The function of pauses in metrical studies: acoustic evidence from Japanese verse*

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"That rhythm, that rhythm.
it makes them one."
- Ofelia Zepeda

"...silence does not simply exist but
is actively created by participants."
- Nancy Bonvillian

1. Introduction

In this paper, we use acoustic evidence to establish that a line containing 8 moras is the metrical template for traditional Japanese poetry: lines that have been previously analyzed as having 5 or 7 moras are underlyingly octomoraic. We do this by demonstrating that pauses function as additional moras in the meter to regulate line length. We also argue that phonetic data should be used in metrical studies (by consulting native speakers' productions of metered texts) because they provide information about metrical structure not available in traditional text-based approaches, which view reader intuitions as unreliable. We make a needed contribution to metrical studies by analyzing meter in Japanese, a prominence insensitive language, meaning a language without stress accent. Therefore, Japanese meter lacks an alternating pattern of strong and weak positions because stressed or unstressed syllables do not exist in the phonology of Japanese.

Our paper is organized as follows. In section 2, we give brief backgrounds of metrics, traditional Japanese poetry, and a previous phonetic study of haiku by Lehiste (1997). Section 3 contains our data, which are phonetic measurements of readings of tanka, a form of Japanese poetry longer than haiku by two lines. Our analysis appears in section 4, and in section 5 we embed our results in a general discussion of methodology and theory in the study of meter.
2. Metrical studies

Metrical studies have commonly analyzed languages that are prominence sensitive, meaning languages with stress. For example, iambic pentameter, which aligns word stress to metrical positions, has received much attention in metrical studies (Halle and Keyser 1971, Kiparsky and Youmans 1989, Hanson and Kiparsky 1996, Hayes 1984). These studies focus on written texts as sources of data that provide evidence of the poet’s competence. Our study is experimental and uses native speaker readings of texts as evidence of the metrical structure of tanka, a verse type written in Japanese, a language without phonological stress.

2.1. Japanese poetry – haiku and other verse types

A traditional Japanese poem is commonly described as consisting of combinations of 5 and 7-mora lines (Kozasa 1997). For example, a haiku verse consists of three lines having counts of 5, 7, and 5 moras. Native Japanese speakers are taught to count ‘letters’ or ‘symbols’ when they compose haiku in elementary school. This is because a single kana symbol in the Japanese writing system generally corresponds to a mora, but not to a syllable (Shibatani 1990).

A mora (μ) is an abstract phonological unit. Light syllables have one mora and heavy syllables have two moras (Hayes 1989). In Japanese, a mora dominates both the onset and its adjacent vowel in a syllable (Katada 1990). Diphthongs and long vowels are bimoraic, and coda consonants are monomoraic. Examples of Japanese syllable types and number of moras per syllable are shown in (1) below. (C indicates a consonant, V indicates a vowel, and μ indicates a mora.)

(1) Syllable Types
a. light syllable (monomoraic):
   \[\text{CV}_\mu\]
   \[\text{vi}\]
   ‘stomach (organ)’
   \[\text{CV}_\mu\]
   \[\text{ki}\]
   ‘tree’

b. heavy syllable (bimoraic):
   \[\text{CV}\mu\mu\]
   \[\text{oo}\]
   ‘king’
   \[\text{CV}\mu\mu\]
   \[\text{kau}\]
   ‘empty’
   \[\text{CV}_\mu\mu\]
   \[\text{ai}\]
   ‘love’
   \[\text{CV}_\mu\mu\]
   \[\text{kai}\]
   ‘shell’
   \[\text{CV}_\mu\mu\]
   \[\text{san}\]
   ‘three’

As mentioned, haiku consists of 17 moras that are distributed in three lines of 5 moras, 7 moras and 5 moras. An example of mora distribution in haiku is shown below.

