Isochrony in Old English Poetry:
Two Performances of *Cædmon's Hymn*

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In an argument for the development of a specifically oral poetics, the anthropologist and ethnopoeticist Dennis Tedlock concludes that "oral poetry begins with the voice and an oral poetics returns to the voice" (1977:517). Tedlock insists that the restoration of ancient oral poetry must be participatory: "Before the Renaissance, to 'read' or to 'study' a text meant *pronouncing the words aloud*, and that is what philologists must now do with ancient . . . texts" (516).[1] This stress on the centrality of oral performance as the touchstone of critical discourse about oral literature, that is, that an ancient text "must be judged not on the basis of its acceptability as silent written literature, but on the basis of how it sounds when read aloud . . ." (516), has important implications for students of Old English prosody (among many others, and including folklorists, classicists, and anthropologists).

Tedlock's position is supported by the folklorist Richard Bauman (1986:8; emphasis added):

> . . . the essence of oral literature, including its artfulness, is not to be discovered in folklore texts as conventionally conceived, but in lived performances. In respect to form, for example, a performance orientation has led to discoveries of patterning principles realized in performance but obscured by older notions of verbal texts—features of *prosody* and paralanguage, of dialogue construction, of oral characterization.

Indeed, as Ruth Finnegan stresses (1977:133):

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[1] In a long and closely argued essay, Paul Saenger demonstrates by means of documentary and iconographic evidence that silent reading gradually became the norm during the High Middle Ages (the eleventh through thirteenth centuries) (1982:384), stimulated by the development of scholasticism (383). For the early Middle Ages, the period with which we are concerned here, Saenger concurs with Jean Leclercq and Giles Constable that "monks . . . of the earlier Middle Ages had habitually read aloud even when they read privately" (368).

> . . . *performance* in oral art . . . is what distinguishes it from written forms, and it is here, *as well as* in the bare text, that one must look for the stylistic characteristics of a genre of poem or an individual poet's art. It is also in the aspect of performance . . . that one can find the constraints [in this case, prosodic] and opportunities according to which an individual poet produces his compositions and his audience appreciates them.

From the days of Eduard Sievers and Andreas Heusler to the present, critical opinion about the nature of the Old English metrical system has been sharply divided, particularly over the key issue of isochrony, that is, whether or not the two measures in each verse or halfline are to be performed with equal duration.[2] In an attempt to "return the voice" to this controversial area, I have made a technologically-assisted study of two modern performances of *Cædmon's Hymn* to determine whether such a study might be able to shed some light on this longstanding difference of scholarly opinion.[3]

Only in the last few years have reliable technological means for studying the prosodic features of spoken language become available, and little has as yet been done to apply these new techniques to the analysis of oral performance of literature, and, in particular, of poetry. Therefore, initially I chose to work with the older, well-established, readily accessible technology of the sound spectrograph, developed by Bell Laboratories. This device makes speech visible by analyzing complex sound waves recorded on magnetic tape, one band of frequencies at a time. The simple oscillations separated out from the complex wave are transcribed side by side by a stylus attached to the filter output and resting on electrically sensitive paper wrapped around a rotating drum. The result is a tracing of varying shade (rather than an oscillating line) that is a visible pattern of the three fundamental dimensions of sound—frequency or pitch, intensity or

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[2] For accessible, concise reviews of the theories and controversies concerning the scansion of Old English poetry, see Ogilvy and Baker 1983:111-25 and Hoover 1985:ch. 1 *passim*. Hoover, in particular, contrasts the major isochronous theories with the major non-isochronous theories. Hoover himself belongs to the second camp, regarding isochronicity as "improbable" (3) and positing that the sole metrically significant feature of Old English poetry is alliteration.

[3] It is not my purpose here to argue the merits of the isochronous and anisochronous theories of Old English metrics, but rather to bring a new methodology to bear on this old controversy and to explore its potential fruitfulness for the study of this issue and (eventually) other questions pertinent to the understanding of Old English prosody.

amplitude, and duration.

The use of the sound spectrograph for my purposes had its drawbacks. First, it was quite difficult to learn to recognize significant patterns in what appears at first glance to be a series of random smudges. Second, the spectrograph indicates amplitude by the darkness or lightness of the smudge in question, leaving the analysis of sounds close in intensity a matter of judgment. Awkward as the sound spectrograph is, it has occasionally been used in studies of interest to those involved in the analysis of performance. For example, George E. McSpadden used the sound spectrograph to analyze the speech rhythms of the poet Jorge Guillén's reading of his poem "Gran Silencio." This study identifies in one five-line poem eight distinct rhythmical patterns that are, virtually without exception, "accurate to a hundredth of a second," leaving McSpadden to conclude that this "precise timing" is due not to "any forced effect on the part of the poet," but in all likelihood is inherent in the language itself, in this case Spanish (1962:227).

Because, then, of the deficiencies of the sound spectrograph, I chose to pursue this study using a much more recently developed technology, the Visi-pitch, an inexpensive way to abstract pitch and amplitude from a sample of speech.[4] Unlike the sound spectrograph, which provides the fundamental frequency plus all harmonics in a series of bands, the Visi-pitch yields but two separate oscillating lines, one tracing amplitude over time and the other, fundamental frequency. While it does not provide the harmonics (an unnecessary refinement at this stage of the investigation of the sounds of orally performed literature), the Visi-pitch has several real advantages. It is relatively inexpensive; its output of two simple oscillating lines is easy to interpret; it works in real time. Therefore, the tracings of an entire performance of *Beowulf* could be made in little more than the time required to read the poem. The manual interpretation of the resulting data is a simple task, although if the performance to be analyzed is not brief, such analysis undertaken manually could be time-consuming and tedious. (Computer software is available to facilitate the analysis of lengthy samples.)

Therefore, in part for its brevity, I have chosen the Moore MS version of *Cædmon's Hymn* (MS Cambridge, University Library, KK.5.16),

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[4] I have been fortunate in obtaining the assistance of Professor George Herman of Bowling Green State University and of the engineers of Kay Elemetrics and Voice Identification, Inc., who have processed tape recordings for me without charge so that I can assess the utility of this technology in addressing the questions of performance that interest me.

rather than, say, *Beowulf*, as the text for my pilot project.[5]   This choice enabled me to interpret the Visi-pitch data without resorting to computer assistance.

Cædmon's Hymn, moreover, is nearly ideal for my purposes from a theoretical point of view as well. First, it is the "earliest documented oral poem in Old English" (O'Keeffe 1987:1) and the only Old English poem (with the possible exception of Bede's "Death Song") for which a context describing the processes of oral composition and performance exists. No matter how we interpret the apparent miracle of angelic intervention in the genesis of this poem, we can confidently consider it a work intended from its beginning for oral performance. Second, unlike almost all other Old English poems that are extant only in single manuscripts and those frequently damaged, *Cædmon's Hymn*, by virtue of being embedded in Bede's very widely circulated *Historia ecclesiastica gentis Anglorum*, has come down to us in fourteen manuscripts, copied in England over a period of four centuries in two dialects (*ibid.*:2). I have specifically chosen to work with the Northumbrian Moore MS text (CUL KK.5.16), because, as O'Keeffe points out, CUL KK.5.16 (along with Leningrad Q.v.I.18) is the earliest surviving manuscript of Bede's work and, as such, is of critical importance as witness to the original language of the poem (9).

In the future it will, of course, be possible to compare readings of the *Hymn* in Northumbrian and West Saxon, an exercise that might possibly be enlightening given O'Keeffe's contention that the variability noted in the *AE group of West Saxon texts of *Cædmon's Hymn* stems from their appearance in a purely vernacular environment, a "vernacular whose character as a living language kept it close to the oral status which until fairly recently was its only state" (15). She judges the variants found in the written texts of *Cædmon's Hymn* to be "metrically, syntactically, and semantically appropriate" (16). Technologically assisted comparisons of these variant texts may perhaps shed light on the metrical appropriateness that O'Keeffe finds in the various alternative readings found in the texts, although it may well be that the dialectal differences are too minor to have any detectable impact on the underlying metrical patterns of the poem.

