Maxent and meter

A. Overview

(1) a. point of work on meter
   b. previous results
   c. what Hayes et al. (2012) do
   d. current results
   e. Welsh

B. Point of work on meter

(2) What do poetic restrictions tell us about the grammar?

(3) “The second coming” — William Butler Yeats
    Turning and turning in the widening gyre
    The falcon cannot hear the falconer;
    Things fall apart; the centre cannot hold;
    Mere anarchy is loosed upon the world,
    The blood-dimmed tide is loosed, and everywhere
    The ceremony of innocence is drowned;
    The best lack all conviction, while the worst
    Are full of passionate intensity.

(4) “The Cremation of Sam McGee” — Robert W. Service
    There are strange things done in the midnight sun
    By the men who moil for gold;
    The Arctic trails have their secret tales
    That would make your blood run cold;
    The Northern Lights have seen queer sights,
    But the queerest they ever did see
    Was that night on the marge of Lake Lebarge
    I cremated Sam McGee.
“Jolene” — Dolly Parton
Jolene, jolene, jolene, jolene
Im begging of you please don’t take my man
Jolene, jolene, jolene, jolene
Please don’t take him just because you can
Your beauty is beyond compare
With flaming locks of auburn hair
With ivory skin and eyes of emerald green
Your smile is like a breath of spring
Your voice is soft like summer rain
And I cannot compete with you, jolene

Does art break the rules or does it reveal the rules?

C. Previous results

A stress maximum cannot occur in a weak position (Halle and Keyser, 1971).

Stress maximum: a stressed syllable surrounded by stressless syllables.

<table>
<thead>
<tr>
<th>non-maxima</th>
<th>maxima</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books in...</td>
<td></td>
</tr>
<tr>
<td>Hάppy are...</td>
<td></td>
</tr>
<tr>
<td>Fíne háts...</td>
<td></td>
</tr>
<tr>
<td>...big mέn are...</td>
<td>...the mέn are...</td>
</tr>
<tr>
<td>...the mέn sing...</td>
<td>...the ápples...</td>
</tr>
<tr>
<td>...big mέn sing...</td>
<td>...complete the...</td>
</tr>
</tbody>
</table>

Positions
- iambic pentameter
  \[ W S W S W S W S W S \]
- trochaic tetrameter
  \[ S W S W S W S W \]

Prosodic hierarchy (Hayes, 1989): word, clitic group, phonological phrase, intonational phrase, utterance.

Clitic group formation
a. Every content word (lexical category) belongs to a separate Clitic Group.
b. Definition: The host of a Clitic Group is the content word it contains.
c. Definition: X and Y share category membership in C if C dominates both X and Y.
d. Clitic words are incorporated leftward or rightward into an adjacent Clitic Group. The group selected is the one in which the clitic group shares more category memberships with the host.
(12) Phonological phrase construction. In the configuration $[X'' \ldots X^0 Y'' \ldots]$

a. The sequence $\ldots X^0 \ldots$ obligatorily occupies the same P-phrase,
b. $Y''$ may optionally adjoin to the P-phrase of $X^0$ if it contains only one Clitic Group, and
c. All Clitic Groups unaffected by rules (a) and (b) form P-phrases.

(13) Phonological phrases in Shakespeare

[When lofty trees | I see | barren of leaves]

*[With lofty birches | quite barren of leaves]

*[When lofty birches | are barren of leaves]

D. The theory

(14) Use ALIGN constraints to put the metrical structure into conformity with the prosodic hierarchy.

(15)

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Line

W W W W S

Foot Foot Foot Foot

W S W S W S W S

And short retire-ment urge sweet return
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(16) ALIGN(PH,MH)

PH = \{W, CG, PP, IP, U\}
MH = \{Foot, Line\}

(17) Stress matching

*STRESS IN W Avoid stressed syllables in W position
*STRESSLESS IN S Avoid stressless syllables in S position

(18) Sequences

*RISE FROM S Do not rise in stress out of an S position
*FALL FROM W Do not fall in stress out of a W position
*NO FALL FROM S Stress must fall out of an S position
*NO RISE FROM W Stress must rise out of a W position

E. Hayes et al. (2012)

(19) Scan by hand
Shakespeare’s Sonnets
Books VIII and IX of Milton’s Paradise Lost
Calculate violations and weights for each of the 87 constraints in their set; choose the best constraints.

