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Mora-Counting Meter in Somali

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Introduction

(1) Somali has a rich metrical traditon in oral literature, with verse forms that count syllables, moras, and both (Andrzejewski and Lewis 1964; Banti and Giannatasio 1996; Fabb 1997, 1999; Johnson 1984, among others.)

(2) The *masafo* is made up of half-lines that tend to be nine moras long, although the range may be as few as 6 moras, or as many as 15.

(3) This range in possible *masafo* half-lines has lead to researchers postulating a variety of templates for the half-line.

(4) I argue that the *masafo* hard to characterize because the metrical constraints on the form can be violated.

(5) Violated constraints are typical of Optimality Theory (Prince and Smolensky 1993).

(6) Here I describe the meter as one where:
   a. Half-lines consist of four iambic feet (quantity, not stress-based)
   b. Lines consist of eight iambic feet
   c. Half-lines must be viewed as part of a larger, line-based constituent.

(7) Also, where possible, half-lines (and other constituents) divide evenly. Misalignment of metrical constituents allows the line to consist of eight feet, even if the resulting half-lines are imbalanced.

(8) I present a preliminary analysis using constraints to predict the gradient well-formedness of Somali *masafo* lines.

(9) Overview:
   i. Somali prosodic phonology
   ii. The basics of the *masafo* verse form
   iii. Distribution of moras in the verse
   iv. A sketch of an Optimality Theoretic account of the *masafo*

Somali Prosodic Phonology

(10) Accent assignment in Somali depends on mora count; masculine/singular accents the penult, while feminine/plural accents the final mora (Hyman 1981, Orwin 1996)

(11) Note on Symbols in the Somali orthography:

a. c is a voiced pharyngeal fricative [ʕ]

b. x is a voiceless pharyngeal fricative [ħ]

c. dh represents a voiced retroflex stop [ɖ]

d. sh represents a voiceless palato-alveolar fricative [ʃ]

e. ' represents glottal stop [ʔ]

(12) Somali noun pairs

a.	ínan	'boy'	inán	'girl'
b.	nácas	'stupid man'	nacás	'stupid woman'
c.	kálax	'ladle'	kaláx	'ladles'
d.	bálli	'water reservoir'	ballí	'water reservoirs'

(13) Words with long vowels and diphthongs surface with rising accent or falling accent. Rising accent corresponds to accent on the first mora in bimoraic sequences; falling accent corresponds to accent on the second mora in a bimoraic sequence.

(14) Accent assignment in syllables with long vowels and diphthongs:

a.	daméer	'young donkey, masc'	dameér	'young donkey, fem.'
b.	darmáan	'colt'	darmaán	'filly'
c.	túug	'thief'	tuúg	'thieves'
d.	- éi	'dog'	eí	'dogs'

(15) Long vowels and diphthongs count as moraic; coda consonants (even if geminates) do not contribute moras.

(16) Bimoraic syllables can be closed word-medially, even by geminates: (Saeed 1987)

a.	wanaagsan	'good'
b.	dheer	'tall'
c.	gaaban	'short'
d.	gaaggaaban	'short, pl.'
e.	gugguban	'burnt, pl.'
f.	nasiibdarro	'bad luck, ill-fate'
g.	aabbayaal	'fathers'

The *Masafo* Verse Form

(17) The *masafo* verse form (also referred to as the *jiifto*; see Banti and Giannattasio 1996 for possible differences) is one of a number of alliterative verse forms used in Somali.

(18) Commas are conventionally used to indicate caesura, which divide each line into two half-lines; caesura always correspond to a word-boundary and often are accompanied by pauses (Banti and Giannattasio 1996.)

(19) Half-lines are typically characterized as having 9 moras each (Banti and Giannattasio 1996, Johnson 1984). The length of *masafo* half-lines ranges from 6 moras to 15.

(20) Half-lines also typically alliterate with each other, suggesting half-lines are constituents, and that they form the constituent "line" together (Fabb 1999).

(21) The lines directly below is alliterated in d, as indicated by underlining. Alliterative words should be content words, not function words.

(22) Examples of lines from *The Sayid's Reply* (Dacwad baan ka leeyahay)(translation Andrzejewski and Lewis 1964: 75):

1 Ogaadeen ha ii dirin, dacwad baan ka leeyahay
"Concerning your plea 'Do not incite the Ogaadeen against us' I also have a complaint"

2 War, duul haad Amchaaraha, adiga Kaa ma dayayee
"The people of the Ethiopian region look for nothing from you,"

3 Deyntaan ku leeyahay, dun ha iiga qaadin e
"So do not press my claim against them."

4 Wuchuu aniga iga dilo, diyo hayga siinin e
"Do not claim on my behalf the blood money which they owe me."

5 Amba waa ka dabo geli, dakankiyo qaadkee
"I will myself seek to recover the property and the loot which they have seized"

6 Dirham haddii aan kaga tago, anaa been dabaad ah e
"Were I to leave a single penny with them my pledge would be perverted."

