

Institution: University of Strathclyde
Unit of Assessment: 29
Title of case study: Digital linguistic analysis as a rehearsal tool at Shakespeare's Globe Theatre.
<p>1. Summary of the impact (indicative maximum 100 words)</p> <p>As a result of his research using new techniques in the digital analysis and visualisation of Shakespeare's language Professor Jonathan Hope was invited to work with the company of Shakespeare's Globe Theatre on a production of <i>A Midsummer Night's Dream</i>. Hope's findings highlighted unusual interaction patterns between characters, a focus on objects (props), and very frequent references to space and movement in the language of the play. Actors used Hope's research findings to inform rehearsal and performance of the play which was performed to 14,509 teachers and pupils from more than 100 London schools over a two-week period in February and March 2012. Hope's engagement with the Globe Theatre has generated impact through its effect on the actors and their performances, through the pupils' engagement with the play, and in its contribution to the Globe Theatre's status as a national leading arts educational organisation. The impact has been extended to the 2013 schools production of <i>Romeo and Juliet</i>, playing to 16,325 school teachers and pupils from 128 schools.</p>
<p>2. Underpinning research (indicative maximum 500 words)</p> <p>Context:</p> <p>Hope and Witmore's work on the digital analysis of Shakespeare's language represents a crucial new development in both Shakespeare studies and Digital Humanities [1, 2, 3, 4]. They use specialist computer software to analyse the language of Shakespeare's plays. This software can recognise and visually display linguistic features and patterns that would not be obvious to a human reader. Hope and Witmore have discovered by using this that the genres used to organise the plays by the compilers of Shakespeare's First Folio (comedy, history, tragedy) can be reliably identified using the frequencies of linguistic features at the level of sentences alone [1, 3]. This discovery therefore establishes a relationship between high-level, culturally-assigned attributes of texts (genres) and low-level objectively countable features (linguistic items such as pronouns).</p> <p>Key Findings:</p> <p>Having established the linguistic 'reality' of the three contemporary genres, Hope and Witmore's work has sought to explain the clear link between genre and minute linguistic detail. Why does comedy favour first person singular and negation? Why do histories favour first person plural and nouns? The answer they proposed is that genre implies certain types of relationships and interactions: comedies involve individuals asserting their view and being contradicted [3,4]. At their core, lovers attempt to become 'we', but are prevented by the plot until the very end, so 'I' predominates. Histories present clashes between groups: clans, countries, cities, not individuals. So 'we' is frequent, as are references to the concrete, external world (nouns) [3, 4].</p> <p>Of particular relevance to this case study, analysis revealed <i>A Midsummer Night's Dream</i> to be linguistically anomalous in comparison with Shakespeare's other plays. For example, it contains a very high frequency of nouns: the highest in Shakespeare's works. Paradoxically, a play apparently about the ethereal contains more references to real, concrete things than any of Shakespeare's other plays. Also identified as more frequent than expected was language associated with location and the description of space: from the preposition 'through', which is much more frequent in the play than in the rest of Shakespeare's work, to more complex spatial terms and phrases. This finding points to the possibility that the play places more than usual emphasis on movement. The next set of findings concerns items which are absent or reduced in frequency in <i>A Midsummer Night's Dream</i> compared with their norm in Shakespeare's other plays. (This is one of the key strengths of digital analysis: it can identify features that are missing or much less frequent than usual, something that human reading is generally not good at.) The analysis of the play showed a general decrease in language associated with face-to-face interaction (i.e. address terms, questions), thus pointing, perhaps, to the isolation of characters from each other for much of the play. Such links between linguistic detail and the interactions dramatized on stage were to prove crucial in communicating with actors in rehearsal.</p>

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Key researchers:

Jonathan Hope: research carried out 2003 to present. Reader in Literary Linguistics 2003-2012; then Professor of Literary Linguistics 2012–present, School of Humanities, University of Strathclyde.

Michael Witmore: research carried out 2003 to present. 2003-8, Associate Professor of English, Carnegie Mellon University, Pittsburgh (with tenure from 2006); 2008-10, Professor of English, University of Wisconsin, Madison; 2010-present, Director, Folger Shakespeare Library, Washington DC.

3. References to the research (indicative maximum of six references)**Outputs 3 and 4 are included in the REF2 submission for UoA29.**

1. Hope, Jonathan and Witmore, Michael (2004). 'The very large textual object: a prosthetic reading of Shakespeare', *Early Modern Literary Studies* 9.3 / Special Issue 12:6, 1-36.

Notes on quality: *EMLS* is a, peer-reviewed on-line journal.

