Shakespeare's language and the Encyclopaedia project

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The project aim

- To produce the first systematic and comprehensive (?) account of Shakespeare's language using methods derived from corpus linguistics – an approach that uses computers in large-scale language analysis.

What will be in the encyclopedia?

Volume 1 (a kind of dictionary)

Focuses on the use and meanings of each of Shakespeare's words, both in the context of what he wrote and in the context in which he wrote.

Every word is, for example, compared with a 321 million word corpus comprising the work of Shakespeare's contemporaries.

What will be in the encyclopedia?

Volume 2 (a compendium of semantic patterns)

Focuses on patterns of words in Shakespeare's writings. It describes how these patterns create the 'linguistic thumbprints' of characters, different genders, themes, plays and dramatic genres. It also considers clusters of words that relate to concepts (e.g. love, death).

Volume 3 (a kind of grammar)

Focuses on grammatical words and patterns.

Preliminary methodological issues

Shakespeare texts

Problem:

- Modern editions of Shakespeare are edited collations of the Folio and Quartos, mixed with a liberal dose of editorial license.
- Words are standardized to modern forms.
- Original morphology is (variously) stripped out.
- Even what counts as a word is variable, cf. compounds (e.g. *hour glass*).

Preliminary methodological issues

Solution:

- Have as our base the First Folio with original spelling.

- Specifically, the 'diplomatic' warts-and-all transcription produced by *Shakespeare Internet Editions* (http://internetshakespeare.uvic.ca/Foyer/plays/).

Preliminary methodological issues

Spelling variation:

Problem: You decide to study the use of the word *would* in a corpus. You type it into your search program … and look at the result.

But you miss: *wold*, *wolde*, *woolde*, *wuld*, *wulde*, *wud*, *wald*, *vvould*, *vvold*, etc., etc.

Solution: *Variant Detector* (VARD) program, primarily devised by generations of scholars at Lancaster, but most recently given a significant boost by Alistair Baron.

Preliminary methodological issues

Further problem: What do you regularize the spelling to? There is no standardised regular form in the way that there is today.

Solution: Our policy was to

- Preserve the morphology, e.g. 2nd + 3rd person verb inflections (–(e)st, -(e)th), past tense forms (e.g. *holp*), past participle forms (e.g. *holpen*), plural forms (e.g. *shooen*), non-standard superlatives (e.g. *horrider*), and *you/thou*,

- Only use a form that had EModE currency.

- Prioritize the most frequent spelling in Shakespeare

Preliminary methodological issues

But:

Very occasionally reader accessibility would have a bearing, e.g.

- Shakespeare *powr'st* = 2nd pers. of verb *to pour*
- Becomes *pourest* or *pour'st* in Arden
- But *pour'st* is not used in EModE (EBBO)
- We chose *pourest*.