For my present purpose, which is primarily to test the feasibility of the Visi-pitch technology as a suitable methodology for approaching the problems posed by the study of Old English metrics, I have limited my sample to two recordings of *Cædmon's Hymn* made specifically for this project by Professors Thomas M. Cable of the University of Texas-Austin

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[5] See Appendix A for text.

and Robert P. Creed of the University of Massachusetts-Amherst.[6]   I selected these two readers because they are both well-known theorists in the field of Old English metrics. Each was asked to perform the text in the light of his own theoretical assumptions, and the resulting performances vary markedly in aesthetic impression.

Although the Visi-pitch tracings made of both readings provide data on frequency and amplitude as well as on duration, I have chosen to limit myself at this time to an analysis of duration, since the controversial issue of whether or not Old English poetry is isochronous seems to be the aspect of Old English metrics most amenable to exploration by the specific technological means at my disposal. While it is obvious that Old English poetry and indeed all extant early Germanic poetry is not isosyllabic, it is nonetheless a matter of vigorous disagreement whether metrical units, notwithstanding their irregularity in number of syllables, could possibly be pronounced in regular periods of time. Most recent arguments for the isochrony of Old English poetry have been based largely on John C. Pope's theory of performance as expounded in *The Rhythm of* Beowulf (1943), which holds that light measures, those with few syllables, were filled out with rests, such rests being marked by strokes of the lyre, so that all measures were thus equal in elapsed time and further that all measures must begin with an accent, again a lyre-stroke being supplied if the measure would otherwise begin with a syllable incapable of bearing an accent.

Pope's lead has been followed by Robert P. Creed, one of the two metrical theorists who performed for this study, who states in an essay published in 1966 (24) that:

> Every measure theoretically requires the same speaking time as every other, no matter how many, or how few, syllables it contains. . . .
>   The stress-patterns are imposed on these isochronous measures. The stress patterns do *not* vary according to the *number* of syllables in a measure. . . .

Creed then agrees with Pope in proposing two equivalent measures per halfline of Old English poetry, each beginning with a primary stress with lyre-strokes providing the ictus whenever an initial word cannot bear stress

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[6] The recordings and the sound spectrograms and Visi-pitch analyses made of them remain in my possession and are not available commercially. I am, of course, exceedingly grateful to Thomas M. Cable and Robert P. Creed for their generous assistance in this project.

and filling out a measure that lacks a final stressed element.[7]

In 1982 Creed stated his position even more categorically (27):

> It is now possible to say that, theoretically, *every measure in* Beowulf *is equal to every other measure. . . .* Every measure is equal to every other both in the perceived time it takes to perform it *and also in its structure*.

As is clear from the above, Creed assumes "that the *measure*, not the verse, provides the most significant clue to the simplicity of Old English prosody" (1966:23).

In his most recent statement on Old English prosody, *Reconstructing the Rhythm of* Beowulf (1990), Creed reaffirms his support for Pope's "conjecture" about the nature of Old English metrical practice and claims to have "developed a way of turning Pope's conjecture into a hypothesis and testing it" (203). In order to do so and simultaneously to recover and verify the editorial principles used by John Mitchell Kemble, who provided the lineation upon which all modern editions of *Beowulf* are based, Creed developed a computer program that would lineate the manuscript (which was, of course, not lineated) according to a series of fixed rules that he extrapolated from Kemble's printed line divisions.

Creed argues logically that all modern attempts to scan *Beowulf* are based on the lines and halflines as printed in modern editions, not on the poem as it in fact appears in the manuscript, and that if this lineation (based ultimately on Kemble's editorial decisions) is incorrect, then all attempts to explicate the principles of Old English prosody are invalid (6-7):

> The assumption that underlies every other study of Beowulfian prosody is this: the prosodist performs his or her operations upon the so-called verses of the poem as they appear in acceptably edited texts. Thus the prosodist can consider each verse in isolation from its verse line, that is, apart from the verse with which it is paired by alliteration . . . this assumption has produced confusion.

Creed's computer program does indeed elicit verse lines that overwhelmingly accord with Kemble's, and from these verse lines he systematically derives halflines (verses), and halfline constituents (HCs) or measures, each halfline containing two or occasionally three measures (the so-called hypermetric lines). Thus far, Creed reaffirms traditional thinking. However, he goes a step further and analyzes each measure into two Fine

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Parts, the first Part containing a "stressed syllable about 80 percent of the time" and the second containing "far more often than not . . . an unstressed syllable or syllables" (6).   According to Creed, these two Fine Parts per measure mark a duple rhythm that has important implications for the performance of Old English poetry and for resolving the issue of whether or not Old English poetry is isochronous.

Indeed, Creed uses the test of performance as partial support for his hypothesis (203) that "a simple two-part rhythm controls the distribution of every syllable in the poem":

> There is at least one other piece of evidence for a simple, two-part rhythm beginning with a down-beat; it is possible to *perform* the poem effectively according to this rhythm (205).

Another piece of evidence that Creed cites for his hypothesis is the variability of the number of syllables in the measures or halfline constituents (204; emphasis added):

> The number of syllables in a single measure ranges from one to six. Giving every syllable equal length results in an "irrational" or prose rhythm; giving stressed syllables more length to accentuate their importance also results in an irrational rhythm. Neither of these choices is...necessary. On the contrary, the performer can learn to perform so that the syllabic and nonsyllabic [Creed's "empty" Fine Parts that correspond to Pope's rests or lyre-strokes] material, despite the varying length and weight of the former, create [*sic*] a sense that *the time it takes to perform one measure is equal to the time it takes to perform another*.

Thus, Creed's reexamination of Old English prosody reaffirms his original position that Old English meter is isochronous.

On the other hand, Thomas Cable, the second metrical theorist who performed for this study, argues in his 1974 study, *The Meter and Melody of Beowulf*, that the Pope-Creed theory of two isochronous measures in a halfline, each beginning with an accent, either stressed syllable or lyre-stroke, is anachronistic, based on an analogy with the music of the eighteenth and nineteenth centuries.[8] Cable points out that Gregorian chant,

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[8] In *Reconstructing the Rhythm of* Beowulf, Creed explicitly maintains Pope's musical analogy (1990:202):

> . . . although his quasi-musical notation is unnecessarily precise, he has found the proper term for what I have been calling HCs. The HCs are the *measures* of the halflines. . . .
> The use of the term *measure* . . . indicates   important   features of these

the only music contemporary with Anglo-Saxon poetry about which we have any detailed knowledge, is, in fact, not isochronous (15-16). Further, Cable raises an objection to the requirement that the lyre-stroke, a non-linguistic element, be considered a necessary and integral part of the Old English metrical pattern, stating that the use of a non-linguistic feature as part of a prosodic system has no other example "in any language, ancient, medieval, or modern" (17).[9] In short, Cable rejects the position that the anisosyllabic lines of Old English poetry must be read isochronously, with the help of the lyre when necessary. The alternative pattern Cable proposes is based, not on equivalent time-units, but on a pattern of four levels of relative pitch.[10]

In his more recent work, *The English Alliterative Tradition* (1991), Cable has somewhat modified his position (39):

> The picture that resulted [in *The Meter and Melody of* Beowulf] was more specific than the evidence warranted: a picture of the poet carrying around a stock of five melodic formulas to which he set words. The picture that

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constituents. A musical measure is a clearly marked segment. The onset of 80 percent of the measures of *Beowulf* is marked by the occurrence of the most heavily stressed syllable. A musical measure can contain a varying number of notes. A measure of *Beowulf* can consist of as few as one or as many as six syllables.

