Form in the Machine
Tracing Imitation and Influence in the American Haiku

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Translations of Foreign Poetry into US Journals, 1915-1930

Fig. 1
The beech-leaves are silver
For lack of the tree's blood.

At your kiss my lips
Become like the autumn beech-leaves.

An old willow with hollow branches
Slowly swayed his few high bright tendrils
And sang:

Love is a young green willow
Shimmering at the bare wood's edge.

As cool as the pale wet leaves of lily-of-the-valley
She lay beside me in the dawn.

Among twenty snowy mountains
The only moving thing
Was the eye of the black bird
From *Survey of Modernist Poetry* (Riding and Graves, 1927)

Who was the inventor of the style of the first two pieces, Mr. Aldington or Mr. Williams? or yet H.D. or F.S. Flint?....In the two last pieces, who is responsible for the form? Who first thought of imitating the Japanese *hokku* form? Or rather who first thought of imitating the French imitations of the *hokku* form? Did Mr. Aldington suggest a slightly shorter poem to Mr. Stevens or Mr. Pound or did Mr. Pound suggest a slightly longer poem to Mr. Aldington, etc., or did Mr. Pound and Mr. Stevens and Mr. Aldington and Mr. Williams decide, as mutual pairs, to work as a school team, or did Mr. Williams and Mr. Stevens and Mr. Aldington and Mr. Pound pair off, as being by nationality more pairable?
Hokku, haikai, and haiku in the Google Books Corpus (1890-1930)
POETRY: A Magazine of Verse

I come to you as a grown child
Who has had a pig-headed father;
I am old enough now to make friends.
It was you that broke the new wood,
Now is a time for carving.
We have one sap and one root—
Let there be commerce between us.

IN A STATION OF THE METRO

The apparition of these faces in the crowd:
Petals on a wet, black bough.

Ezra Pound

“In a Station of the Metro”
Ezra Pound
(April, 1913)
Distribution of *Hokku* Texts in Corpus (about 400 in total)

Fig. 6
Changing Poem Lengths in *Poetry Magazine*

- **Average**
- **Median**
- **Minimum**

Length of Poem in Characters

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**Fig. 7**
Transforming *Hokku* into Machine Interpretable Form

Poem as Raw Text

So cold I cannot sleep; and as I cannot sleep, I'm colder still.  
*Author Unknown; A 1902 translation by Basil Hall Chamberlain*

Poem as a tokenized “bag-of-words”

['so', 'cold', 'i', 'can', 'not', 'sleep', 'and', 'as', 'i', 'can', 'not', 'sleep', 'i’m', 'colder', 'still']

Poem as “bag-of-words” without stopwords (i.e., function words)

['so', 'cold', 'sleep', 'colder', 'still']

Poem as *labeled* feature set (note that word-order is irrelevant)

[
{{'cold': True, 'colder': True, 'less_than_20_syl': True, 'sleep': True, 'still': True, 'so': True}, 'haiku']
The Machine Learning Workflow

Classification Algorithm
(Naïve Bayes)