A glance at the First Folio and spelling variation in English (Baron *et al*'s 2009)
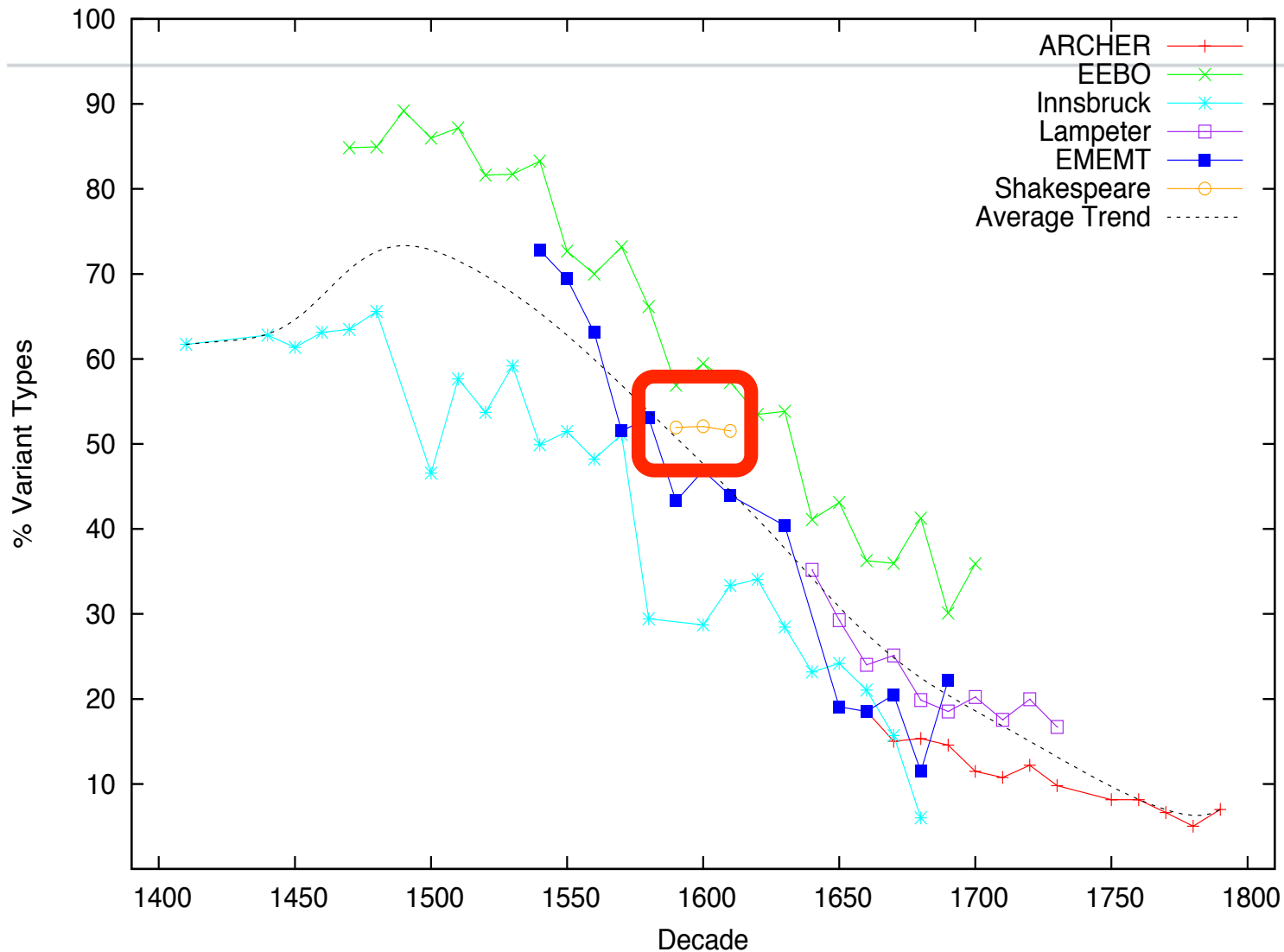
Preliminary methodological issues

The comparative corpus

Problem: Size matters

- Any pattern is a matter of frequency.
- Linguistics is centrally focussed on patterns in language.
- Historical linguistics work is often hampered by low frequencies, because the historical record is not complete.
- Corpus-based methods and concepts are centrally driven by frequencies and statistical operations.

Solution:

Various new corpora and electronic texts, but especially *Early English Books Online* (EEBO-TCP). About 1.2 billion words, 1520-1679.

Shakespeare and numbers: Neologisms and survivals

Myths about Shakespeare and the English language:

What can we 'learn' from the internet?

- Shakespeare coined more words than other writers, around 1700 words …

- or is that 3,000 …

- or did he invent half the words in the English language …

N.B. The issues are twofold: neologisms and survivals

Shakespeare and numbers: Neologisms and survivals

Work on neologisms (with Sheryl Banas):

- 1,502 words recorded in the Oxford English Dictionary as first citations in Shakespeare

- We are checking these in EEBO-TCP

Preliminary findings:

- If the current pattern continues, less than a quarter of those 1,502 words can reasonably be attributed to Shakespeare.

# Shakespeare and numbers: Neologisms and survivals

Issues

- How do we know that Shakespeare coined it as opposed to recorded it? Cf. *down staires* vs. *incarna[r]dine* (v.)

- Is it actually just a nonce word rather than neologism? Cf. *dropsied* vs. *domineering*

Do Shakespeare's coinages survive into today's English?

- Examples of phrases first recorded in Shakespeare and their more recent life.