Geoffrey Russom, in his recent study, *Old English Meter and Linguistic Theory*, finds "Pope's use of present-day musical notation . . . quite compatible with the linguistic structure of Old English metrical texts" (1987:7). Russom derives the standard Old English metrical foot (Sx) from the trochaic word, arguing that "in many familiar meters, the foot corresponds to a stressed simplex word" (28-29). In his view, "the central role played by the trochaic word . . . suggests a trochaic rhythmical norm like that of later Western music" (7), thus countering Cable's charge of anachronism.

[9] Paul Zumthor, however, describes Ainu epic verse as having "accents that the singer emphasizes by hitting some object" (1990:137). On a more theoretical level, Zumthor states (131):

The prosody of an oral poem refers to the prehistory of the spoken or sung text, to its prearticulatory genesis, the echo of which it interiorizes. For this reason, most performances, whatever the cultural context, begin with a nonvocal prelude, the beating of an object . . .; the frame is thereby exposed, where voice is going to be deployed.

[10] Since the Visi-pitch provides data on frequency or pitch, it would be possible to use Visi-pitch tracings to investigate Cable's suggestion, but that is outside the scope of this essay.

emerges from the present study is that the contours are indeed real, at least
for the overwhelming majority of verses, but, like the Five Types, they are
derivative, not paradigmatic.

Thus, while deemphasizing the centrality of four levels of relative pitch as
the key to Old English metrics, Cable still sees his work as a refinement of
Sievers's system of five basic line types, each composed of four members or
Glieder.

In his survey of the competing approaches to Old English prosody,
Cable observes that all of the theorists (Sievers, Bliss, Keyser, Heusler,
Pope, Creed) "deal with an abstract, idealized" pattern, no effort being made
"to record the accidental features and idiosyncrasies of an individual
performance" (13). As we have seen, the attempts to discern the "abstract,
idealized" principles of order that underlie Old English poetry have yielded
at least two fundamentally opposed basic constructs, each with a collection
of sub-theories and refinements. No one has so far been able to synthesize
the opposing points of view or to advance any new approach that has met
with scholarly consensus.[11]

I will now consider what the technological analysis of performance
can reveal about the important matter of isochrony. At the outset, it must be
conceded that human beings are not metronomes: one can hardly expect any
given performance to be isochronous to the last hundredth or even tenth of a
second.[12] Perhaps Cædmon's performance would show the same degree of
regularity of rhythm as Guillén's, but, not surprisingly, neither reader's does.
One might expect Creed's reading to exhibit more isochrony in the
pronunciation of measures than Cable's, since Creed holds Old English
poetry to be isochronous and presumably performed accordingly. On
balance, Creed's performance is indeed somewhat more isochronous than
Cable's, although perhaps not significantly so. Creed's measures vary in
length from 0.3 to 1.3 seconds, while Cable's vary from 0.4 to 1.7. Both,
however, tend toward a basic measure length of 0.7 to 1.1 seconds. Creed
read four halflines (of a total of 18) with identical measures, while Cable
read only one halfline with two identical measures. Just over half of

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[11] However, Russom suggests the possibility of synthesis when he notes in his
brief remarks on meter and rhythm that his own analysis of the "linguistic properties of
reliably attested verse patterns" independently supports the performance-oriented
"rhythmical interpretations of Pope . . . and Creed," particularly in regard to Pope's
analysis of Sievers's types B and C (1987:6-7).

[12] But see McSpadden 1962.

Creed's halflines have measures within 0.2 second duration of each other, while about one-third of Cable's halflines fall within this tolerance.[13]

The very short measures in both readings are, of course, those like "uerc" in the halfline "uerc ulderfadur" ("glory-father's work"), for which Pope and Creed posit a compensatory lyre-stroke. Interestingly, Creed did not in fact punctuate his reading with lyre-strokes or (according to the evidence of the Visi-pitch tracing) with the precisely timed pauses he suggests in the event of lack of access to an Anglo-Saxon lyre (1966:26). The longest measures in both readings tend to occur at the ends of whole lines (Creed's verse lines) and particularly at the very end of the poem. However, this does not occur regularly enough to suggest that either performer felt the consistent need to draw out the final measure to act as a line-marker.

When we turn our attention from the measure to the halfline, we find both readings to be more nearly isochronous. Cable's halflines run from 1.5 to 2.3 seconds (the 2.3 seconds being the time expended on the last, drawn-out halfline), but two-thirds of his halflines last from 1.8 to 2.1 seconds. Perhaps surprisingly, Creed's halflines range even farther, from 1.0 to 2.2 seconds (again the last line is the longest), but again two-thirds of his halflines are clustered between 1.4 and 1.8 seconds, Creed's reading being generally slightly faster than Cable's. In the halfline as in the measure, Creed's performance is somewhat more isochronous than Cable's. Two of his lines are composed of halflines identical in duration, while only one of Cable's lines exhibits this characteristic. Two-thirds of Creed's lines contain halflines differing in duration by no more than 0.2 second, while just under half of Cable's lines fall into this category.[14]

These data would suggest two conclusions—or rather two avenues for further investigation. First, both readings give some support to the notion that the halfline, and not the measure as Creed posits, is the relevant metrical unit, as Sievers implied with his famous five types. Second, a certain amount of variety in duration seems to be a significant part of Anglo-Saxon poetic technique. Both readers have a core of recurring measure

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[13] Since Creed's elaborate computerized re-lineation of *Beowulf* essentially confirmed the lineation of Kemble's (and all subsequent) editions, I felt comfortable using the traditional editorial lineation of *Cædmon's Hymn* (see Appendix A for lineated text) for this study. Creed's definition of *measure* coincides with Pope's and even (much of the time) with Sievers's (1990:202), so again I used traditional measure boundaries for my analysis.

[14] See Appendix B for complete data.

lengths (fourteen—of a total of 36—of Creed's measures are 0.9 second in duration; thirteen of Cable's are 0.9/1.0) and halfline durations (Creed's cluster around 1.6 seconds; Cable's around 2.0), the measures admitting of more variation at the extremes than the halflines. These recurrent durations provide a basic pattern around which both readers insert occasionally shorter or longer segments, adding a welcome variation that nonetheless does not obscure the underlying regularity. Interestingly, Creed suggests (1990:207) that the duple rhythm that he sees as the core feature of Anglo-Saxon prosody allows the "modern performer" to

> develop a degree of control that permits him or her to play with stress—to raise or lower somewhat the stress of a particular syllable—so long as he or she does so within the constraints of the rhythm. This . . . offers to the modern performer . . . something like the same degree of freedom that the Anglo-Saxon *scop* exercised during the first performance of the poem.

A *scop* may have enjoyed similar freedom in regard to duration as long as his performance contained a core of roughly isochronous metrical units (be they measures or halflines).

It may be argued that my experiment in analysis of the performance of Old English poetry has an element of circularity—that Creed's reading will probably demonstrate a greater degree of isochrony (which it in fact does) because he will have been at great pains to validate his theory and that Cable's will likely show four levels of pitch, again because he will expend his efforts in that direction. In this case, each reading may, to some extent, serve as the control for the other: what they have in common may be more important than their differences and may, however dimly, reflect the nature of Cædmon's original performance despite the vast linguistic and cultural gulf that lies between his time and ours. And certainly I realize full well that two readings are far too few to produce any statistically significant correlations. Based on this necessarily tiny and unrepresentative sample, any observations I make can merely be suggestive of possible lines of inquiry for a full-scale investigation in the future.

