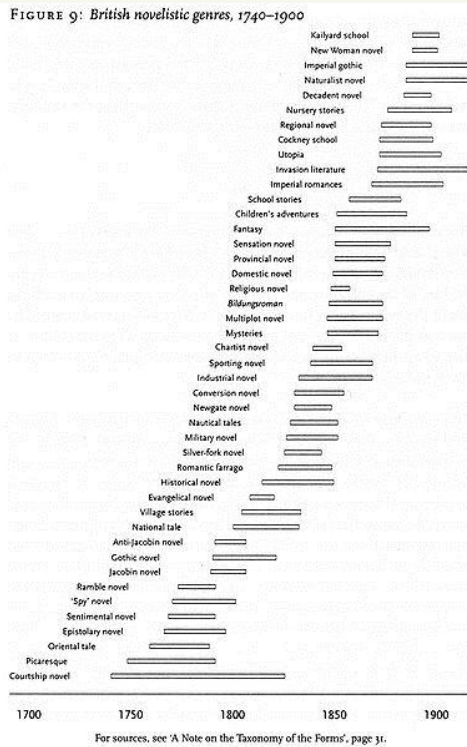


Computational Criticism:
Using Quantitative Methods
for the Interpretation of Poetry

FIGURE 9: British novelistic genres, 1740–1900

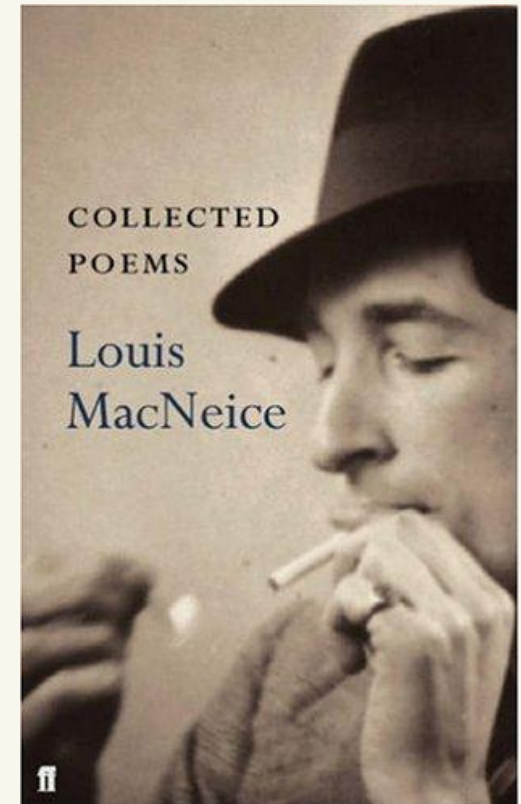


Franco Moretti,
Graphs, Maps, Trees

- Distant reading and close reading
 - Close reading and distant reading focus on different textual aspects
 - Distant reading is often used to study questions of a factual nature
- Can this gap between traditional criticism and computer-based literary research be bridged?

- Analysis of the collected poems of Louis MacNeice
- Language is "a traffic in symbols" and that "these symbols are plastic - an endless annoyance to the scientist but God's own gift to the poet"

(Experiences with Images,
p. 155)



- Aims of the study: (1) production of data on literary devices such as rhyme, meter, alliteration, assonance, onomatopoeia and other devices; (2) statistical analyses and visualisations of these data
- Collections of machine readable versions
- Basic automated application of TEI encoding
- POS tagging and lemmatisation by Morphadorner
- Phonetic Transcriptions added via pronunciation dictionary (MRC Psycholinguistic Database)
- Applications and visualisation have been programmed using Perl, Python, R and Processing

Perfect rhyme

- Exact agreement in final phoneme sequences

*Down the road someone is practising **scales**
The notes like little fishes vanish with a wink of **tails***
(Sunday Morning, ll. 1-2)

- Difficulties
 - “Near-matches” such as “use” and “loose”;
 - Repeated words at the end of lines;
 - Number of lines to be analysed;

- Slant rhyme: matches in final consonants or in final vowels

It's no go your maidenheads it's no go your **culture** / All
we want is a Dunlop tyre and the devil mend the
puncture
(Bagpipe Music, ll. 13-14)

On shining lines the trams like vast sarcophagi **move** /
Into the sky plum after sunset merging to duck's egg
barred with **mauve**
(Birmingham, ll. 25-26)