(2) Haiku example (Issa 1997)
   \[\text{ya se ga e ru}\]
   \[\mu\mu\mu\mu\]
   ‘skinny frog’
   \[\text{ma ke ru na Is sa}\]
   \[\mu\mu\mu\mu\mu\mu\mu\]
   ‘do not lose. I (Issa)’
   \[\text{ko re ni a ri}\]
   \[\mu\mu\mu\mu\mu\mu\]
   ‘am here’

There are other Japanese verse types besides haiku. In (3)a – (3)f are some Japanese verse types listed by Kozasa (1997). All are combinations of 5 moraic lines and 7 moraic lines. For our study, we look at tanka. The reasons for choosing tanka over haiku are discussed in section 3.1.

(3) Names of Verse Types Mora Count Alternations
   a. bussokusekika 5-7-5-7-7-7
   b. choooka 5-7-5-7- ... -5-7-7
   c. haiku 5-7-5
   d. kuta-uta 5-7-7
   e. sedooka 5-7-7-5-7-7
   f. tanka 5-7-5-7-7

2.2. Octomoraic template

Austerlitz (1987) claims that pauses are an inherent part of the underlying metrical structure of haiku. Although lines in Japanese verse have traditionally been described as consisting of 5 or 7 moraic constituents, several researchers have concluded that lines actually consist of slots which correspond to 8-mora timing. Kozasa (1997) uses the term bimoraic tetrameter meaning a line consisting of four binary moraic feet. Bekku (1977) claims that a speaker reads a line in a four beat rhythm: 2 haku (moras) in one beat. Kogure and Miyashita (1999) analyze haiku lines as having 8 moraic slots
functions leaves at least two questions unanswered: 1. Why were the average pauses after 5-mora lines longer than those after 7-mora lines? and 2. How do we account for literary descriptions of haiku as having 8 moras per line?

Our study provides answers to these questions. We follow Lehiste’s lead in metrical studies by using native speaker readings of Japanese meter to understand the kinds of prosodic alternations that occur in Japanese poetry. We conclude that pauses are an inherent part of the structure of Japanese meter.

3. Description of our study

We explain the function of pauses in Japanese verse and their varying lengths by proving the existence of an octomoraic template. Line duration in Japanese verse is regulated by alternately realizing lines as 5 uttered moras + 3 paused moras or as 7 uttered moras + 1 paused mora. While we would expect the average duration of 5 uttered moras to differ from the average duration of 7 uttered moras, assuming an underlying 8 mora template we would expect the average duration of total lines (uttered moras + paused moras) to be relatively equal. Crucially, we would expect a correlation between the measured durations of pauses and utterances and the number of moras hypothesized to exist in the underlying metrical structure.

3.1. Tanka for data

As mentioned above, we chose tanka verse types for our study. A tanka consists of 5 lines: The first three lines are the same as haiku, and the last two lines are 7-mora lines. An example tanka is shown in (4) which gives the uttered mora counts for each line. Our choice of tanka over haiku was motivated by our interest in the line-final pauses. Since pauses are inserted at the end of lines, pauses at the ends of the first four lines should be clearly measurable in recitation because they are immediately followed by the utterance of another line. Haiku provides only two measurable pause positions between the first and second, and second and third lines. So although the last lines of a tanka also end with a pause, we did not include them in our data because with no immediately following utterance it would be impossible to measure the duration of the silence.
151 tanka. Subjects were given the printed forms of poems that were written in both kanji and kana symbols. Kana symbols are moraic, generally one symbol corresponds to one mora, but kanji symbols can correspond to one or two moras. Printed tanka are continuous and do not indicate line breaks, as in (7b).

(6) Terminology
a. Utterance positions (Upos)
b. Pause positions (Ppos)
c. Line = Upos + Ppos or \{[Utterance Positions] + [Pause Positions]\}
d. 