(23) The lines directly above consist of half-lines of varying lengths:

	Half-line A	Half-line B
a. Line 1:	10 moras	10 moras
b. Line 2:	10 moras	10 moras
c. Line 3:	10 moras	9 moras
d. Line 4:	10 moras	9 moras
e. Line 5:	9 moras	8 moras
f. Line 6:	11 moras	10 moras

(24) Question: how do we characterize this verse?

The Distribution of Moras in Half-lines

(25) Basic approach here: scansion of 505 *masafo* lines (1009 half-lines) by the Sayid, Maxamad Cabdulle Xasan (from Jaamac Cumar Ciise 1974)

(26) Short vowels scanned as light and long vowels and diphthongs scanned as heavy.

(27) The initial numbers show that 70.2% of the half-lines consist of either 9 or 10 moras.

# of Moras	Total Half-lines	% of total
6	1	.1%
7	9	.9%
8	64	6.3%
9	399	39.5%
10	310	30.7%
11	137	13.6%
12	56	5.6%
13	22	2.2%
14	10	1%
15	1	.1%

(28) If we consider the mora count by initial or final half-line, we see that the distribution is somewhat skewed – half-lines A tend to be somewhat longer, and half-lines B tend to be somewhat shorter.

# of Moras	Half-line A	% of A	Half-line B	% of B
6	0	0%	1	.2%
7	0	0%	9	1.8%
8	7	1.4%	57	11.3%
9	170	33.7%	229	45.3%
10	168	33.3%	142	28.1%
11	77	15.3%	60	11.9%
12	49	9.7%	7	1.4%
13	22	4.4%	0	0%
14	10	2%	0	0%
15	1	.2%	0	0%

(29) The mora count for entire lines show that only 19.4% of the lines consist of 18 mora(if both half-lines are 9 moras). 1/4 contain 19 moras, and nearly 1/3 have 20 moras.

(30) Mora Count Total by Line

Full Line Total -- MORA		
Moras	Total # of Lines	% of Full Lines
10	1	.25%
17	8	1.6%
18	98	19.4%
19	129	25.5%
20	153	30.3%
21	79	15.6%
22	29	5.7%
23	7	1.4%
24	1	.25%

(31) These numbers suggest that half-lines should be viewed as a part of the constituent line(a similar argument is made on the basis of alliteration in Fabb 1999). There seems to be a ***compensatory relationship*** between length in the two half-lines.

(32) Half-lines favor a nine-line mora count. However:

- There are 573 different line types (this counts word boundaries – so LLLLL LL LL and LL LL LLL LL are each different types)
- If the types are reduced by ignoring word boundaries, but looking just at syllable type, there are 201 types (this treats LLL HHL and LL LHHL as the same type, LLLHHL)
- Even if the line types are reduced, there are still 104 types that occur only once.

(33) There is an abundant proliferation of line types in the *masafo*.

(34) We can examine the more prolific half-line types to aid in characterizing the half-line.

(35) The chart puts in two types of footing – iambs and moraic trochees (following the asymmetric typology of Hayes 1987, 1995). I assume that quantitative meter uses quantity-sensitive feet.

(36) All half-line types with at least 15 examples (=577 (57%) of half-line types)