It may also be helpful to place these initial and highly tentative observations in a larger context. The debate over isochrony has not been limited to students of Old English metrics. Indeed, the rhythmicality (that is, isochrony) of spoken Modern English is very much at issue among linguists, so much so that "hardly any present-day textbook of English phonetics (or phonology) fails to mention rhythmicality as reflected in the

(approximate) isochrony [of] 'interstress intervals'."[15]

Among the several competing positions on this issue, the theory of English speech rhythm propounded by the Scottish phonetician David Abercrombie has perhaps the most interest for students of Old English prosody. He describes two aspects of the production of the air-stream used to fashion speech—one a series of "chest-pulses" generated by contractions of the intercostal muscles and the other "a series of less frequent, more powerful contractions of the breathing muscles," the stress-pulses. Each chest-pulse corresponds to a syllable of speech, while the stress-pulses occasionally "coincide with, and reinforce, a chest-pulse," causing "a more considerable and more sudden rise in air pressure" (1964:5-6). These physiologically produced speech rhythms inherent in all languages can be coordinated in different ways. Either the stress-pulses or the chest-pulses (not both) must be in isochronous sequence. If the stress-pulses are isochronous, we have a stress-timed language such as English; if, on the other hand, the chest-pulses are isochronous, we have a syllable-timed language, for example French. Abercrombie claims that the "stress-timed rhythm of English is the basis of the structure of English verse" (7), explaining why poets do not need a prosodic theory to compose, nor listeners and readers to appreciate.

Abercrombie goes on to make several additional points relevant to the reconstruction of the sound of Old English poetry. He states that the rhythm of speech is primarily the muscular rhythm of the speaker and must therefore be "empathised" by the hearer who identifies himself with the speaker, an identification probably possible only if the hearer and the speaker are using the same mother tongue (7-8). If so, this phenomenon may lie at the root of the difficulties that have arisen in seeking a consensus concerning the rhythms of Old English.

With obvious relevance to Pope's contributions to the study of Old English metrics, Abercrombie emphasizes that a "stress-pulse can occur without sound accompanying it," either initially in an utterance or medially. These silent stresses are inherent in language, occurring frequently in conversation, in prose read aloud, and in verse, and are perceived as such by both speaker and hearer (8-9). Pope has, of course, postulated "rests" marked by "hearpan sweg" ("the sound of the lyre"; 1943:*passim*) that may correspond with Abercrombie's "silent stresses" and that should fit closely

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[15] Jassem et al. 1984:204. An excellent historical survey of studies of English speech rhythms and, in specific, of studies of isochrony, can be found in Adams 1979:ch. 2. In particular, Adams places the matter of isochrony in Old English poetry into the larger context of isochrony in English speech in general.

into any measured pattern of rhythm in Old English poetry.[16]

Recurrent stress-pulses in English give rise to feet, defined by Abercrombie as "the space in time from the incidence of one stress-pulse up to, but not including, the next stress-pulse." Further, "all feet within a piece of English verse are of equal length or quantity" (1964:10). The number of syllables and their quantities may vary from foot to foot, such syllable quantity being "entirely distinct from stress" (12)—a possible explanation for the widely varying number of syllables per halfline in Old English verse.

Abercrombie's views on the distinction between stress-timed and syllable-timed languages have more recently been challenged by Peter Roach. Roach notes that students of phonetics frequently have difficulty assigning languages to one or the other of these two categories. No clear rules for such assignments exist, and teachers of phonetics traditionally answer that "the ability to make such decisions comes through undergoing a certain amount of training with an expert phonetician" and that "such a question does not necessarily need to be answered with a statement that can be tested experimentally" (1982:73). If we remember that Abercrombie asserted that speech rhythms must be "empathised" by the hearer, one possible conclusion is that "the distinction between stress-timed and syllable-timed languages may rest entirely on perceptual skills acquired through training" (74).

Roach set up an experiment to test two of Abercrombie's specific claims: a) "there is considerable variation in syllable length in a language spoken with stress-timed rhythm whereas in a language spoken with a syllable-timed rhythm the syllables tend to be equal in length"; and b) "in syllable-timed languages, stress pulses are unevenly spaced."[17] Briefly, Roach recorded single speakers of six languages, three categorized by Abercrombie as stress-timed (English, Russian, and Arabic) and three as syllable-timed (French, Telugu, and Yoruba). Intensity meter traces were

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[16] It is noteworthy that Joshua Steele in *An Essay towards establishing the melody and measure of speech*, published in 1775 at the request of the Royal Society and perhaps the earliest assertion of a theory of isochrony in spoken English, argued that the rests of silent periods must be considered in any examination of the rhythm of English speech:

> They [the pulsation of emphatic and remiss] must be continued, by conception in the mind, during all measured rests and pauses, as well as during the continuance of either uniform, articulated, or modulating sounds (quoted in Adams 1979:27).

[17] Roach here is quoting Abercrombie's statements from *Elements of General Phonetics* (1967:98).

made from the recordings of two-minute samples of spontaneous, unscripted speech from each speaker, and these traces were manually segmented.

The segmentation and analysis of these samples posed a number of problems. Since there is as yet no instrumental means of syllabification and stress identification, these tasks must be done auditorily by a phonetician, and disagreements do arise among phoneticians about such decisions. Further, there is no consensus about how to measure inter-stress intervals, that is, where such intervals begin and end. More important for consideration of isochrony in Old English poetry, the beginnings and endings of tone-units pose particular measurement problems (Roach 1982:76-77):

> Tone-units often begin with unstressed syllables that could only be counted as belonging to an inter-stress interval if the implausible notion were adopted that they were preceded by a "silent stress". . . or "silent ictus". . . . Syllables that are final in the tone-unit are commonly lengthened considerably, both in English and in other languages. . . .

Of course, the Pope-Creed school of thought on Old English prosody has as a key feature the "silent stress" that Roach dismissively labels "implausible" without further explanation. The Visi-pitch tracings of the two sample readings of *Cædmon's Hymn* do corroborate the general tendency to elongate final syllables, this tendency complicating any attempt to determine whether Old English prosody is essentially isochronous, unless, of course, final syllables are simply not reckoned, just as Roach discards them from his study.

Roach's experimental results "give no support to the idea the one could assign a language to one of the two categories on the basis of measurement of time intervals in speech" (78). He concludes that "the basis for the distinction is auditory and subjective" (*idem*). Although there is thus no experimental support for the notion of stress-timed and syllable-timed languages, Roach does concede that this distinction as it has made its way into phonetic theory depends "mainly on the intuitions of speakers of various Germanic languages all of which are said to be stress-timed." That is, certain languages are perceived as syllable-timed or stress-timed, and such perceptions might be based on whether particular languages have simpler or more complex syllable structure or whether they typically "exhibit vowel reduction in unstressed syllables" (*idem*).

Likewise, experimental research to date indicates,[18] as common sense would probably dictate, that while "*absolute objective isochrony* does not exist in English"(Adams 1979:53), the subjective perception of isochrony may well be another matter. Adams cites the work of E. A. Sonnenschein, who stresses that when we speak of rhythm, we really mean the subjective impression made by the objective acoustical reality, rather than the acoustical reality itself. That is, the human mind is unable to discriminate very slight differences in the duration of sounds, and thus the absolute duration of sounds measured technologically may differ from the human perceptions thereof. Listeners may smooth out slight inequalities in duration and perceive isochrony, or they may recognize as different sounds that are in fact absolutely isochronous as measured by the most accurate instrumentation available.

Over the past fifty years researchers have attempted by experimental methods to determine whether English is an isochronous language (as has often been claimed), and if so whether isochrony is primarily a phenomenon of production or perception. In her review of the research on this subject, Ilse Lehiste presents the net results of numerous studies (1977:259):

> . . . there exists a tendency to hear spoken English as possessing a certain degree of isochronicity. First of all, many actual differences in the duration of interstress intervals may be below the perceptual threshold. Second, listeners tend to impose a rhythmic structure on stretches of sound and thus subjectively to perceive isochrony even in sequences where the durational differences should be above the perceptual threshold. There is nevertheless some evidence that speakers also have a tendency to aim at isochrony in production. This emerges from the way they treat durational constraints in production.