(7) a. yawaraka ni
b. 恋熱
   tsumoreru yuki ni は
   hoteru ho o
   uzumuru gotoki
   koishite mitashi

The printed tanka in (7b) has only three printed lines. The vertical lines are read from top to bottom and right to left. The first printed line comprises the first two metrical lines of tanka, the second printed line corresponds to the next two metrical lines of tanka, and the last printed line is the fifth metrical line. This particular division of lines is not the only one used in the book. We assume that the variation in printing was used to achieve a visually pleasing form on the page.

The fact that poems are not printed in a way that indicates the division of the lines in the tanka verse form allowed us to test for line break intuitions not indicated in the text. Further, the fact that the printed poems included kanji symbols allowed us to test hypotheses about moraic counts also not directly represented in the text.
3.2. Method

We conducted an experiment with five native speakers of Japanese, all of whom were graduate students at the University of Arizona. A subject’s task was to read tanka aloud into a microphone that automatically records into CSL (Computerized Speech Lab Model 4300B Software Version 5X). Their instructions were to “read them as you usually would.” The purpose of the test was explained following the completion of the recording. We collected recordings of subjects reading five different poems and measured the durations of utterances and following pauses for the first four lines.

4. Results

In this section we present our measurements of the durations of utterances and pauses for the first 4 lines of each tanka, which were lines containing 5μ, 7μ, 5μ and 7μ utterance positions respectively. We measured a total of 97 lines.

4.1. Mean durations of utterance positions (Upos)

Figure (8) shows the portion of the line (shaded) discussed.

\[ \text{Figure (8)} \]

Although readers were not given instructions about how to read lines, and although readers did not hear each other read, the durations of 5-mora utterances across speakers were strikingly equal as were the durations of 7-mora utterances. Further, when we calculated the mean duration of moras for both 5 and 7-mora utterances, they were strikingly equal to each other. Average utterance durations appear in Table 1. M indicates the mean duration of the utterance and M(μ) indicates the mean duration of the averaged moras in the utterances. SD indicates standard deviation for M and SD(μ) indicates standard deviation for M(μ). All values shown here are given in milliseconds (msec).

<table>
<thead>
<tr>
<th></th>
<th>5-mora utterance</th>
<th>7-mora utterance</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>801</td>
<td>1060</td>
</tr>
<tr>
<td>SD</td>
<td>81.1</td>
<td>134</td>
</tr>
<tr>
<td>M(μ)</td>
<td>160</td>
<td>152</td>
</tr>
<tr>
<td>SD(μ)</td>
<td>16.2</td>
<td>19.2</td>
</tr>
</tbody>
</table>

These data suggest that the timing of uttered moras is strictly regulated in the recitation of tanka. The fact that the standard deviations for the mean durations of utterance lengths (81 msec and 134 msec) are smaller than the length of an average mora (160 msec for 5 uttered moras and 152 msec for 7 uttered moras) tells us that the variation among speakers in the overall timing of an utterance does not standardly vary as much as the length of a mora. In other words, a reader should not utter a line containing 5μ Upos in such a way that it could be mistaken as having 6μ Upos or a line containing 7μ Upos as having 8μ Upos.

4.2 Mean duration of pause positions (Ppos)

Figure (9) shows the portion of the line (shaded) discussed in this section, and the data appear in Table 2. Again, all values are given in milliseconds (msec).

<table>
<thead>
<tr>
<th></th>
<th>pause after 5 μ utterance</th>
<th>pause after 7 μ utterance</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>424</td>
<td>134</td>
</tr>
<tr>
<td>SD</td>
<td>138</td>
<td>78.7</td>
</tr>
<tr>
<td>M(μ)</td>
<td>142</td>
<td>134</td>
</tr>
<tr>
<td>SD(μ)</td>
<td>45.9</td>
<td>78.7</td>
</tr>
</tbody>
</table>

When we measured line-final pauses, we found, as Lehiste did, that the average duration of pauses after 5μ Upos (424 msec) was much longer than the average duration of pauses after 7μ Upos (134 msec). However, the duration
of pauses after 5 µ utterances were strikingly equal across speakers (standard deviation = 138 msec), and the duration of pauses after 7 µ utterances were even more equal (standard deviation = 78.7 msec). Assuming an octomoraic template, the mean mora length for pauses after 5 µ utterances was calculated by dividing the mean pause duration (424 msec) by 3. The mean mora length after a 7 µ utterance is the same as the mean duration because we assume there is only a single mora pause.

