   _____. Length Verbatim Recall: The Role of Text." In *Progress in the Psychology of Language*. *Volume I*. Ed. by A. Ellis. Hillsdale, NJ: Erlbaum. pp. 207-35.

Hutcheson 1995   Bellender Rand Hutcheson. *Old English Poetic Metre*. Cambridge: D. S. Brewer.

Kaluza 1896   Max Kaluza. "Zur Betonungs- und Verslehre des Altenglischen." In *Festschrift zum siebzigsten Geburtstage Oskar Schad*e. Königsberg: Hartung. pp. 101-34.

Ker 1957   N. R. Ker. *Catalogue of Manuscripts Containing Anglo-Saxon*. Oxford: Clarendon Press.

Kiparsky 1976   Paul Kiparsky. "Oral Poetry: Some Linguistic and Typological Considerations." In *Oral Literature and the Formula*. Ed. by Benjamin A. Stolz and Richard S. Shannon. Ann Arbor, MI: Center for the Coördination of Ancient and Modern Studies. pp. 73-106.

Kisor 2009   Yvette Kisor. "Numerical Composition and *Beowulf*: A Reconsideration." *Anglo-Saxon England*, 38:41-76.

Klaeber 1950 [1922]   Frederick Klaeber. Beowulf *and the Fight at Finnsburg*. 3rd ed. Lexington, MA: D. C. Heath.

Lord 1960   Albert B. Lord. *The Singer of Tales*. Cambridge, MA: Harvard University Press.

Lord 1986   _____. "Perspectives on Recent Work on the Oral Traditional Formula." *Oral Tradition*, 1:467-503.

Magoun 1953   Francis Peabody Magoun. "The Oral-Formulaic Character of Anglo-Saxon Narrative Poetry." *Speculum*, 28:446-67.

Mize 2013   Britt Mize. *Traditional Subjectivities: The Old English Poetics of Mentality*. Toronto: University of Toronto Press.

Neidorf 2013   Leonard Neidorf. "Beowulf before *Beowulf:* Anglo-Saxon Anthroponymy and Heroic Legend." *Review of English Studies*, 64:553-73.

Neidorf and Pascual 2014   Leonard Neidorf and Rafael J. Pascual. "The Language of *Beowulf* and the Conditioning of Kaluza's Law." *Neophilologus*, 98.4:657-73.

Nikolaev 2016   Dmitry Nikolayev. "A New Algorithm for Extracting Formulas from Poetic Texts and the Formulaic Density of Russian Bylinas." *Oral Tradition,* 30.1:111-36.

Niles 1981   John D. Niles. "Formula and Formulaic System in *Beowulf*." In *Oral Traditional Literature: A Festschrift for Albert Bates Lord*. Ed. by John Miles Foley. Columbus, OH: Slavica. pp. 394-415.

Niles 1992   John D. Niles. "Toward an Anglo-Saxon Oral Poetics." In *De Gustibus: Essays for Alain Renoir*. Ed by John Miles Foley. New York: Garland. pp. 359-77.

Opland 1976   Jeff Opland. "Beowulf on the Poet." *Mediaeval Studies*, 28:442-67.

Orchard 1995   Andy Orchard. "Artful Alliteration in Anglo-Saxon Song and Story." *Anglia-Zeitschrift für englische Philologie*, 113:429-63.

Orchard 2003   _____. *A Critical Companion to* Beowulf. Cambridge: D. S. Brewer.

Ritzke-Rutherford 1981a   Jean Ritzke-Rutherford. "Formulaic Microstructure: The Cluster." In *The Alliterative* Morte Arthure*: A Reassessment of the Poem*. Ed. by Karl Heinz Göller. Cambridge: D. S. Brewer. pp. 70-82.

Ritzke-Rutherford 1981b   _____. "Formulaic Macrostructure: The Theme of Battle." In *The Alliterative* Morte Athure*: A Reassessment of the Poem*. Ed. by Karl Heinz Göller. Cambridge: D. S. Brewer. pp. 83-95.

Roberts 2005   Jane Roberts. *Guide to Scripts used in English Writings up to 1500*. London: The British Library.

Rubin 1995   David C. Rubin. *Memory in Oral Traditions: The Cognitive Psychology of Epic, Ballads and Counting-out Rhymes*. Oxford: Oxford University Press.

Russom 1998   Geoffrey Russom. Beowulf *and Old Germanic Metre*. Cambridge: Cambridge University Press.

Schücking 1905   Levin Schücking. Beowulfs *Rückkehr: eine kritische Studie*. Halle: Max Niemeyer.

Sievers 1893   Eduard Sievers. *Altgermanische Metrik*. Halle: Max Niemeyer.

Stolz and Shannon 1976   Benjamin A. Stolz and Richard S. Shannon, eds. *Oral Literature and the Formula*. Ann Arbor, MI: Center for the Coördination of Ancient and Modern Studies.

Tolkien 2014   J. R. R. Tolkien. Beowulf*: A Translation and Commentary*. Ed. by Christopher Tolkien. Boston, MA: Houghton Mifflin.

Vikis-Freibergs and   Vaira Vikis-Freibergs and Imants Freibergs. "Formulaic Analysis of the
     Freibergs 1978   Computer-Accessible Corpus of Latvian Sun Songs." *Computers and the Humanities*, 12.4:329-39.

Wright 1993   Charles J. Wright. *The Irish Tradition in Old English Literature*. Cambridge: Cambridge University Press.