Of course, all of these experiments were performed using Modern English spoken by native speakers, and most were performed using prose sentences as the samples of speech. However, the specific results of these experiments correspond rather closely with the results I obtained from analyzing samples of Old English poetry (read, of course, by native speakers of Modern English).   W. A. Lea's study of the lengths of interstress intervals, for example, shows "both a fairly large amount of clustering around certain mean values and a large amount of variability," leading Lehiste to conclude that the "regularities" were "quite apparent,

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[18] For a review of experimental research on isochrony, see Lehiste 1977.

even though absolute isochrony could not be found" (255). This is paralleled by the findings of the Visi-pitch analysis of both Creed's and Cable's readings described above. The work of Fonagy and Magdics "showed that a syllable at the end of an utterance is longer" (*ibid*.:260), an observation again borne out by examination of Creed's and Cable's readings. Lehiste (258) cites George D. Allen's conclusion that

> listeners have a general tendency to adjust their perception of time interval
> durations towards some central, or average, duration; this, in addition to
> the tendency to impose a rhythm on any sequence of intervals, contributes
> to the perception of regular rhythm in languages with stress accent.

Since both Old and Modern English are stress-accented languages and both performers are native speakers of Modern English, it is not surprising that the analysis of performed Old English should yield results similar to those obtained when analyzing spoken Modern English. (It may be helpful in future to analyze the performance of a native speaker of a syllable-timed language, say, French.)

E. A. Sonnenschein, who concurs that isochrony is largely a matter of perception, goes so far as to claim that "in so far as English ears are insensible to distinctions of quantity, any pair of syllables is actually felt to be equal in duration to any other pair" (cited in Adams 1979:41). As applied to questions of prosody, this means that when a foot is brief in duration and is composed of two unaccented syllables, it may be compensated for in the longer duration and heavier stress of an adjacent foot. The example Sonnenschein provides is from *A Midsummer Night's Dream*:

> The ploughman lost his sweat, and this green corn
> Hath rotted ere his youth attain'd a beard. (II.i.95-96)

In this example, the defectively brief and light foot "and this" is balanced by the two long and heavily stressed syllables "green corn" in the next foot, the two together being about twice the length of a normal foot like "The plough–." This compensatory juxtaposition in Shakespeare of feet markedly below and above the normal duration may be similar to the observed tendency in the two performances analyzed here of the measures to vary more widely in duration than the halflines, a long measure combining with a short to produce a halfline equivalent in duration to a halfline composed of two measures average in duration.

Thus, the experiments that bear on the issue of isochrony clearly

demonstrate that raw acoustical data (such as can be derived from technological devices including the Visi-pitch) and human perception of that raw acoustical data do not necessarily coincide. Whether we consider this discrepancy a matter of "perceptual skills acquired through training," as Roach argues (1982:74), or whether along with Sonnenschein we see this as an inability of the human mind to make fine discriminations between acoustical signals (Adams 1979:42), we might want to investigate what cognitive science can tell us about how the conscious mind processes sensory input (such as the duration of sound as objectively measured by mechanical means) and in so doing creates perceptions that differ substantially from that raw input.

In particular, the work of Ray Jackendoff (alone and in concert with Fred Lerdahl), derived in part from Gestalt psychology and from Chomskian generative linguistics, can provide us with insights generally relevant to an understanding of perception and specifically relevant to the perception of isochrony in human speech. Jackendoff and Lerdahl agree with the claim of such Gestalt psychologists as Wertheimer and Koffka that "perception is not simply a product of what is in the environment: the viewer [or the listener] plays an active, though normally unconscious, part in determining what he perceives" (1983:303).

One of the key principles that Jackendoff and Lerdahl use to further our understanding of the processes involved in perception derives from the work of Heinrich Schenker: "The listener attempts to organize all the pitch-events of a piece into a single coherent structure, such that they are heard in a hierarchy of relative importance" (106). They go on to say that a "consequence of th[is] claim is that part of the analysis of a piece is a step-by-step simplification or *reduction* of the piece where at each step less important events are omitted, leaving the structurally more important events as a sort of skeleton . . . " (*idem)*. While Jackendoff and Lerdahl state this hypothesis of Schenkerian reduction in terms of pitch, it is also applicable to the issue of duration that concerns us here, as they explicitly indicate when the note analysis of pitch is not sufficient to understand the perception of a piece of music (119):

> The solution, then, lies in the proper integration of criteria of pitch stability with rhythmic criteria based on . . . grouping and metrical components. Schenkerian reductions rely heavily on a tacit knowledge of these areas. Indeed Schenkerian analysis is workable at all only because the analyst himself supplied (consciously or unconsciously) the requisite rhythmic intuitions.

To apply Schenkerian analysis to the perception of isochrony, it is necessary to understand the principle of grouping referred to above:[19]

> The process of grouping is common to many areas of human cognition. If confronted with a series of elements or a sequence of events, a person spontaneously segments . . . the elements or events into groups of some kind. The ease or difficulty with which he performs this operation depends on how well the intrinsic organization of the input matches his internal, unconscious principles for constructing groupings. For music the input is the raw sequences of pitches, attack points, durations, dynamics, and timbres in a heard piece. When a listener has construed a grouping structure for a piece, he has gone a long way toward "making sense" of the piece. . . . Thus grouping can be considered as the most basic component of musical understanding.

The grouping principle that pertains most closely to the perception of isochrony is Grouping Preference Rule 5 (Symmetry): Prefer grouping analyses that most closely approach the ideal subdivision of groups into two parts of equal length (49).

Jackendoff's later and more general work, *Consciousness and the Computational Mind*, speaks directly to the question of isochronous groupings in both music and language (1987:254):

> It has sometimes been claimed that musical meter is a natural outgrowth of biological periodicities. . . . But such an explanation is overly facile, for two reasons. First, it does not explain how one can choose an arbitrary tempo, unrelated to biological rhythms, and maintain it over time. The regularity of musical rhythm is more likely to be attributed to an ability to replicate intervals of time . . . independent of preexisting physiological rhythms.
>
> Second, the essence of musical meter is not just periodicity but *hierarchical* periodicity. . . . It is the notion of hierarchical periodicity that is expressed by the use of a metrical grid in both music and language.
>
> The linguistic grid differs from musical meter in that it is not usually isochronous; that is, there are not identical intervals of time between adjacent pairs of beats. . . . Though there may be some tendency toward rough isochrony in ordinary language, the strict isochrony in music applies to

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[19] 1983:13. While Lerdahl and Jackendoff are concerned explicitly with an analysis of the perception of tonal music, they indicate in Chapter 12, "Psychological and Linguistic Connections," that their arguments are also valid for questions of prosody. They observe elsewhere that "more than any other component of the musical grammar, the grouping component appears to be of obvious psychological interest, in that the grammar that describes grouping structure seems to consist largely of general conditions for auditory pattern perception that have far broader application than for music alone" (36).

language only in the recitation of certain kinds of poetry, such as nursery rhymes, limericks, and (it is thought) *Beowulf*.

Thus, Jackendoff's principle that "perception does not send a multitude of half-baked analyses on to a higher capacity for adjudication" (279) leads to the positing of a "*selection function* that continually attempts to restrict the number of structures under consideration and that at each moment marks a particular candidate as most stable or salient" (259). For the perception of isochrony "in the recitation of certain kinds of poetry," most particularly *Beowulf*, that selection function appears to be the grouping preference rule of symmetry that argues that the listener will tend to perceive equal time-spans, thus filtering out objectively measurable durational variation. Donald K. Fry's (1990:73) metaphor may not be inappropriate here: "Perception is a screen pierced by holes shaped like the mind's forms, a screen we hold up to outside material. Data which fit enter easily through a hole; data which do not fit must be altered [grouped?] to the shape of an opening."

After considering the cognitive approach that ultimately leads Jackendoff to agree with those who hold that Old English poetry is isochronous, we can return to the prosodist Thomas M. Cable, who reaches the same conclusion from a different direction. Having reviewed "the various experiments [that] have clocked the performance of utterances and measured their perceptual effects and acoustic correlates," Cable concludes that "the speeding up of consecutive weak syllables is a widely recognized pattern of Modern English, whatever the clocked differences in perceived qualities might be" and asserts that "patterns of metrically unstressed syllables which require this speeding up continue to figure prominently" in the meters of Middle English and Modern English, and indeed that the "intrusion of what can be called the 'strong-stress mode' into more regularly alternating modes is one of the most salient features of English poetic rhythm from its origins to the present" (1991:36-37). He also observes that the "extended dip—with its variable numbers of unstressed syllables—is the feature that accounts for the strong-stress feel of Old English poetry" and argues further that while "all poetry in English and the other Germanic languages has strong stresses . . . what is special about strong-stress meter is the varying number of weakly stressed syllables between the heavy stresses—and the sense that the heavy stresses occur at equal intervals of time" (28).