4.3. Mean duration of lines

Figure (10) shows the portion of the line discussed in this section.

(10) Line

Utterance Positions Pause Positions

The results of combining the durations of the Upos with the Ppos to measure the duration of whole lines are given in Table 3.

<table>
<thead>
<tr>
<th></th>
<th>5 µ utterance + pause</th>
<th>7 µ utterance + pause</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>1216</td>
<td>1195</td>
</tr>
<tr>
<td>SD</td>
<td>166</td>
<td>162</td>
</tr>
<tr>
<td>M(µ)</td>
<td>152</td>
<td>149</td>
</tr>
<tr>
<td>SD(µ)</td>
<td>20.7</td>
<td>20.3</td>
</tr>
</tbody>
</table>

Here we present the results of calculating the mean duration and standard deviation for the total lines having either 5µ Upos and 7µ Upos. Mean mora lengths were calculated in all cases by dividing the mean duration of line lengths by 8, under the assumption that tanka have an octomoraic template. When the pauses are included in the measurement of line duration, 5 mora lines and 7 mora lines are strikingly equal (1216 and 1195 msecs respectively). Mean mora length for these lines is also strikingly equal (152 and 149 msecs).

The data in Table 3 show the surprising result that 5-mora lines are slightly longer on average than 7-mora lines, a situation that would not have a satisfactory explanation if lines were analyzed as only having the 5 or 7 uttered moras. Our analysis of 5 mora lines being followed by a 3 mora pause offers

a preliminary explanation for why this might be the case, i.e., both 7 mora lines and 5 mora lines really have 8 moras worth of structure that need to be represented in the reading.

4.4. Showing the relationship between underlying moras and measured durations

The scatter plot in (11) shows 194 measurements: 97 measurements of utterance durations of both 5 and 7 moras and 97 measurements of the pause durations occurring after each of these utterances. Assuming an octomoraic template, we wanted to see if the measurements of the pauses would correlate with an analysis of pauses after 7 uttered moras being 1 mora long and pauses after 5 uttered moras being 3 moras long. The x-axis shows the written mora counts for lines (5 and 7) and assumed mora counts for the pauses (3 and 1) for the lines of tanka in our data set. The y-axis shows the duration measurements of these four categories in milliseconds.

(11) Plotting mora counts against measured durations
The scatter plot shows a positive correlation between the number of moras claimed by Japanese scholars and theorists to be in the meter and the measurements of the pause durations (1 and 3 mora counts) and utterance durations (5 and 7 mora counts). The clustering of the measurements as well as the linear increase in duration measurements over equal intervals are evidence that pauses after 5 uttered moras are structurally 3 moraic units, and pauses after 7 uttered moras are structurally only one moraic unit.

4.5. Discussion

Our study of tanka readings by native speakers of Japanese found a correlation between the hypothesized number of underlying moras and the duration of the spoken or paused unit. We also showed that when lines are analyzed as including paused moras, they show a tendency towards equal durations, regardless of whether the number of utterance positions written in the text is 5 or 7 moras. Our data support the existence of an octomoraic template, which includes functional pauses in Japanese meter and provide concrete evidence for the claims mentioned in 2.2.

There were several differences in our approach from the one Lehiste used in her study of Japanese meter. First, we used multiple readers instead of one. Second, we used the five-line verse form, tanka, instead of the three-line haiku form, which enabled us to measure two non-final lines of 5 and 7 moraic utterances per poem while avoiding an effect of lengthening at the end of the poem. Crucially, because we posited an octomoraic template for Japanese meter, we were able to answer the unanswered questions left by Lehiste’s (1997) rejection of her two hypothesized functions for pauses (see 2.3).