Type	Total	Moras	Iambic	Moraic Trochee
LLHLHLL	65	9	(LL)(H)(LH)(LL)	**(LL)(H)**L**(H)(LL)**
LLHLHH	57	9	(LL)(H)(LH)(H)	**(LL)(H)**L**(H)(H)**
LLLLLHLL	46	9	(LL)(LL)(LH)(LL)	**(LL)(LL)**L**(H)(LL)**
LHLLLHH	37	10	(LH)(LL)(LH)(H)	L**(H)(LL)**L**(H)(H)**
LLLLLHH	37	9	(LL)(LL)(LH)(H)	**(LL)(LL)**L**(H)(H)**
LLHLLLH	34	9	(LL)(H)(LL)(LH)	(LL)(H)(LL)L(H)
LHHLHH	33	10	(LH)(H)(LH)(H)	L**(H)(H)**L**(H)(H)**
LLLHHL	31	8	**(LL)(LH)(H)**L	**(LL)**L**(H)(H)**L
LHHLHLL	29	10	(LH)(H)(LH)(LL)	L**(H)(H)**L**(H)(LL)**
HLLLHH	25	9	(H)(LL)(LH)(H)	**(H)(LL)**L**(H)(H)**
LHHLHLH	24	11	(LH)(H)(LH)(LH)	L**(H)(H)**L**(H)**L**(H)**
HLLLHLL	23	9	(H)(LL)(LH)(LL)	**(H)(LL)**L**(H)(LL)**
LLLHLHH	21	10	(LL)(LH)(LH)(H)	**(LL)**L**(H)**L**(H)(H)**
HLHLHH	17	10	(H)(LH)(LH)(H)	**(H)**L**(H)**L**(H)(H)**
LLHLLLLL	17	9	**(LL)(H)(LL)(LL)**L	(LL)(H)(LL)(LL)L
HHLHH	17	9	(H)(H)(LH)(H)	**(H)(H)**L**(H)(H)**
LHHLLLH	17	10	(LH)(H)(LL)(LH)	L(H)(H)(LL)L(H)
LLHLLLLH	16	10	(LL)(H)(LL)(LL)(H)	(LL)(H)(LL)(LL)(H)
HHLHLL	16	9	(H)(H)(LH)(LL)	**(H)(H)**L**(H)(LL)**
LLHLHLH	15	10	(LL)(H)(LH)(LH)	**(LL)(H)**L**(H)**L**(H)**

37) Iambic footing results in:
   a. All syllables are parsed evenly into feet, except for 2 types.
   b. Most lines consist of 4 feet (1 type is 3 feet, 1 type is 5 feet).

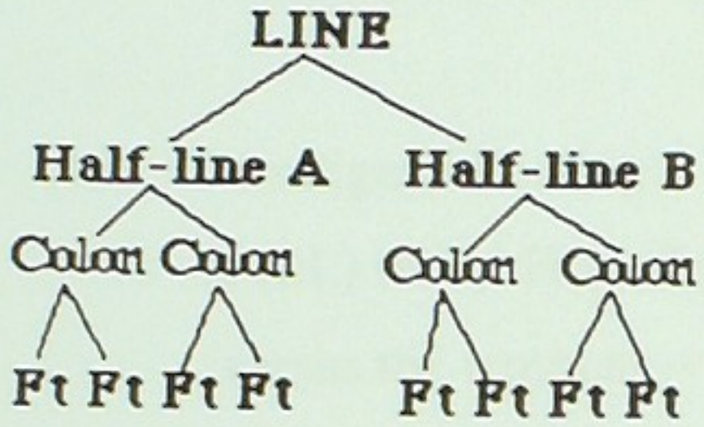
(38) Trochaic footing results in:

a. Only one type foots all syllables into feet; all others have at least one unfooted syllable.
b. 6 types have 2 unfooted syllables, and 1 type has 3 unfooted syllables.
c. Most lines consist of 4 feet (1 type is 3 feet, 1 type is 5 feet).

(39) In a constraint-based analysis (like Optimality Theory), unfooted syllables violate a parsing constraint. An iambic analysis means fewer PARSE violations.

(40) Proposal: the *masafo* half-line consists of 4 iambic feet; a *masafo* line has 8 iambic feet total.

(41) "Template" for the *masafo* (assuming a binary branching structure):



(42) The ideal half-line is 4 feet. There are a number of half-lines that are either 5 feet or 3 feet (under the iambic analysis).

(43) Some examples of lines that violate the half-line template:

a. LLLL LL LH L LL, H LHLLL (231, 24[1])
Ararsame gunta inaan ka jaro, wow gudoonsadaye

b. HH LHLL LH, HLH LLL (231, 26)
Gaaskii ishaarada lahaa, guutadii wacaye

c. LL LL LH H L LL, LLLHLLL (34, 80)
Dabar iyo hoggaan buu ku xiray,duluflahoodiyehur

d. LL H LHL, L LLL LH LL (78, 74)
Mase ways daboolna, nin dulmiyan allaa oge?!

e. H LL LHL, LHHL HL L (97, 110)
Diin niman lahayni, dameercaynsan weeye e

[1]These numbers indicate beginning page and line number of the *masafo* in Jaamac Cumar Ciise (1974).

(44) How do these lines show satisfaction of the template?

a. Within the same line, a half-line with 5 feet may "compensate" for half-line with only 3 feet.

b. A half-line may foot across caesura, so that a 4 foot/3 foot pair of half-lines (or 3/4) may be refooted to satisfy the entire 8 foot requirement.