Having considered what technology and the work of linguistic theorists and cognitive scientists can tell us about the objective qualities of the production of human speech and of the subjective qualities of the

perception of human speech, we must, in our efforts to restore the cadences of our ancient oral poetic text, return our attention to our moden oral performances of those few ancient lines. Can we really consider Robert P. Creed and Thomas M. Cable to be credible surrogates for that reluctant poet who long ago crept into a byre to avoid the psychological trauma of poetic performance?

As Jeff Opland has observed (1980:5),

> The idea that a study of modern phenomena can inform us about past ages is not new: the great school of British folklorists, a group that included Alfred Nutt, Andrew Lang, and E. B. Tylor, perceived the potential value of a study of analagous phenomena and made it an integral part of their methodology.

In support of his own comparative study of the oral performances of contemporary Xhosa and Zulu eulogistic poets and the Anglo-Saxon oral poetic tradition, Opland quotes Tylor's comments in *Primitive Culture* (1871; *idem*):

> Look at the modern European peasant using his hatchet and his hoe, see his food boiling or roasting over the log fire, observe the exact place beer holds in his calculation of happiness, hear his tale of the ghost in the nearest haunted house, and of the farmer's niece who was bewitched with knots in her inside till she fell into fits and died. If we choose out in this way things which have altered little in a long course of centuries, we may draw a picture where there shall be scarce a hand's breadth of difference between an English ploughman and a negro of central Africa.

While Tylor's nineteenth-century condescension to both English ploughmen and to the inhabitants of central Africa grates on late twentieth-century sensibilities, nonetheless the point is well-taken. "The student of a dead oral tradition can . . . find relevance in the study of living oral traditions" (Opland 1980:7), as has been demonstrated in the case of Anglo-Saxon studies by Opland's own work, as well as by the well-known comparisons of contemporary South Slavic oral epics to the ancient epic in Old English (and Homeric Greek), inspired by the groundbreaking work of Milman Parry and Albert B. Lord.[20]

But, while the current study does rely on modern performance to illuminate ancient poetic practice, the modern performances are not those of practitioners of a living oral tradition like the Xhosa *imbongi* or the South

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[20] See the summary of Parry-Lord research in Foley 1988.

Slavic *guslar*, but rather those of modern critics and scholars. Opland cites the archeologist Sir Leonard Woolley on the appropriateness of modern scholarly interpretations of ancient artifacts (8):

> It might be urged that the man who is admirably equipped to observe and record does not necessarily possess the powers of synthesis and interpretation, the creative spirit and the literary gift which will make of him a historian. But no record can ever be exhaustive. As his work in the field goes on, the excavator is constantly exposed to impressions too subjective and too intangible to be communicated, and out of these, by no exact logical process, there arise theories which he can state, can perhaps support, but cannot prove: their proof will ultimately depend on his own calibre, but in any case they have their value as a summing up of experiences which no student of his objects and his notes can ever share.

Opland then argues that "it is precisely these [firsthand] 'experiences' of a scholar working in a thriving oral tradition that enables [*sic*] him to make reasonable assumptions about classical or medieval oral literatures" (8). While Creed and Cable have not immersed themselves in "thriving oral traditions" in the same way that Lord and Opland and other scholars who have followed Parry's lead have done, nonetheless they bring to their performances of *Cædmon's Hymn* many years of experience and experimentation with Old English prosody.

The present analysis is not the first time the performances of modern scholars have been used to comment on medieval texts. Betsy Bowden, in her recent book *Chaucer Aloud* (1987), used tapes by thirty-two Chaucer scholars (of which, it happens, I was one), made between 1979 and 1983, to "understand more precisely how early readers and current ones understand Chaucer" (4). She claims that these oral performances, "data unprecedented in literary studies, provide audible proof that Chaucer's text does indeed sustain widely divergent interpretations by equally qualified readers."[21] Placing the birth of performance analysis in the 1970s, a birth "attended by an assortment of folklorists, rhetoricians, musicologists, actors, and

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[21] *Idem*. Bowden indicates that in 1980 Paul Zawadski, a member of the Speech Department of Pennsylvania State University, "put through a speech synthesizer several performances" of lines from *The Canterbury Tales*, which Bowden then analyzed for emotional content (10). In May, 1979, I gave a paper, "Sound Patterns in *Cædmon's Hymn*: A New Methodology," at the Fourteenth International Medieval Congress, Western Michigan University, in which I discussed, in very preliminary terms, the Visi-pitch analyses of Creed and Cable's performances of *Cædmon's Hymn* that form the basis for this study. Because of my demonstrated interest in the oral performance of medieval literature, Bowden asked me to be one of the readers for the *Chaucer Aloud* project.

linguists" (*idem*), Bowden notes that performance analysis has yet to develop a fixed methodology. She suggests that New Criticism is an appropriate source for the technical vocabulary needed to describe the aural effects of oral performance, since New Criticism is the "description of the performance each critic hears while silently reading the text" (5).   While that statement may be arguable in the context of New Criticism, the role of oral performance in the study of Old English prosody is not arguable. Inevitably, every theory of Old English prosody rests on the oral performance of a modern critic, going back to Eduard Sievers, who must have pronounced to himself the lines of *Beowulf* in order to generate his famous five types.

Bowden also claims to "test ways of analyzing taped performances..., starting with scientific objectivity to make it entirely clear that science has no final solution" (4). After discussing what the field of oral interpretation can bring to performance analysis, Bowden observes that "oral interpreters presumably would shudder at a suggestion that machines be used to analyze truth and wisdom" (9). I too would shudder at such a suggestion. The Visi-pitch and its precursor, the sound spectrograph, can only provide an objective analysis of acoustic reality, of pitch, intensity, and duration, and as the work of the linguists and cognitive scientists cited above amply demonstrates, such raw data must be interpreted with due caution to appropriate ends.

Bowden refers to the work of Grant Fairbanks, who in the 1930s analyzed from wax records and films the performances of trained actors reading identical passages in order to determine the emotional content (grief, contempt, anger, fear, and indifference) of each reading. Following his lead, Bowden used analyses made by a "speech synthesizer" (it is not clear precisely what device is meant) of several performances of line 150 in the Prioress' portrait and the Host's reply to the Pardoner (*PardT* 955). Each performance apparently included eight readings of the passages in question, intended to demonstrate contempt, viciousness, joking, teasing, mocking, anger, calm insult, and thoughtful distaste.[22]   After examining the voiceprints, Bowden concludes that although each looks different, collectively they demonstrate only that "each Chaucerian's voice has its own distinctive characteristics, including pitch" (10). She goes on to say that while "the speech synthesizer, linguists' most advanced technology, may

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[22] It should be noted that Bowden's explanation of her methodology is somewhat ambiguous. It is not clear, for example, whether the performers were told to convey these particular emotions, or whether Bowden listened to the performances and then labeled each as conveying this emotion or that.

compare two readings by the same person, . . . it simply does not display similarities in two readings when the same emotion is conveyed by different readers" (*idem*). It seems to me that Bowden's essay into the world of technological analysis of human speech is qualified by her apparent expectations that acoustical reality and emotional expression can somehow be equated. The Visi-pitch (and similar devices) can provide us with reliable data on pitch, intensity, and duration; it cannot tell us anything about contempt, anger, and distaste.

Further, although Bowden is very much concerned about intention, she does not deal with the issue of perception, as we have seen a key factor in using technological data for any sort of literary interpretation. She observes (14):

> A tape emits a pattern of sounds, put there by one human mind and voice and understood by a different human ear and mind. What about the potential gap between intention and execution, or the one between product and description? In the first case, the performer may intend one meaning but convey another; in the second, two listeners, each with different expectations, may construe what they hear differently.