Recall that Lehiste rejected Function 1, which stated that pauses constitute one additional mora, because the pauses after 5-mora lines were longer than the average uttered mora and pauses after the 7-mora lines were shorter than the average uttered mora. An analysis of the line as having 8 moras explains why pauses after 5 uttered moras were longer than pauses after 7 uttered moras, and our data corroborates Lehiste’s observation. We have therefore modified her statement of Function 1.

Function 1 (revised):
Pauses constitute 1 additional mora after 7 utterance positions, but 3 additional moras after 5 utterance positions.

We also accept a line-regulating function for pauses. Lehiste proposed and rejected the hypothesis that pauses serve to provide flexibility for the overall timing of the onset of lines. Our data supports the following revision of Function 2.

Function 2 (revised):
Pauses function to keep line durations equal, regardless of the number of utterance positions.

Pauses, then, function in Japanese meter to fill in the silent moras not written in the text and make lines have an overall duration of 8 moras.

5. More support for the octomoraic template

In this section we provide further support for the existence of the octomoraic template and discuss the relevance of pauses to metrical theories in general.

5.1. The possibility of an additional mora in traditional poems

In some tanka poems, variations of the 5-mora 7-mora patterns can occur. For example, in lines whose template calls for 7 Upos, the poet can write 8 moras to be uttered, and speakers can easily parse this by omitting a pause. However, more than 8 written moras are unparsable as a line of tanka. Lines whose template calls for 5 Upos can have up to 6 uttered moras, but no more. Presumably this is because more than an additional mora would make a 5 Upos line indistinguishable from a 7 Upos line. We included several samples of 6 mora lines in our initial tests and as we expected, the utterance duration was longer than the average utterance duration for 5-mora lines and the pause duration was shorter (these 6-mora lines were not included in the data sets presented above). Further, overall line duration appeared to remain equal, as preliminary investigations showed that line length was well within one standard deviation of the 5-mora lines we measured. This phenomenon needs further investigation, but it appears to support the existence of a fixed octomoraic template within which variations on numbers of Upos can occur.
5.2. The shifting of pause positions in 7-mora lines

Another type of support for the octomoraic template is addressed in this section. Our results support the existence of a pause after a 7-mora line corresponding to a single mora. However, in section 2.3, we noted that Lehiste denied Function 1 because average pauses after 7-mora lines were too short to be one mora. We propose that pauses after 7-mora utterances can be shorter than the average uttered mora because of the possibility for the pause position to shift in a line.

All of the 7-mora lines in the tanka read in our study contained a pause that occurred at the end of the line. One type of variation in 7-mora lines is that a pause can occur in non-final positions. A sample line where this shifting occurs is shown below. A paused mora is indicated by *, which may be realized at the beginning of a line as in (12) or in the middle as in (13).

(12) pause at the beginning
line: * en no u e na ru  ‘above the balcony’
template: (μ)μμ μ μ μ μ μ

(13) pause in the middle (variation)
line: en no * u e na ru  ‘above the balcony’
template: μμ μ (μ)μ μ μ μ

In this line, the pause must occur either at the beginning or in the middle of the line. The line’s syntactic constituency is the reason for this phenomenon.

(14) en-no uenaru
balcony-genetive locative

This line contains two constituents: a 3-mora element and a 4-mora element. Kogure and Miyashita (1999) claim that in haiku a colon boundary coincides with a word boundary, as shown in (15).

(15) \{(*μ)(μμ)\}_Wd\{((μμ)(μμ))\}_Colon

This colon boundary separates the line evenly, and the pause can occur only at the edge of the colon in which the 3-mora phrase occurs, either before the 3-mora constituent or directly after it.

5.3. Defining meter in a prominence insensitive language

Metrical studies are based on the idea that the prosodic structures already present in language are exploited in meter (Hanson and Kiparsky 1996, Lehiste 1992). In traditional Japanese meter, the relevant prosodic structure is the mora. If meter is the mapping of language to the metrical template, which results in alternations between prosodic structures (as in stressed vs. unstressed syllables in English meter), what is alternating in tanka? This study shows that a paused mora is the unit that alternates with the uttered mora in the prominence insensitive meter of Japanese.