- Semi-rhyme: an agreement between a masculine rhyme and the final stressed syllable of a feminine rhyme

Finding pathos in dogs and undeveloped **hand**writing /
And young girls doing their hair and all the castles of
sand
(Wolves, ll. 3-4)

Distant Scansion

- Data about the meter was obtained from phonetic transcriptions

- The patterns were classified:
 - -X-X-X-X-X
Iambic Pentameter
e.g. "To every question gives the same reply"
 - Catalectic iambic trimeter
-X-X-X-
e.g. "We are dying, Egypt, dying"
 - X-X-X-X
Catalectic trochaic trimeter
e.g. "Neither sense nor conscience stirred"

- Difficulty: Regular stress patterns of a word may change in the context of a poetic line
e.g. The Sunlight on the Garden / Hardens
and grows cold

Alliteration

- Repetitions of phonemes at the beginning of stressed syllables.

Frozen** into his **blood** from the **fire** in his **basalt

f - - b - - f - - b

(Belfast, l. 2)

*And hanging smell of sweetest hay / Weavingly laughingly
leavingly weepingly*

- h s - s h / w l l w

(Western Landscape, ll. 20-21).

□ **Images**

- Critics have discussed images such “the sea”, “trains”, “church bells”, “Wind”, “Clocks”
- USAS Semantic Tagger; Most common categories: B1 (“Anatomy and physiology”), M6 (“Location and direction”), M1 (“Moving, coming and going”), O2 (“Objects generally”), O4 (“Physical attributes”), T1 (“Time”)
- Topic Modelling / MALLET: Poor results
- Manually edited word list created using USAS and WordNet

□ **Themes**

- Summaries of secondary literature: 15 themes, in 3 broad categories
- Themes assigned manually to poems

- Metrics produced on perfect rhyme, slant rhyme, semi-rhyme, deibhide rhyme, internal rhyme, alliteration, assonance, consonance, imagery, themes, onomatopoeia, meter, sentiment analysis (positive and negative connotations)
- Algorithms for detection of literary phenomena are inevitably imperfect
- 102,907 observations about a corpus of 127,555 tokens or 16,782 verse lines

Alliteration, Assonance and Consonance



How to count the “extent” of alliteration?

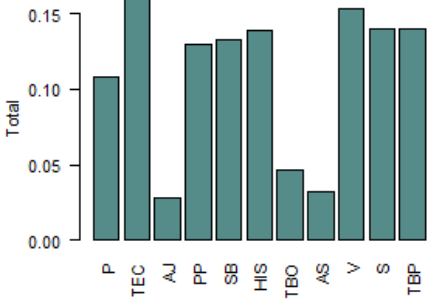
Further who failed last Friday to feel grieved
(Easter Returns)

*The flotsam of private property pekinese and
polyanthus*
(An Eclogue for Christmas)

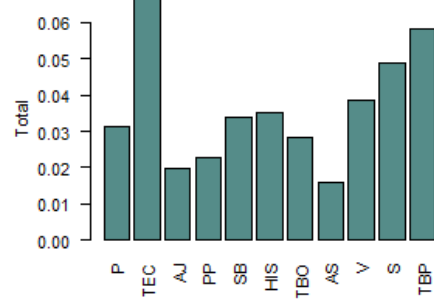
Round the corner is sooner or later the sea
(Round the Corner)