Four phrases first recorded in Shakespeare and their use in printed material over the last 200 years (Google's N-Gram Viewer)

sea change

brave new world

band of brothers

salad days
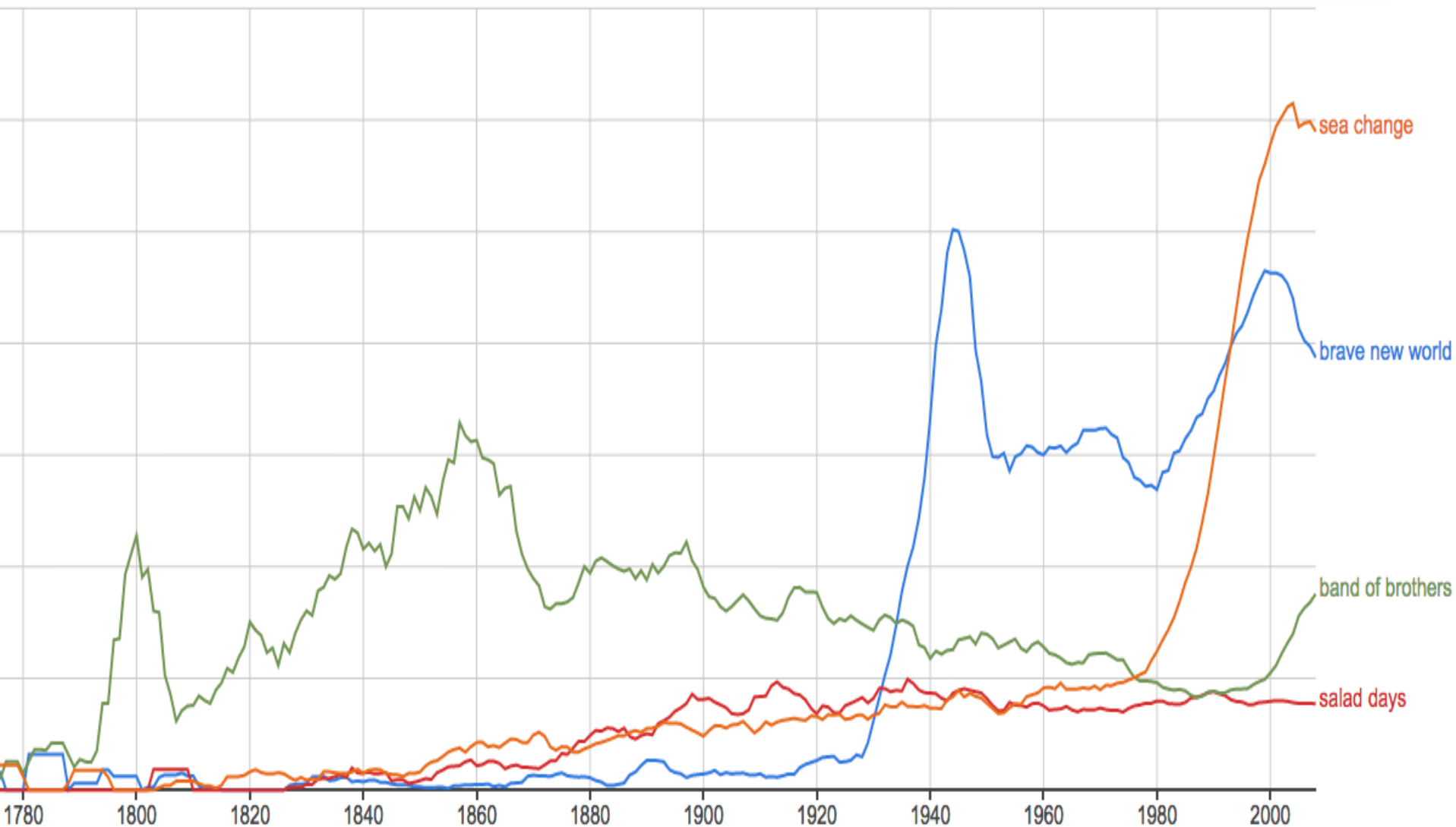
Shakespearean 'dictionaries' and present-day corpus-based dictionaries

Some typical differences in approach:

- Words for inclusion: 'hard' words vs. all words in the corpus
- Word-meanings: etymological meanings and etymological organization **vs**. meanings based on usage in context and organised according to frequency

Note:

No Shakespearean dictionary has treated Shakespeare's language as relative, i.e. put Shakespeare's usage in the context of that of his contemporaries.