(45) Compensation:

a. (LL)(LL) (LL) (LH) (L L)L, (H) (LH)(LL)L (231, 24)

b. (H)(H) (LH)(LL) (LH), (H)(LH) (LL)L (231, 26)

c. (LL) (LL) (LH) (H) (L L)L, (LL)(LH)(LL)L (34, 80)

(46) Misaligned Footing:

a. (LL) (H) (LH)(L, L) (LL)(L L)(H) (LL) (78, 74)

(versus the template-violating: (LL) (H) (LH)L,(L L)(LL) (LH) (LL))

b. (H) (LL) (LH)(L, L)(H)(H)(L H)(L L) (97, 110)

(versus the template-violating: (H) (LL) (LH)L, (LH)(H)(L H)(L L))

(47) Satisfying the line template is more important than binary branching structure below the line, and is more important than well-aligned half-lines.

(48) There are also examples of that apparently exceed the template:

a. LHLL LLLHL LH, LLLHHL
Dariiqada Axmadiyaannu nahay, eheladeediiye(34,1)

b. LH LLL LLL L, LL LLL LL LH (322, 34)
Hashaan summadda hororka ah, halka luqunta kaga dhigay

c. L LH L LL LH, LL HL LL H (97, 64)
War haddii la kala diday, sida deero iyo cawl

d. LLL HL LL LH, LH HL HLL (78, 68)
Dabarka Ciise lagu xiray, anaa laygu dooniye

(49) Excessive footing leads to (excessive) instances where feet and prosodic words misalign. Compare (first example is 8 feet, where the bold underline indicates fatal misalignment):
a. (LH)(LL) (LL)(LH)L (LH), (LL)(LH)(H)L

versus misaligned: (LH)(LL) (LL)(LH)(**L L**)~~(H), (LL)(LH)(H)L~~

b. (LH) (LL)L (LL)(**L L**), (LL) (LL)L (LL) (LH)

versus misaligned: (LH) (LL)(**L L**)(LL) L, (LL) (LL)(**L L**)(**L L**)(H)

c. (**L L**)(H) L (LL) (LH), (LL) (H)L (LL)(H)

versus misaligned: (**L L**)(H) (**L L**)(**L L**)(H), (LL) (H)(**L L**)(**L H**)

versus misaligned: L (LH) (**L L**)(**L L**)(H), (LL) (H)L (LL)(H)

d. (LL)L (H)L (LL) (LH), (LH) (H)L (H)(LL)

versus misaligned: (LL)(**L H**)(**L L**)(**L L**)(H), (LH) (H)(**L H**)(LL)

(50) Unfooted syllables are permissible (and their presence explains why there are longer lines). Unfooted syllables lead to better alignment; footing holds within word boundaries as much as possible.

Optimality Theory and Somali Verse

(51) Optimality Theory allows for ranked constraints that can be minimally violated (Prince and Smolensky 1993, among others).

(52) Work in metrics in Optimality Theory has argued this approach characterizes the gradient well-formedness frequently found in verse (Hayes and MacEachern 1998, Golston 1998).

(53) Here I sketch out the basics of how this approach would work for Somali.

(54) For the *masafo*, we need the following types of constraints:

a. TEMPLATIC CONSTRAINTS: to predict the size of the line, half-line

b. FOOTING: *masafo* is argued to be a verse of iambic feet, syllables are parsed into feet where possible

c. ALIGNMENT: satisfaction of the template can mean a half-line doesn't align well with a colon or a foot, or it can mean that a foot spans two words.

(55) Accounting for a well-parsed line, with the structure:

$[_L[_H[_C(LL)(LH)_C]\ [_C(LH)(H)_C]_H]$,$[_H[_C(LH)\ (LL)_C][_C(LH)(H)_C]_H]_L]$

Dayayadii horeetaa, rasaas lagu digsiiyoo (97, 49)

(56) We can observe from the line above that:
a. The left-edge of half-lines align with the left edge of a colon
b. The right-edge of half-lines align with the right edge of a colon.
c. Feet do not misalign with word boundaries.

(57) Feet also must be iambic.

(58) The relevant constraints can be formulated in Optimality Theoretic terms.

(59) FOOTFORM (FTFM): Feet are iambic.

(60) HALFLINEALIGN (HALFALIGN): The edges of half-lines align with the edges of cola. (Could be treated as two separate constraints, one for each edge.)

(61) FTWD: Feet do not misalign with word boundaries. (Somewhat tricky in ALIGN, but see Crowhurst 1994 for an example of this in stress.)