Standard deviations

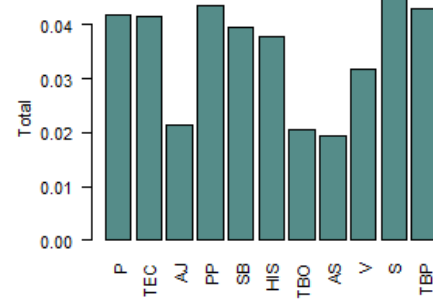
Perfect rhyme



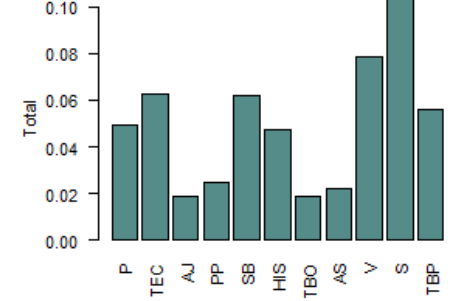
Assonance rhyme



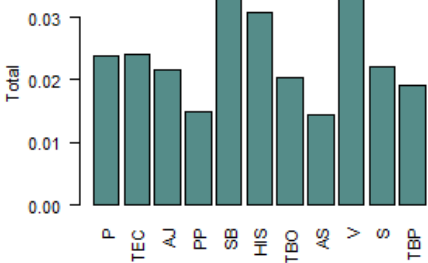
Consonance rhyme



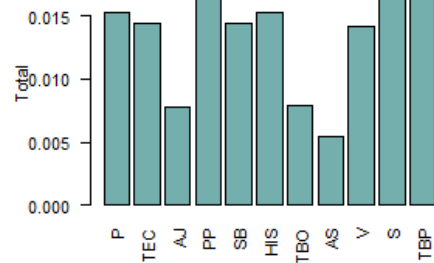
Internal rhyme