Labeled Haiku and Non-Haiku Feature Sets

Haiku and Non-Haiku Feature Sets with Labels Withheld

Fig. 9
## Probability Measures based on Machine Learning Outcome

<table>
<thead>
<tr>
<th>Word</th>
<th>Label</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>sky = True</td>
<td>not-ha : haiku =</td>
<td>5.7 : 1.0</td>
</tr>
<tr>
<td>shall = True</td>
<td>not-ha : haiku =</td>
<td>5.0 : 1.0</td>
</tr>
<tr>
<td>sea = True</td>
<td>not-ha : haiku =</td>
<td>5.0 : 1.0</td>
</tr>
<tr>
<td>man = True</td>
<td>not-ha : haiku =</td>
<td>4.3 : 1.0</td>
</tr>
<tr>
<td>last = True</td>
<td>not-ha : haiku =</td>
<td>3.7 : 1.0</td>
</tr>
<tr>
<td>snow = True</td>
<td>haiku : not-ha =</td>
<td>3.7 : 1.0</td>
</tr>
<tr>
<td>earth = True</td>
<td>not-ha : haiku =</td>
<td>3.7 : 1.0</td>
</tr>
<tr>
<td>blue = True</td>
<td>not-ha : haiku =</td>
<td>3.7 : 1.0</td>
</tr>
<tr>
<td>pass = True</td>
<td>not-ha : haiku =</td>
<td>3.7 : 1.0</td>
</tr>
<tr>
<td>voice = True</td>
<td>haiku : not-ha =</td>
<td>3.7 : 1.0</td>
</tr>
<tr>
<td>white = True</td>
<td>not-ha : haiku =</td>
<td>3.0 : 1.0</td>
</tr>
<tr>
<td>house = True</td>
<td>haiku : not-ha =</td>
<td>3.0 : 1.0</td>
</tr>
<tr>
<td>child = True</td>
<td>not-ha : haiku =</td>
<td>3.0 : 1.0</td>
</tr>
<tr>
<td>give = True</td>
<td>not-ha : haiku =</td>
<td>3.0 : 1.0</td>
</tr>
<tr>
<td>lo = True</td>
<td>haiku : not-ha =</td>
<td>3.0 : 1.0</td>
</tr>
<tr>
<td>sun = True</td>
<td>not-ha : haiku =</td>
<td>3.0 : 1.0</td>
</tr>
<tr>
<td>life = True</td>
<td>not-ha : haiku =</td>
<td>2.3 : 1.0</td>
</tr>
<tr>
<td>full = True</td>
<td>haiku : not-ha =</td>
<td>2.3 : 1.0</td>
</tr>
<tr>
<td>things = True</td>
<td>haiku : not-ha =</td>
<td>2.3 : 1.0</td>
</tr>
<tr>
<td>morning = True</td>
<td>haiku : not-ha =</td>
<td>2.3 : 1.0</td>
</tr>
</tbody>
</table>

“sky” is 5.7 times more likely to appear in a non-haiku text as in a haiku text.

“snow” is 3.7 times more likely to appear in a haiku text.

Fig. 10
Accuracy Scores for Text Classification

**Post-1914**
- Post-1914 Hokku, 335 Poems: 64%
- Little Review (1914-1922), 119 poems: 65%
- Poetry Magazine (1912-1923), 400 poems: 72%
- Others (1915-1919), 138 poems: 64%
- Contemporary Verse (1916-1919), 108 poems: 76%
- Smart Set (1915-1919), 92 poems: 71%
- Masses (1911-1917), 113 poems: 75%
- **Total Accuracy**: 75%

**Pre-1914**
- Pre-1914 Hokku, 103 Poems: 69%
- Little Review (1914-1922), 119 poems: 77%
- Poetry Magazine (1912-1923), 400 poems: 72%
- Others (1915-1919), 138 poems: 80%
- Contemporary Verse (1916-1919), 108 poems: 76%
- Smart Set (1915-1919), 92 poems: 77%
- Masses (1911-1917), 113 poems: 75%
- **Total Accuracy**: 80%

*Fig. 11*
Using Syllable Counts as a Feature

- Majority grouped around 16 to 20 syllables
- One grouping around 16 to 22 syllables
- One grouping around 30 syllables

Fig. 12
Accuracy Scores for Text Classification

**Without Syllables**
- Post-1914 Hokku, 335 Poems: 64% (75%), 65% (77%), 69% (75%)
- Pre-1914 Hokku, 103 Poems: 64% (72%), 71% (77%)

**With Syllables**
- Post-1914 Hokku, 335 Poems: 76% (80%), 78% (83%)
- Pre-1914 Hokku, 103 Poems: 70% (75%), 74% (78%)

**Poetry Magazine (1912-1923), 400 poems**
**Little Review (1914-1922), 119 poems**
**Others (1915-1919), 138 poems**
**Contemporary Verse (1916-1919), 108 poems**
**Smart Set (1915-1919), 92 poems**
**Masses (1911-1917), 113 poems**
Being thirsty,
I filled a cup with water,
And, behold! Fuji-yama lay upon the water,
Like a dropped leaf!

In the orchard fall the apples
Tud - tud - tud - and rot
The world hungers for food for love for life
Yet in the orchard fall the apples
Tud - tud - tud - and rot
And the worms grin

It was an icy day. We buried the cat,
Then took her box
And set match to it
In the back yard. Those fleas that escaped
Earth and fire
Died by the cold.
THE DRY YEAR
No rain stirs; And the dust
On floors is still; The moonlit nights
Like dust
Or withered leaves. - Yvor Winters (1923)

CHINOISERIE
Is it the moon afar
Yonder appears?
Nay! -'tis the evening star
Seen through my tears. - J.K. Wetherill (1915)

IN THE GARDEN
I have come into the garden.
It is spring-time and there are flowers everywhere
Even on the tails of the peacocks. - Malcolm Erskine (1917)

A SWALLOW
A swallow flicks my shoulder
And turns off in the twilight
A twitter on the terrace,
A spot against the skylight. - Lyon Sharman (1917)