(62) Finally, the *masafo* should consist of 8 feet total. For simplicity's sake, this is treated as a single templatic-type constraint. However, it may be better treated as binary branching and prosodic layering, as in Golston (1998).

(63) 8FEET: The template for *masafo* lines consists of 8 feet.

(64) How the optimal parse of (55) fares:

	FTFM	8FEET	HALFALIGN	FTWD
$[_H[_C(LL)(LH)_C][_C(LH)(H)_C]_H].[_H[_C(LH)\ (LL)_C][_C(LH)(H)_C]_H]$	✓	✓	✓	✓

(65) The following line shows how compensatory parsing works between half-lines; any other parse of the line fails on other constraints.

(LL)(LL) (LL) (LH) L (LL), (H) (LH)(LL)L (231, 24)

Ararsame gunta inaan ka jaro, wow gudoonsadaye

(66) Competition among parses for two half-lines of unequal foot size (5 feet/3 feet):

	FTFM	8FEET	FTWD	HALFALIGN	PARSE
☞ [H[C(LL)(LL)C][C(LL)(LH) LC] [C(LL) H].[H(H)C][C(LH)(LL)LC]H]				**	**
[H[C(LL)(LL)C][C(LL)(LH) C] [C(L L)L) H].[H(H)C][C(LH)(LL)LC]H]			*!	**	
[H[C(LL)(LL)C][C(LL)(LH) C] [C (L L) (L H]H) C] [H [C(LH)(LL)L C]H]			**!	*	
[H[C(LL)(LL)C][C(LL)(LH L)C] [C(LL) H].[H(H)C][C(LH)(LLL)C]H]	*!		*	**	

(67) The following repeated example is one where exhaustive parsing exceeds the template; the best parse of the form is one parsed into well-aligned half-lines ((a) in the next example); other parses incur templatic violations, or excessive violations of FTWD:

L LH L LL LH, LL HL LL H (97, 64)
War haddii la kala diday, sida deero iyo cawl

(68) Competitive parses:

☞ a. (L L)(H) L (LL) (LH), (LL) (H)L (LL) (H) Violates FTWD once, PARSE twice

b. L (LH) L (LL) (LH), (LL) (H)L (LL) (H) Violates 8FEET, HALF-ALIGN twice, PARSE 3 times

c. (L L)(H) (L L)(L L)(H), (LL) (H)(L L)(L H) Violates 8FEET, FTWD five times, once HALF-ALIGN twice

d. L (LH) (L L)(L L)(H), (LL) (H)L (LL) (H) Violates FTWD twice, PARSE twice.

Conclusion

(69) The *masafo* half-lines display considerable variation in length and line types.

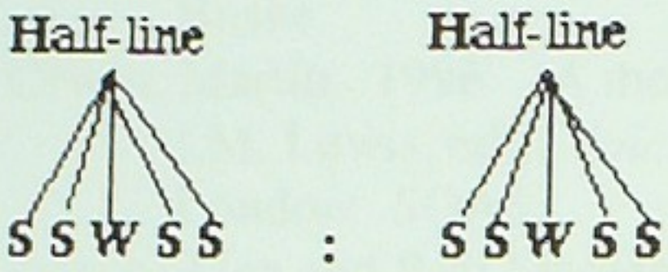
(70) If this variation is the product of a fixed template and metrical rules, the divergence comes in having multiple substitution rules.

(71) Banti and Giannattasio (1996) characterize the line like this:

$$\left\{ \begin{array}{c} \breve{}- \\ -- \\ \breve{}-\breve{} \end{array} \right\} --\breve{}-- \left\{ \begin{array}{c} -\breve{} \\ -- \end{array} \right\} . \left\{ \begin{array}{c} -- \\ -- \\ \breve{}-\breve{} \end{array} \right\} --\breve{}--\breve{}--$$

(72) In the account here, this variation is the product of ranked, minimally violable constraints.

(73) Fabb (1997) characterizes the *masafo* in simpler terms:



(74) Metrical positions are filled with H or LL (if S) or with L (if H). Also under this account:

a. The first position can vary a lot, with up to 4 moras.
b. First half-line can end with HL
c. Some S positions are filled with three moras.

(75) To maintain the medial W (in anyone's analysis), considerable leeway must be given to how other syllables are scanned into metrical positions.

(76) Here I claim that the *masafo* is better characterized in terms of violation and misalignment, ***where necessary***. Satisfaction of metrical constraints is gradient, rather than absolute.

(77) The more statistical, gradient approaches used in OT metrics (Golston 1998, Hayes and MacEachern 1998) offer some insights into variation in mora-counting meter in Somali.

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