5.4. An analogy to timing in music

In various cultures, poems are referred to as songs. In fact, the word tanka means short song (tan ‘short’ + ka ‘song’). In songs, rhythm provides alternations between sound and silence. Oehrle (1989) discusses the relevance of rhythm to English meter and speech timing. He states that different underlying time signatures result from the inclusion of rests (as opposed to simply marking every beat with sound). For example, four-beat time can be realized as three quarter notes and one quarter rest. We schematize this in (16) using the following notation: (● for quarter note, * for a quarter rest, and | for measure division).

(16) Four beat time realized as 3 quarter notes and 1 rest.
[● ● * ● ● ]
If you tap or count this rhythm, you get 1, 2, 3, rest 1, 2, 3, rest. However, if you ignore this rest, you get 3 beat time resulting in waltz. The beat is then 1, 2, 3, 1, 2, 3, as illustrated in (17) below.

(17) Ignoring the rest results in 3 beat time

|***|***|

In tanka, the alternations between uttered and paused moras constitute the meter. Ignoring the pause in tanka destroys the underlying meter, i.e., the octomoraic template. Our study shows that speakers are sensitive to these alternations and adjust their timing by increments in the range of 121–156 msec to create lines (similar to the | divisions above) that are surprisingly equal in length.

5.5. Future research

This study shows that pausing can be used as a basic metrical unit in a language that does not mark prominence with stress. From this we propose two contrasting hypotheses to be tested in future research.

(18) Hypothesis A: Pauses function structurally in meter cross-linguistically.

Hypothesis B: Pauses function structurally in meter only in languages without stress systems.

If Hypothesis A is correct, the pauses that occur in the performance of meters written in languages with stress, like the empty beats at the ends of lines of English quatrains for example, could be shown to serve a structural function as well. If Hypothesis B is correct, the pauses in English quatrains would not serve a structural function but would be simply a byproduct of performance. Methodologies for investigating meter that view performance data as irrelevant start with the assumption that Hypothesis B is correct.

The results of this study, however, lead us to be most interested in investigating Hypothesis A. To be tested, Hypothesis A relies on methodologies that consult native speaker intuitions in metrical performance. Although Lehiste’s study that we used as a starting point for this paper was technically

about speech timing and not metrical structure, she has argued elsewhere (1992) for phonetic approaches to the study of meter:

Phonetic measurements of utterances are the only aspect of language directly subject to observation; and experimental phonetics provides a point at which metrical theories can be tested with respect to at least one kind of objective reality. (Lehiste 1992: 98)

We have shown here that native speaker intuitions about the structure of poetic meter can be reliably consulted by analyzing performances. We have also shown that determining whether or not pauses function as part of the metrical system requires listening to readers’ performances of texts, since pauses are not indicated within the written versions of the texts. We believe that phonetic approaches as laid out by Lehiste and continued here will broaden our understanding of the structures in language that function in meter as well as of speaker competence in manipulating these structures. Although it can be argued that some older traditions, like Old English verse, cannot be subjected to native speaker readings, we have shown that in the case of at least one living verse form, a performance-based analysis gives the facts of traditional Japanese meter a more satisfactory explanation than a purely text-based one.

In future research, we will investigate further the tendency towards isochronous line lengths. This investigation may provide some insight into the controversy of why people perceive Japanese to be mora timed, but in spontaneous speech speakers produce moras that are timed in only a relatively regular way (Warner and Arai 2001). It may be that by crystallizing its suprasegmental system in the structure of its traditional poetry (Lehiste 1997), a language makes “salient” (Hayes and MacEachern 1998) precisely the structures that are needed in establishing that language as a “psychological reality” (Ochs 1990) in learners.