The rest of Bowden's introductory remarks enlarge on her question: are we not seeking, ultimately, Chaucer-the-man's intended performance of Chaucer-the-author's text, which creates the voice of Chaucer-the-pilgrim? Nowhere does she follow up on the problems with performance analysis inherent in the differences of human ears—and, most particularly—of human minds.

Just as, of course, we can never join the courtly audience depicted in the famous miniature (MS CCCC 61) as they gathered to hear Chaucer read *Troilus and Criseyde* aloud, so too we can never have the pleasure of hearing Anglo-Saxon poetry performed by the Anglo-Saxon *scop* who composed it. At best we can only indulge in the process that Dennis Tedlock calls "ethnopaleography," a technique that "involves taking a text back to the descendants of those who produced it in order to draw analogies with contemporary spoken arts and   obtain commentaries from contemporary readers" (1983:16). Tedlock applies this technique specifically to a Quiché Mayan text first transcribed in the sixteenth century that, when performed and commented on by a contemporary Quiché priest-shaman, immediately revealed layers of meaning hitherto unsuspected by scholars.

In the case of Anglo-Saxon poetic texts and performance techniques, we cannot expect, of course, to find in some isolated corner of England an

informant who has access to an unbroken poetic tradition. Because of the historical break in the continuity of Anglo-Saxon poetic tradition, students of Old English metrics (and of all other aspects of Anglo-Saxon culture) face problems in interpreting the scant and fragmentary evidence that has survived the more than 900 years since the Norman Conquest. Anglo-Saxonists have as a result all become accustomed to working under a burden of uncertainty, striving to develop the most defensible hypotheses possible from the tantalizing shreds of evidence we have inherited.

If then the *scops* have left no direct lineal heirs, we must conduct our own version of ethnopaleography by consulting the only heirs they have left: native speakers of Modern English, particularly those knowledgeable in Anglo-Saxon poetics.   Although we do not have an unbroken chain of *scops*, we do have an unbroken chain of native speakers of English. It is necessary, however, to consider whether the language that has been passed down to us over the more than nine hundred years since the Norman Conquest does in fact retain, however altered, the essential phonetic contours of Old English.

In his recent book on the English alliterative tradition, Thomas M. Cable issues a warning that it may be anachronistic to speak, as he quotes Paul Fussell, of "our own Anglo-Saxon instinct to hear stress" and of "the powerful Germanic accents of the Old English language." Cable in fact suggests that on the matter of stress-timing (as we have seen, a notion important to the discussion of the isochronicity of English) an examination of the "specific phonetic, phonological, and lexical structures that contribute to the impression of stress-timing" demonstrates that "Modern English is different from Old English on several counts." The features that Cable cites as particularly relevant are the abundance in Modern English of reduced syllables and polysyllabic Romance lexical items (both rare in Old English) and the loss of phonemic length, "a central part of Old English phonology." The reduction of unstressed vowels to schwa in Modern English heightens the difference between stressed and unstressed syllables, thus contributing to an increased impression of stress-timing. Polysyllabic lexical borrowings from Romance languages provide more opportunities for reduction to schwa than do words of Anglo-Saxon origin. Thus, the possibilities of such reduction are more limited in Old English than in Modern English. As for phonemic length, Cable cites R. M. Dauer, who pointed out that in stress-timed languages there is substantial difference in syllable length and goes on to observe that the "occurrence in English of long and short vowels and the relevance of phonemic length help to moderate these differences" (1991:31-32).

Despite Cable's important caveats, there is some evidence for a continuity of Old English poetic performance and metrical patterns, however changed, beyond the Norman Conquest and into our own day, thus enabling modern speakers of English to have some credibility as performers of Old English poetry. Indeed, Cable's underlying "assumption is that neither the rhythms of the English language nor the structure of the human mind has changed enough in ten centuries to make patterns that were perceptible then inaccessible to us now" (134).

In his 1969 essay "Old English Prosody," Samuel Jay Keyser explores the issue of the survival of Old English metrics in Middle English alliterative verse (specifically *Sir Gawain and the Green Knight*) and in children's verse (nursery rhymes). Following the lead of Tolkien and Gordon, who claim in the introduction to their edition of *Sir Gawain and the Green Knight* (*SGGK*) that "the structure of these [unrhymed] lines is similar to that of the OE alliterative verse from which it has descended through an unbroken oral tradition," Keyser proceeds to analyze the two meters, demonstrating that, by and large, even those differences in stress and alliterative patterns noted by Tolkien and Gordon are in fact overstated (352). In Keyser's view, the principal differences between the meters of *Beowulf* and of *SGGK* are that the Middle English meter permits five-stress lines and that all stresses in the Middle English poem can alliterate. Of possible significance in establishing a continuity of oral performance from Old to Middle English (and thence to Modern English) is Keyser's observation that the *Gawain*-poet follows the Germanic stress rule that assigns stress to initial syllables in the unrhymed alliterative stanzas and the Romance stress rule that assigns stress to the ultimate, penultimate, or antepenultimate syllable in the rhymed bob-and-wheel.[23] Thus, despite the changes in English brought about by contact with Norman French that Cable rightly calls to our attention, here is evidence that the original Old English (Germanic) patterns can survive beside the newer patterns developed after the Conquest.

Keyser then proceeds to establish a continuity in oral tradition from Old English through Middle English to Modern English by examining the nursery rhyme. Citing W. P. Lehmann's description of the Germanic poetic line—"There is no problem about the predominant elements of the line. These are four syllables, two in each half-line, which are elevated by stress, quantity, and two or three of them by alliteration"—Keyser elaborates on Robbins Burling's observation that "except for the

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[23] See Halle and Keyser 1971 for a somewhat altered version of this theory.

alliterations, nursery rhymes and popular songs preserve the very characteristics that Lehmann considers to be exclusively ancient, and they appear to perpetuate a very old tradition" (355).

An example of a nursery rhyme relevant to a discussion of isochrony is "Pease Porridge Hot." Arranged according to modern editorial conventions for Old English poetry, "Pease Porridge Hot" looks very much like two lines of Old English poetry (if, of course, one disregards the end rhyme—although end rhyme does very occasionally and perhaps coincidentally occur in Old English verse):

> Pease porridge hot,   pease porridge cold,
> Pease porridge in the pot,   nine days old.

We can see here that each halfline (save the last) is a Sievers type E (/ \ x /). (The on-verse in the second line, unlike Old English halflines, has three alliterating syllables—as is possible in Middle English alliterative poetry.) We can also see that the halflines, like those of both Old and Middle English verse, are anisosyllabic. How are these lines customarily performed by children who are the inheritors of this little bit of ancient oral tradition? If my childhood memories are representative, this verse is always performed isochronously, childish chanting hastening over the three unstressed syllables "-ridge in the" and slowing perceptibly over the three consecutive stressed syllables "nine days old." Thus, it might be argued that anyone who learned "Pease Porridge Hot" in infancy is the recipient of a long oral tradition stretching (maugré William the Conqueror) back to Cædmon and beyond, and is therefore not an unfit example for an ethnopaleographer's attention.

Despite, then, the obvious shortcomings of modern performances of ancient oral poetic texts—and of any analyses of such performances, technologically assisted or not—I must agree with Dolores Warwick Frese's comments on Robert P. Creed's performance of *Beowulf* (1982:43):

> Hearing may not be believing, as it was for the Abbess Hilda, but it is certainly essential to understanding any metrical or scansional idea. . . . We should not be quick to dismiss the importance of such ear-witnessing when we construct any history of theory of scansion for *Beowulf*. What goes down in scansion must first go up in performance, a concluding observation with which . . . Hilda would surely concur.

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References

Abercrombie 1964   David Abercrombie.   "A Phonetician's View of Verse Structure." *Linguistics*, 6:5-13.