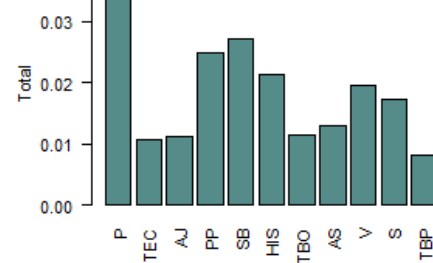
Semi rhyme



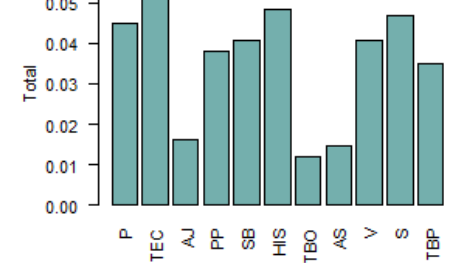
Alliteration



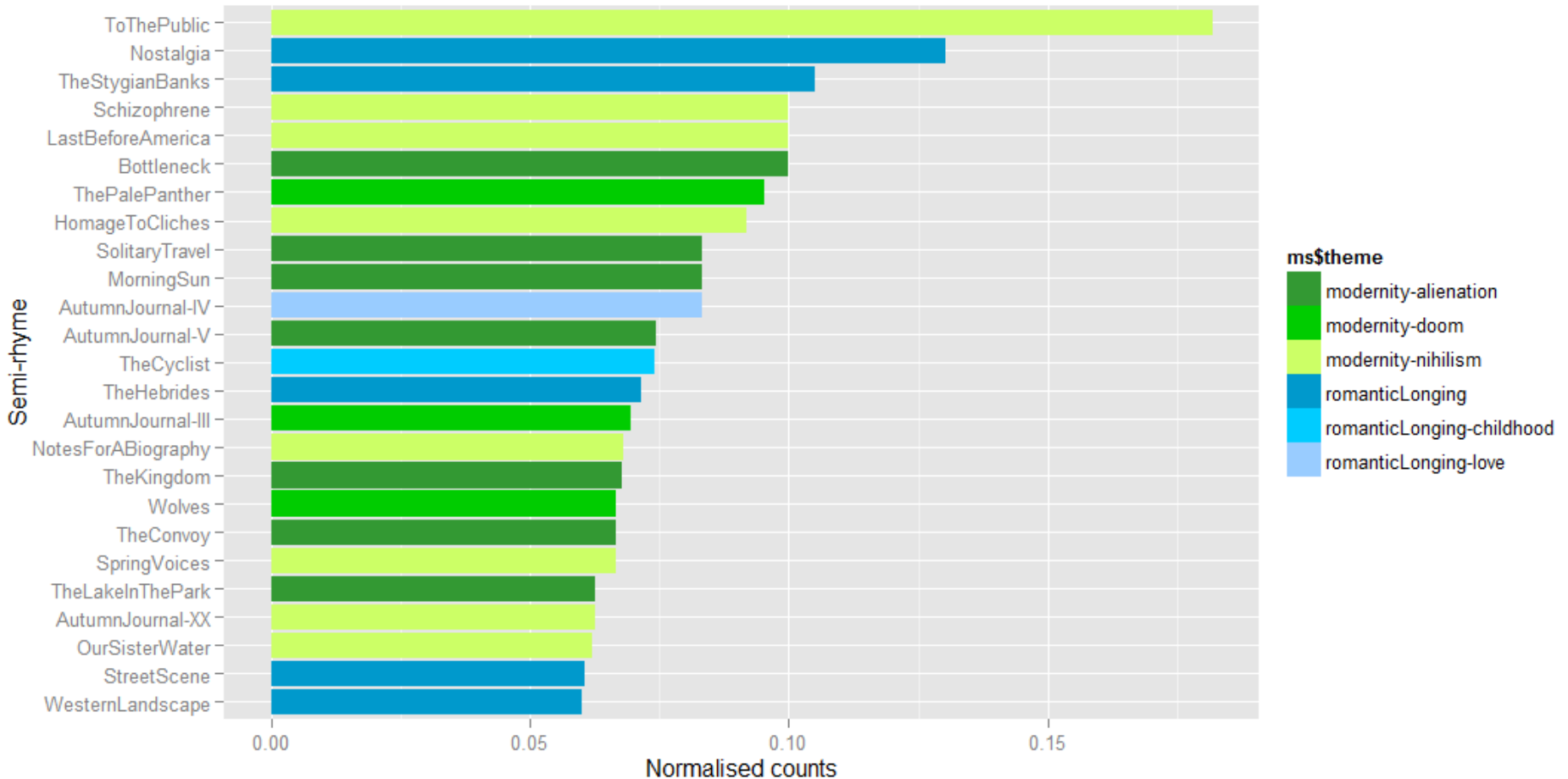
Deibhide rhyme

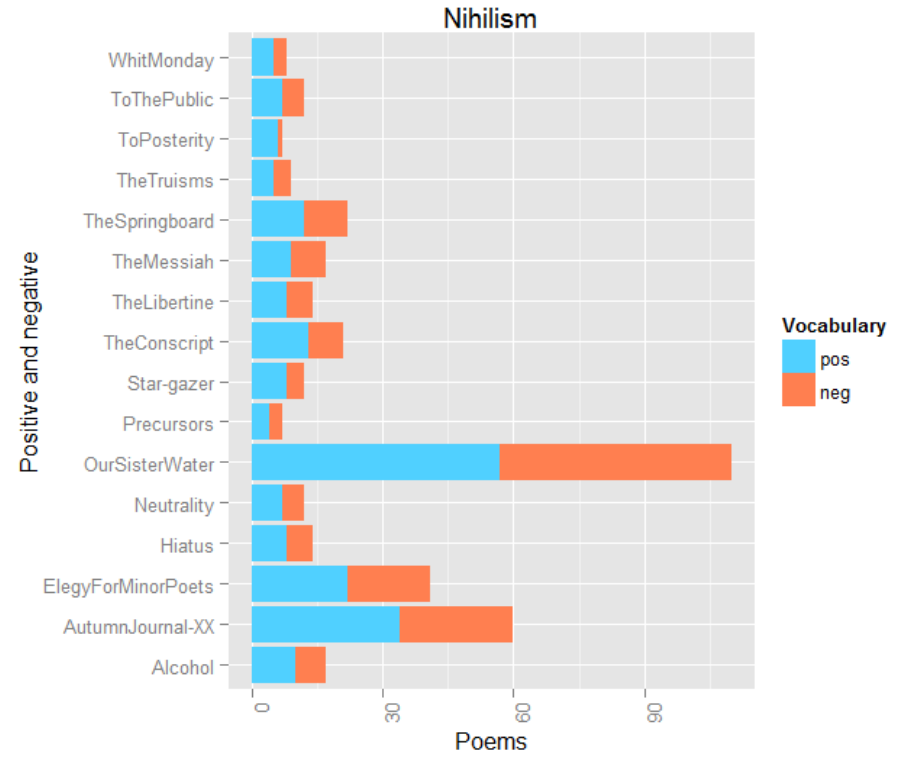
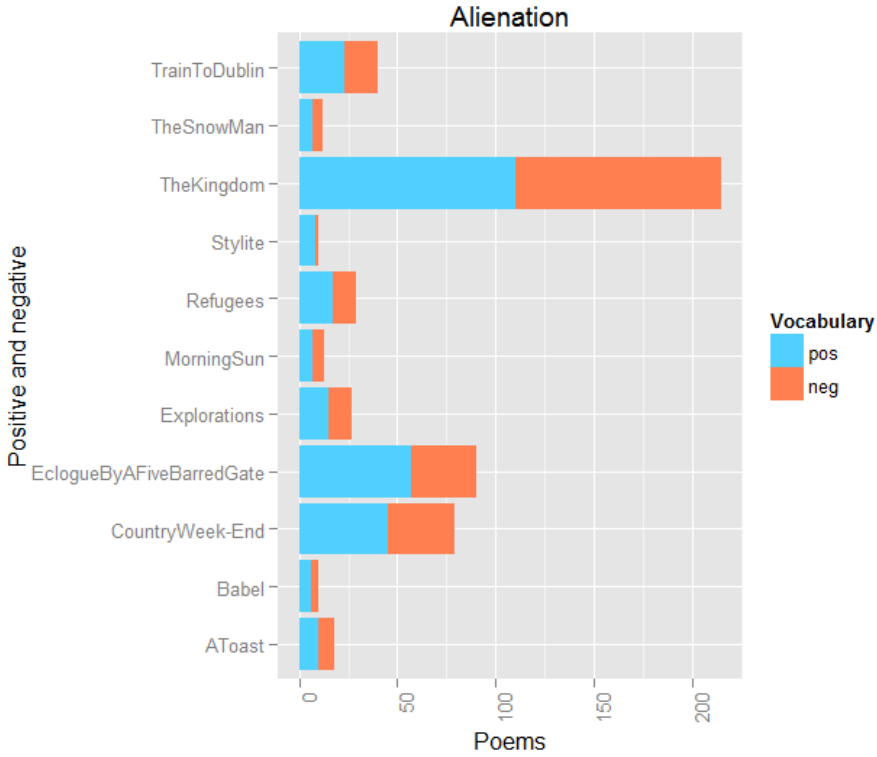