6. Conclusion

We conclude that the template for Japanese meter has 8 moraic slots. A line has either 5 or 7 utterance positions. Lines containing 5 utterance positions are followed by 3 pause positions, and lines containing 7 utterance positions are followed by 1 pause position. Variation in meter is achieved by varying the number of utterance positions in a line and shifting the utterance posi-
tions within a line. Silent moras function as part of the template to make all lines have a duration of 8 moras.

Further, our study supports Lehiste’s claim (1992) that phonetic information is necessary for testing metrical theories. In this, we see traditional linguistic methodology, i.e., consulting native speaker intuitions, as foundational to metrical studies instead of seeing metrics as purely text-based. Further, whereas metrical studies following Halle and Keyser (1971) claim that metrics is an account of the poet’s competence, our study suggests that metrics is also an account of reader competence, and that this competence is relatively equivalent across readers, at least in the case of reading tanka. Finally, we see the shift to phonetic data over purely text-based data as a recognition of poetry’s oral history (Foley 1988), which expands the field of metrics to include analysis of non-written songs in cultures whose literatures still have strong ties with oral tradition (such as Fitzgerald’s (1998) treatment of meter in Tohono O’odham). This shift opens the door for innovative methodologies in the study of meter and pushes metrical theory to account for a broader range of data.

Notes

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1. The haiku verse form originated by dropping the last two lines from the tanka verse form.


3. Standard deviation for 5μ lines = 126 msec, and for 7μ lines = 172 msec

4. Similarly, in Nahuatl, the word for poetry is inxoci:chilit meaning ‘DET flower DET song’. “This is a so-called ‘difrasismo’ or ceremonial couplet where the two go together to make a metaphor that means a third thing.” (Jane Hill, personal communication.)

5. The kind of pauses we refer to are like those that occur in nursery rhymes as in: Hickory Dickory Dock (pause), The mouse ran up the clock (pause).

References


Austerlitz, R.  1987  The Japanese five- and seven-syllable line. Bochumer Jahrbiich Osta-
sienforschung 10: 77–81.


Hayes, Bruce, and Margaret MacEachern  1998  Quatrains in English folk verse. Language 74: 473–507.


Iambic meter in Somali

Colleen M. Fitzgerald

1. Introduction

Much research in Generative Meter focuses on the manifestations of metrical structure in stress languages such as English (Kiparsky 1975, 1977; Hayes 1989), Finnish (Kiparsky 1968, Hanson and Kiparsky 1996), Spanish (Piera 1980), Middle English (Golston 1998), and Tohono O’odham (Fitzgerald 1995, 1998). The metrical structure of these languages can generally be determined from the stress patterns of words, which then interact with the stress patterns in poetic meter. An interesting counterpoint to stress languages comes from pitch accent languages like Japanese, where accent is unrelated to metrical structure. Instead, support for metrical structure comes from elsewhere in the phonology of Japanese. In this way, the meter of verse is one way to provide evidence for the bimoraic foot as the relevant foot type for Japanese (Poser 1990, Kogure and Miyashita 1999, Tanihara 2001), even without rhythmic stress.

This paper examines poetic meter in another pitch language, Somali. The data is drawn from a verse form in Somali that counts moras, known as the masaf. While the masaf has traditionally been analyzed as regulating half-line length in terms of moras, I argue that this is not the appropriate characterization. Rather, Somali verse is considerably more varied in the types of half-lines that actually occur, and there is no decisive evidence favoring a 9 mora half-line. Instead, I claim that Somali verse provides evidence supporting metrical structure, and that the type of extensive variation is exactly what is predicted if the half-line is characterized in terms of quantitative iambic feet.

The basic structure of the paper is as follows. First, I present background on prosodic phonology, specific to Somali and more general theoretical assumptions. Second, I turn to the basics of the masaf, the mora-counting verse form analyzed in this paper. Third, I compare two parsings of the meter, one with iambics, the other with moraic trochees, and show that the iambic parse is superior.