Abercrombie 1967   _____.   *Elements of General Phonetics*.   Edinburgh: Edinburgh University Press.

Adams 1979   Corrine Adams. *English Speech Rhythms and the Foreign Learner*. The Hague: Mouton.

Bauman 1986   Richard Bauman.   *Story, Performance, and Event: Contextual Studies of Oral Narrative*.   Cambridge: Cambridge University Press.

Bliss 1967   A. J. Bliss. *The Meter of* Beowulf. 2nd rev. ed.   Oxford: Blackwell.

Bowden 1987   Betsy Bowden. *Chaucer Aloud: The Varieties of Textual Interpretation*. Philadelphia: University of Pennsylvania Press.

Cable 1974   Thomas M. Cable. *The Meter and Melody of* Beowulf. Urbana: University of Illinois Press.

Cable 1991   _____. *The English Alliterative Tradition*. Philadelphia: University of Pennsylvania Press.

"Cædmon's Hymn"   "Cædmon's Hymn." In *The Anglo-Saxon Minor Poems*. Ed. by Elliott Van Kirk Dobbie. Vol. 6 of *Anglo-Saxon Poetic Records*. Ed. by George Philip Krapp and Elliott Van Kirk Dobbie. New York: Columbia University Press. p. 105.

Creed 1966   Robert P. Creed. "A New Approach to the Rhythm of *Beowulf*."   *Publications of the Modern Language Association*, 81:23-33.

Creed 1982   _____.   "The Basis of the Meter of *Beowulf*."   In *Approaches to Beowulfian Scansion*. Ed. by Alain Renoir and Ann Hernández. Berkeley: University of California Department of English and Washington, DC: University Press of America. pp. 27-35.

Creed 1990   _____.   *Reconstructing the Rhythm of* Beowulf. Columbia and London: University of Missouri Press.

Finnegan 1977   Ruth Finnegan. *Oral Poetry: Its Nature, Significance, and Social Context*. Cambridge: Cambridge University Press.

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

Foley 1988   _____. *The Theory of Oral Composition: History and Methodology*. Bloomington: Indiana University Press. Rpt. 1992.

Foley 1990   _____. *Traditional Oral Epic: The* Odyssey, Beowulf, *and the Serbo-Croatian Return Song*. Berkeley: University of California Press. Rpt. 1993.

Frese 1982   Dolores Warwick Frese. "The Scansion of *Beowulf*: Critical Implications." In *Approaches to Beowulfian Scansion*. Ed. by Alain Renoir and Ann Hernández. Berkeley: University of California Department of English and Washington, DC: University Press of America. pp. 37-46.

Fry 1990   Donald K. Fry. "The Memory of Cædmon." Rpt. in *Oral-Formulaic Theory: A Folklore Casebook*. Ed. by John Miles Foley. New York and London: Garland. pp. 71-82.

Halle and Keyser 1971 Morris Halle and Samuel Jay Keyser. *English Stress: Its Form, Its Growth, and Its Role in Verse*. New York: Harper and Row.

Heusler 1925   Andreas Heusler. *Deutsches Versgeschichte, mit Einschluss des altenglischen und altnordischen Stabreimverses*. Rpt. Berlin: de Gruyter, 1968.

Hoover 1985   David L. Hoover. *A New Theory of Old English Meter*. New York: Peter Lang.

Jackendoff 1987   Ray Jackendoff. *Consciousness and the Computational Mind*. Cambridge, MA and London: MIT Press.

Jassem et al. 1984   W. Jassem, D. R. Hill, and I. H. Whitten. "Isochrony in English Speech: Its Statistical Validity and Linguistic Relevance." In *Intonation, Accent, and Rhythm: Studies in Discourse Phonology*. Ed. by Dafydd Gibbon and Helmut Richter. Berlin and New York: Walter de Gruyter. pp. 202-25.

Keyser 1969   Samuel Jay Keyser. "Old English Prosody." *College English*, 30:331-56.

Lehiste 1977   Ilse Lehiste. "Isochrony Reconsidered." *Journal of Phonetics*, 5:253-63.

Lerdahl and
  Jackendoff 1983   Fred Lerdahl and Ray Jackendoff. *A Generative Theory of Tonal Music*. Cambridge, MA and London: MIT Press.

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

McSpadden 1962   George E. McSpadden. "New Light on Speech Rhythms from Jorge Guillén's Reading of His Poem *Gran Silencio*." *Hispanic Review*, 30:216-30.

Ogilvy and Baker 1983 J. D. A. Ogilvy and Donald C. Baker. *Reading* Beowulf. Norman: University of Oklahoma Press.

O'Keeffe 1987   Katherine O'Brien O'Keeffe. "Orality and the Developing Text of Cædmon's *Hymn*." *Speculum*, 62:1-20.

Opland 1980   Jeff Opland. *Anglo-Saxon Oral Poetry: A Study of the Traditions*. New Haven and London: Yale University Press.

Pope 1943   John Collins Pope. *The Rhythm of* Beowulf*: An Interpretation of the Normal and Hypermetric Verse-Forms in Old English Poetry*. Rpt. New Haven and London: Yale University Press, 1966.

Roach 1982   Peter Roach. "On the Distinction Between 'Stress-timed' and 'Syllable-timed' Languages." In *Linguistic Controversies: Essays in Linguistic Theory and Practice in Honour of F. R. Palmer*. Ed. by David Crystal. London: Edward Arnold. pp. 73-79.

Russom 1987   Geoffrey R. Russom. *Old English Meter and Linguistic Theory*. Cambridge: Cambridge University Press.

Saenger 1982   Paul Saenger. "Silent Reading: Its Impact on Late Medieval Script and Society." *Viator*, 13:367-414.

Sievers 1893   Eduard Sievers. *Altgermanische metrik*. Halle.

Tedlock 1977   Dennis Tedlock. "Toward an Oral Poetics." *New Literary History*, 8:507-17.

Tedlock 1983   _____. *The Spoken Word and the Work of Interpretation*. Philadelphia: University of Pennsylvania Press.

Zumthor 1990   Paul Zumthor. *Oral Poetry: An Introduction*. Minneapolis: University of Minnesota Press.

Appendix A

Cædmon's Hymn (Northumbrian Version)
MS Cambridge, University Library, KK.5.16 (Moore MS)

Nu scylun hergan   hefænricæs uard,
metudæs mæcti   end his modgidanc,
uerc uulderfadur,   sue he uundra gihuæs,
eci dryctin,   or astelidæ.
He ærist scop   ælda barnum
heben til hrofe,   haleg scepen;
tha middungeard   moncynnæs uard,
eci dryctin,   æfter tiadæ
firum foldu,   frea allmectig.

Appendix B

Reading Times in Seconds by Measure and Halfline

	Cable				Creed			
	2.2		1.6		1.6		1.5	
line 1	1.3	0.9	1.0	0.6	0.7	0.9	0.9	0.6
	1.9		1.6		1.6		1.4	
line 2	0.9	1.0	0.8	0.8	0.7	0.9	0.7	0.7
	2.2		2.0		1.0		1.8	
line 3	0.6	1.6	0.9	1.1	0.3	0.7	0.5	1.3
	1.9		2.1		1.6		1.6	
line 4	0.8	1.1	0.8	1.3	0.5	1.1	0.6	1.0

		1.5			1.8			1.3			1.7	
line 5	0.4		1.1	0.8		1.0	0.4		0.9	0.9		0.8

		2.1			2.1			1.8			1.9	
line 6	1.1		1.0	0.9		1.2	0.9		0.9	0.9		1.0

		1.5			1.8			1.4			1.4	
line 7	0.5		1.0	1.2		0.6	0.5		0.9	0.9		0.5

		1.8			1.9			2.0			1.9	
line 8	0.7		1.1	0.9		1.0	0.9		1.1	0.9		1.0

		1.9			2.3			1.8			2.2	
line 9	1.0		0.9	0.6		1.7	0.9		0.9	1.1		1.1