Case study: 'horrid' today

Top-40 rank-ordered most frequently occurring nouns within 5 words to the right of 'horrid' in the BNC:

things, man, thing, creature, stuff, truth, people, feeling, word, beast, phrase, teeth, girls, flat, day, child, place, state, time, blighters, imprecations, defilement, deodorants, cruelties, malady, apparitions, weasels, double-glazing, panoply, sunflowers, bungling, separateness, puns, premonition, shrieks, jingle, hairstyle, imaginations, blasphemy

Case study: 'horrid' (contd.)

Philological approach:

Oxford English English Dictionary

horrid (ˈhɒrɪd), *a. (adv.)* Also 7 **horred**, **horride**.

[ad. L. *horrid-us* bristling, rough, shaggy; rude, savage, unpolished; terrible, frightful, f. *horrere*: see horre *v.* Cf. It. *orrido*.]

A. *adj.*

1. Bristling, shaggy, rough. (Chiefly *poetic*.)

1590 Spenser *F.Q.* i. vii. 31 His haughtie Helmet, horrid all with gold.

1621 Burton *Anat. Mel.* i. ii. iii. xiv. (1651) 125 A rugged attire, hirsute head, horrid beard.

Case study: 'horrid' (contd.)

2. Causing horror or aversion; revolting to sight, hearing, or contemplation; terrible, dreadful, frightful; abominable, detestable.

In earlier use nearly synonymous with *horrible*; in modern use somewhat less strong, and tending to pass into the weakened colloquial sense (3).

1601 Shakes. *Twel. N.* iii. iv. 220, I wil meditate the while vpon some horrid message for a Challenge.

[Shakespeare dictionaries concur with sense 2]

Case study: 'horrid' in Shakespeare

Appeare in <u>formes</u> more **horrid**) yet my Duty, As doth a Rocke
Vp Sword, and know thou a more **horrid** <u>hent</u> When he is drunke
And cleaue the generall eare with **horrid** <u>speech</u>: Make mad the guilty
heard and seene,   Recounts most **horrid** <u>sights</u> seene by the Watch.
shall breake his winde   With feare and **horrid** <u>flight</u>.   1.Sen. Noble,
To. I wil meditate the while vpon some **horrid** <u>message</u> for a Challenge.
armes.   Macd. Not in the Legions Of **horrid** <u>Hell</u>, can come a Diuell
<u>deformitie</u> seemes not in the Fiend So **horrid** as in woman.
all the sparkes of Nature To quit this **horrid** <u>acte</u>.   Reg. Out treacherous
Such sheets of Fire, such bursts of **horrid** <u>Thunder</u>, Such groanes of
Curriors of the Ayre, Shall blow the **horrid** <u>deed</u> in euery eye,
on is Of thy deere Husband. Then that **horrid** <u>Act</u> Of the diuorce,
to themselves   Beene deathes most **horrid** <u>Agents</u>, humaine grace
I yeeld to that suggestion,   Whose **horrid** <u>Image</u> doth vnfixe my Heire

Case study: 'horrid' in Shakespeare

The beginnings of a contextualised dictionary entry:

Headword: HORRID. Adj..

Sense: Something that is *horrid* causes fear; typically, it refers to supernatural or unnatural acts, sights and sounds. E.G. 'Whose horrid Image doth vnfixe my Heire' (Mac.)

Contexts: *Horrid* has a much closer association with Shakespeare's tragedies than either histories or comedies, and is used slightly more frequently by male characters than female. Shakespeare used it considerably more than his contemporary playwrights did. Generally, it is most characteristic of Early Modern plays and, perhaps surprisingly, scholarly literature.

Distribution: All = 16 (1.8); T = 10 (3.9), C = 2 (0.6), H = 4 (1.5); M = 14 (1.9), F = 2 (1.4).

Comparisons: Pla = 187 (0.17), Fic = 0, Tr = 0, Ha = 0, Sc = 1 (0.14).

- Frequency limitations

Case study (2): *I*

How was the 1st person singular pronoun written?

- Always *I*

- But the 1st person pronoun did not have a monopoly: it competed with the affirmative *ay(e)*, e.g.

Ros .   Did your brother tell you how I counterfeyted to sound, when he shew 'd me your handkercher?

Orl .   **I,** and greater wonders then that.   (AYL)

But it was dominant in the First Folio (1623):

20,293 instances of *I* (1st pers. pronoun) vs. 302 instances of *I* (= *aye*) [(\.|\:) I (\.|\,)]

A short digression on affirmatives

- *Yes, yea, ay(e)*

Findings:

- Regarding *yes/yea*, was the the OE pattern (*yea* positive response to positive question; *yes* positive response to negative question) still in place in EModE? **Yes**

- Was *yea* a dialectal item? **No**. (It dominates EFL handbooks)

- Was *ay* a dialectal item? **No**, though is was perhaps colloquial.