F. Welsh: background

Dafydd ap Gwilym, *Y Gwynt*.

Fwife aghynt, helynt hylaw,
Agwredd drws a gerdd dráw,

Gwyr eres wyd garw ei sain,
Drud byd heb droed heb ādain.

Uthr yw mor eres y’th rôd
O bantri wybr heb ùntroed,

A buaned y rhéd
Yr awr hon dros y fron frý.

Sky-wind, unhindered course,
mighty commotion passing yonder,
you are a harsh-sounding minstrel,
world’s fool without foot or wing.
It’s amazing how wondrously you were sent from the pantry of the sky without any feet,
and how swiftly you run now across the hilltop on high.

Caesura/gorffwysfa in cynghanedd sain
There are two and they can go anywhere in the line.

Caesura/gorffwysfa in cynghanedd lusg
There is one and it can go anywhere in the line.

Caesura/gorffwysfa in cynganeddion croes and traws:
There is one. It can go after the first, second, third, or fourth syllables unless the final word in the first half line is monosyllabic and the final word in the second half line is polysyllabic. In that case, it may not fall after the fourth syllable.
G. Welsh: maxent

(27) Segment coding

<table>
<thead>
<tr>
<th></th>
<th>[syl]</th>
<th>[gorff]</th>
<th>[stress]</th>
</tr>
</thead>
<tbody>
<tr>
<td>u</td>
<td>+</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>s</td>
<td>+</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>w</td>
<td>-</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>g</td>
<td>-</td>
<td>+</td>
<td>0</td>
</tr>
</tbody>
</table>

- stressless syllable
- stressed syllable
- word boundary
- gorffwysfa

(28) Line coding

Yr wybrynt, helynt hylaw,  u w s u g s u g s u
Agwrrdd drwst a gerdda draw,  s u w s g u w s u w s
Gŵr eres wyd garw ei sain,  s w s u w u g s w u w s
Drud byd heb droed heb adain. s w s g u w s w u w s u
Uthyr yw mor eres y’th roed  s w u g u w s u w u w s
O bantri wybhr heb untroed,  u w s u g s w u w s u
A buaned y rhed y w s u g u w s u
Yr awr hon dros y fron fry. u w s w u g u w u w s

(29) 500 lines of cywydd coded by hand from the www.dafyddapgwilym.net website. For some reason, the software requires at least 3000 items, so all counts were multiplied by 10.

(30) Here are the results for 20 constraints, including 4-grams, no projections.

1  [+word_boundary][-syl] 6.837  coding
2  [-syl][+word_boundary] 6.795  coding
3  [-syl][-syl] 7.38  coding
4  [+str][+str] 4.472  language
5  [+word_boundary][-str][+gor] 2.996
6  [+syl][+str][+word_boundary] 5.491
7  [+word_boundary][-word_boundary][-str][-str] 1.061
8  [+syl][-str][-str] 2.17  language
9  [+word_boundary][-str][+syl][+str] 1.023  language
10 [-word_boundary][+str][+syl][+str] 3.27  language
11 [-gor][-word_boundary][+str][-gor] 2.378
12 [+word_boundary][-word_boundary][+str][+gor] 2.409
13 [+word_boundary][-word_boundary][+gor] 2.946
14 [+syl][+str][+gor] 0
15 [-word_boundary][-str][-str] 2.832
16 [+word_boundary][-str][-str] 3.163
17 [+gor][-str][+gor] 3.147
18 [+syl][+str][-syl] 3.432  language
19 [+gor][-str][+word_boundary] 2.443
20 [+syl][+syl][+str] 2.034
H. References