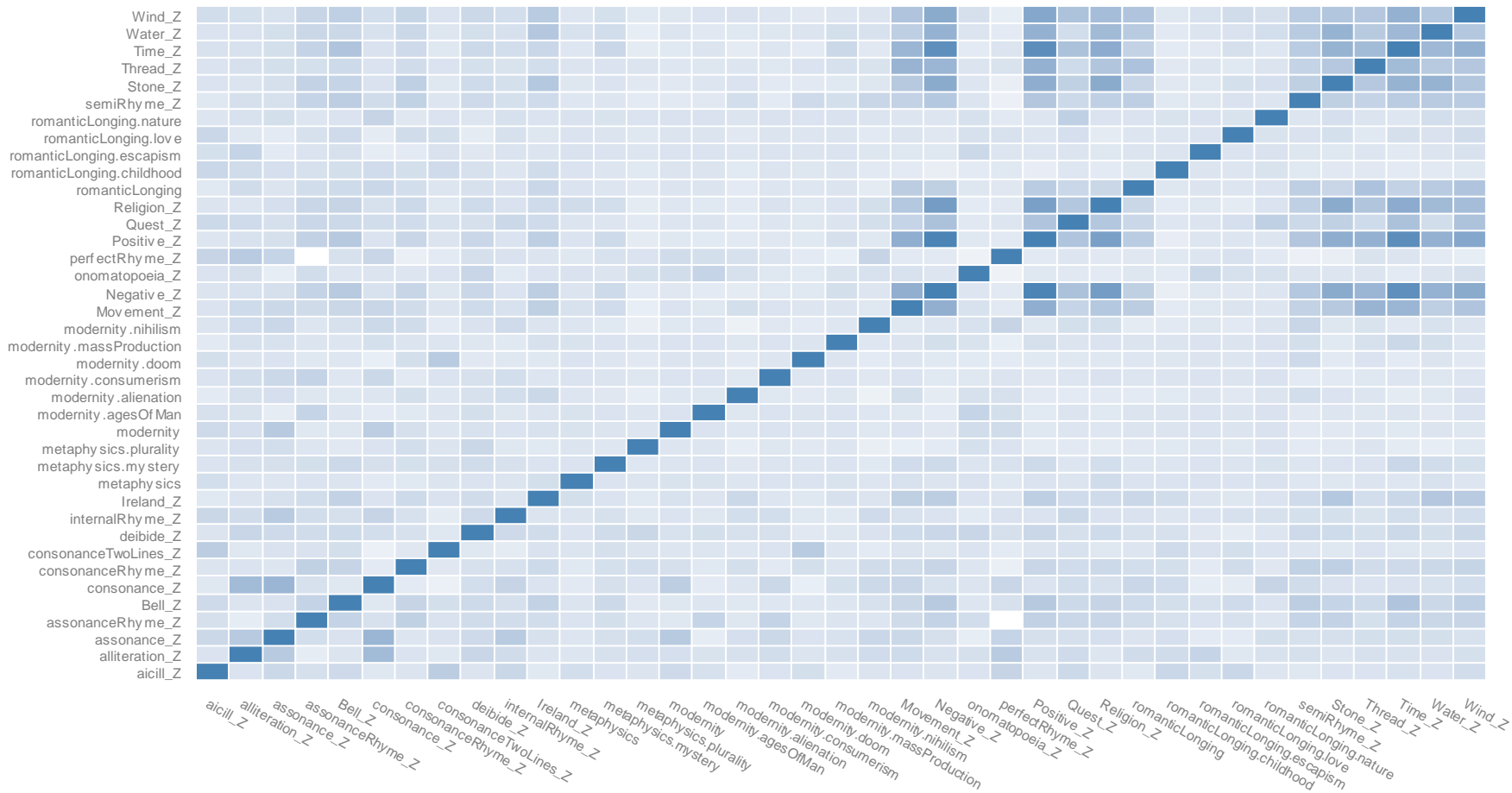
Aicill



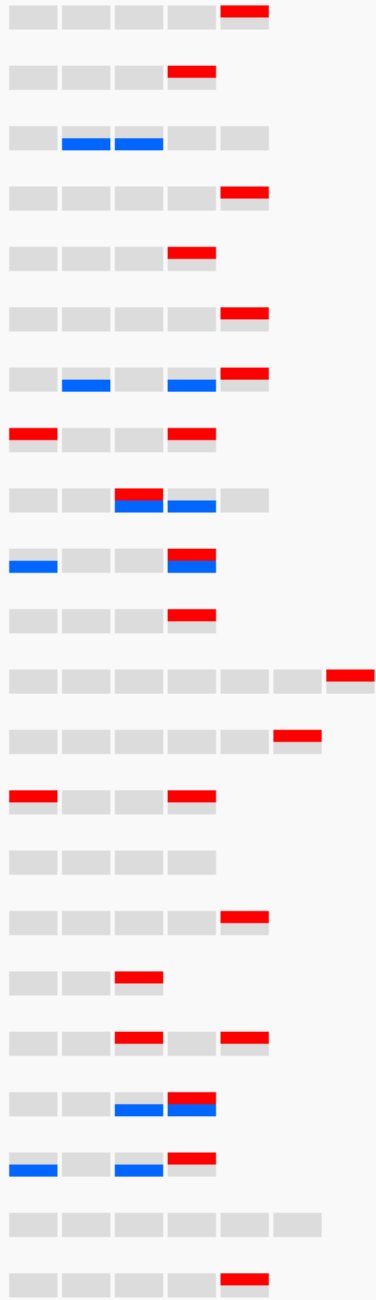
Semi-rhyme and themes



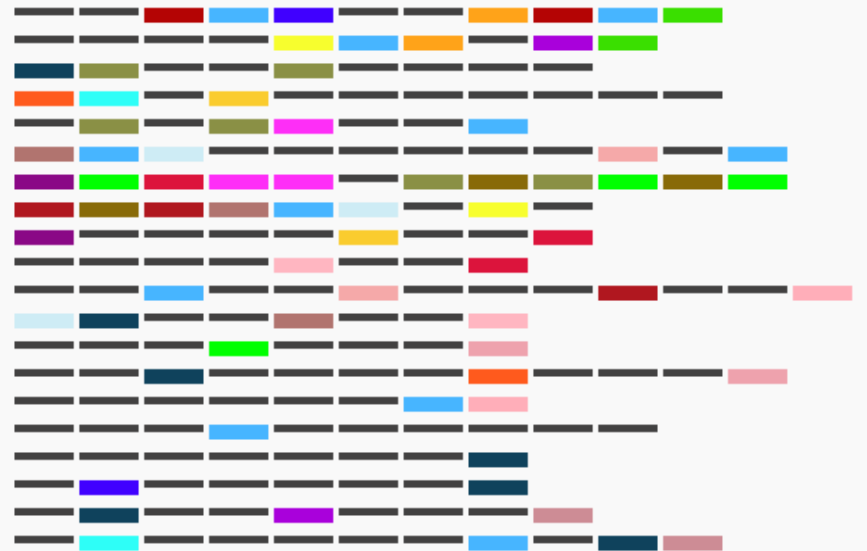




TheSunlightOnTheGarden



TheGlacier



Conclusions

- Text mining techniques can be used to identify literary devices, to some extent
- Analyses of data of about literary devices can provoke interpretation of the texts
- Representative and reproducible findings
- Human critic is necessary to explain and to interpret patterns