- Do the meanings of *yes, yea, ay(e)* differ? **Yes**, *yea* and particularly *ay* are quite often used when the speaker qualifies what has just been said (e.g. "ay but …")

Case study (2): *I*

Shakespearean dictionaries:

- Words such as this typically omitted from Shakespearean dictionaries (e.g. Crystal and Crystal 2002; Onions 1986), presumably on the assumption that they:

    (a) have obvious meanings (because they are considered more or less the same as those of today), and

    (b) do not contribute much to understanding Shakespeare.

Case study (2): *I*

Top 25 collocates one to the right (Log-ratio):

am, thanke, prethee, warrant, protest, pray, humbly, prythee, beseech, hope, dare, saw, thinke, know, knew, could, owe, perceive, will, wil, meane, have, would, can, have, feele, told, doubt, have

"I am": A case of I-dentity:

Were I the Moor I would not be Iago
In following him I follow but myself…
        … I am not what I am. (*Othello* 1.1.57

Case study (2): *I*

Expressing personal states: am

Expressing thoughts and feelings: hope, dare, saw, thinke, know, knew, perceive, feele, doubt

Doing relational work: thanke, prethee, pray, humbly, prythee, beseech, owe, protest

Securing meaning: warrant, meane,

Narrative (speech presentation): told

Other: can, could, will/wil, would, have, had, would

A glance at Vol.2: Character

Desdemona:

TOTAL	**2753**
I	132
my	79
and	61
you	60
to	57
not	48
me	47
do	44
the	41
him	41
lord	39
that	38

I and Desdemona

Desdemona's keywords

	Raw freq.	Log-L.	LogRatio
prithee	8	16.47	3.24
lord	39	64.82	2.74
lost	7	10.4	2.53
alas	8	8.7	2.04
him	41	24.75	1.41
do	44	19.64	1.18
my	79	28.03	1.03
me	47	11.61	0.84
i	132	26.85	0.76

For Othello: *I* is ranked 109, *me* 70 and *my* 74

Multi-word units

Shakespeare	EModE Plays	Present-day Plays
I pray you	it is a	I don't know
I will not	what do you	what do you
I know not	and I will	I don't want
I am a	it is not	do you think
I am not	I have a	do you want
my good lord	I will not	I don't think
there is no	in the world	to do with
I would not	I tell you	do you know
it is a	I know not	going to be
and I will	I warrant you	don't want to

Three-word lexical bundles in order of frequency (coloured items appear in another column)

Data in 2nd and 3rd columns draw from Culpeper and Kytö (2010)

The adjacency pair in present-day drama

Frank   <u>What I want to know</u> is what is it that's suddenly led you to this?

Rita   What? Comin' here?

Frank   Yes.

Rita   It's not sudden.

Frank   Ah.

Rita   I've been realizin' for ages that I was, y' know, slightly out of step. I'm twenty-six. I should have had a baby by now; everyone expects it. I'm sure me husband thinks I'm sterile. [...]

Willy Russell, Educating Rita, 1981, p.8

Theatrical context: EModE stage and staging


Purpose-built outdoor theatres:
The Theatre (1576),
The Curtain (1577),
The Rose (1587),
The Swan (1595),
The Globe (1599), and
The Fortune (1600).

The language of emotion in Shakespeare's plays

+ Alison Findlay, Beth Cortese and Mike Thelwall

- "Sentiment analysis" and commercial goals
- What is it analysing? Emotion words, whether they are positive or negative (valence), and their strength.
- *SentiStrength* (Thelwall; http://sentistrength.wlv.ac.uk/)
- Lexicon adjusted for EModE and Shakespeare in particular.
- Checked against a human rater.

Overall negative sentiment across Shakespeare's plays (average negative sentiment subtract average positive sentiment)

Average negative sentiment subtract average positive sentiment
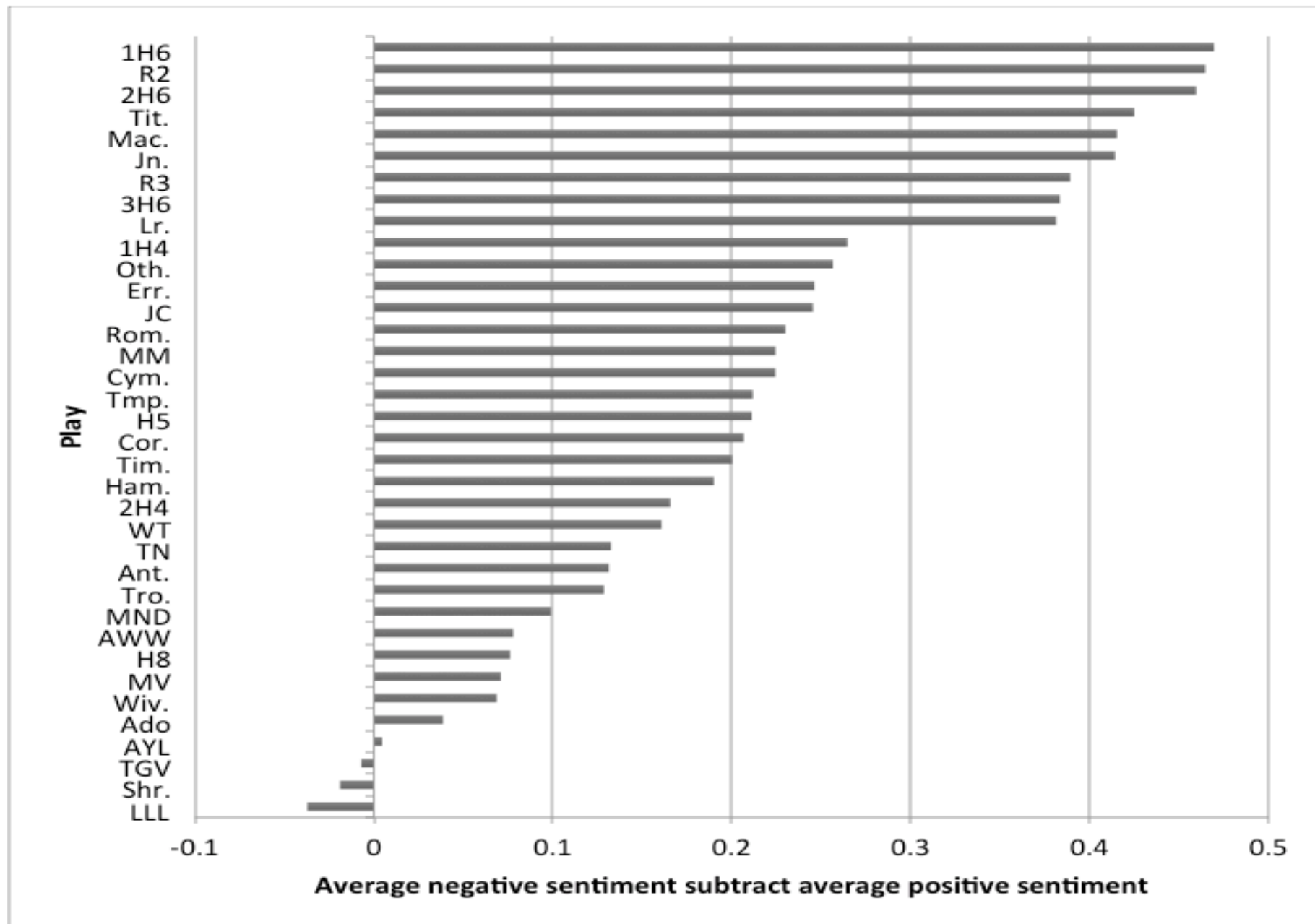
Concluding thoughts

A corpus approach to Shakespeare's language means:

- All 'words' treated equally (e.g. not just 'hard' words).

- Meanings based on usage in context (e.g. not etymology, not narrowly-defined semantic meaning).

- The context includes linguistic aspects (e.g. collocations) and non-linguistic aspects (e.g. registers, social properties of the speaker/character).

A corpus/computational approach to literary texts means:

- Makes a kind of "distant reading" possible through the identification of linguistic patterns.

Concluding thoughts (contd.)

Problems and limitations

- The methodology is not (entirely) suitable for items below a certain frequency.

- Grammatical and semantic annotation need further development (manual correction), if they are to be deployed.

- It is never automatic – the human is needed to (1) devise/train the software, (2) select the data and prepare it; and (3) interpret the results.