2. Witmore, Michael and Hope, Jonathan (2007). 'Shakespeare by the Numbers: on the Linguistic Texture of the Late Plays' in *Early Modern Tragicomedy*, Subha Mukherji and Raphael Lyne eds. (D.S. Brewer), 133-153.

Notes on quality: Chapter in edited book based on a conference held at Cambridge University.

3. Hope, Jonathan and Witmore, Michael (2010). 'The Hundredth Psalm to the Tune of "Green Sleeves": Digital Approaches to the Language of Genre', *Shakespeare Quarterly*, 61:3, 357-390.

Notes on quality: *Shakespeare Quarterly* is an A-listed journal and the leading international journal in the field of Shakespeare studies.

4. Hope, Jonathan (2010) *Shakespeare and Language: Reason, Eloquence and Artifice in the Renaissance* (Methuen: The Arden Shakespeare)

Notes on quality: Published in the same series as the internationally recognised editions of Shakespeare's plays.

Other evidence for quality of research (grants, patents etc.).

The work with Witmore has attracted the following funding:

- 2013-16 Mellon Foundation (award shared with Wisconsin-Madison University and Folger Shakespeare Library): 'Visualising English Print, c. 1450-1800 (stage 2)'. Total value of award: \$900,000.
- 2011-12 Mellon Foundation (award shared with Wisconsin-Madison University): 'Visualising English Print, c. 1450-1800'. Total value of award: \$373,087.
- 2011-12 Royal Society of Edinburgh Arts and Humanities Small Grant: 'The Digital Renaissance: mapping the language of drama'. Total value of award: £4,400.
- Hope directed a three-week Summer Institute at the Folger Shakespeare Library titled 'NEH Early Modern Digital Agendas' in July 2013, funded by the National Endowment for the Humanities. Total value of award: \$159,056.
- Hope is Linguistics Advisor to the Arden Early Modern Drama series (2005-).

4. Details of the impact (indicative maximum 750 words)**Process from research to impact:**

In November 2011, Hope was invited to give a paper at a conference held at Shakespeare's Globe Theatre, London, organised by Globe Research. The presentation used digital techniques to explore the language of sensation and taste in Shakespeare's period. Following it, Hope was introduced to the producer of the Globe's free schools production of *A Midsummer Night's Dream* which was about to go into rehearsal. The producer suggested that the techniques Hope was developing, and the findings emerging from his work with Witmore, would be of use to the actors during the process of rehearsing the play (Source 1). Funded by the Theatre, Hope subsequently visited the Globe in January 2012 to speak to the company about the language of *A Midsummer Night's Dream*. Hope employed the visualisation tools he and Witmore had developed, as well as

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other software packages, to identify particular features of the play's language which a human reading would not be able to spot.

Description of Impact:

The direct impact of Hope's work can be traced in two key ways. It has moved outside of academia to have had an effect on (a) those involved in a production of *A Midsummer Night's Dream* at the Globe Theatre, London; and (b) the Globe Theatre's general practice as a leading arts educator in London and overseas. The work has also had indirect impact on the audiences of the Globe Theatre production, which was performed for free to over 14,000 teachers and students (Sources 4 and 6) from more than 120 schools from across all London boroughs (Source 7) between 27 February and 8 March 2012, with the play part of the National Curriculum requirement for English Literature. Globe Theatre records show that 79% of the students watching the play had never seen Shakespeare performed before, that 57% had never previously seen a play at any theatre, and that 92% said they'd like to see more Shakespeare having seen this production. 92% agreed that, after seeing the play, they were 'better prepared for classroom study' (Source 8).

Impact on the Globe Theatre Production of *A Midsummer Night's Dream*:

The company of *A Midsummer Night's Dream* (11 actors, the director, and the stage managers) attended a talk given by Hope in January 2012. Cast members were interested in Hope's finding that *A Midsummer Night's Dream* is concerned with concrete objects and their descriptions. It prompted a consideration of the role of props in their production. An actor from this production stated that, '*although there is no real choice about how many props are used [in the play], or how they are used, the power or status afforded to the objects we used was heightened*' after hearing Hope's talk (Source 2). Hope's finding that the high frequency of language associated with location and the description of space prompted the cast to discuss the characters' frequent lack of certainty about their location in the dream-like space of the play. The same actor in a recorded interview notes that '*knowing there was an increased dynamism suggested in the text freed our choices of movement. We were perhaps braver and bolder*' (Source 5). Hope's finding that *A Midsummer Night's Dream* showed a general decrease in language associated with face-to-face interaction made the actors consider the possibility that relationships in *A Midsummer Night's Dream* are not like those of other comedies (which are characterised by high levels of verbal interactivity), and to therefore perform them as 'straight' roles. For the producer of the production, Hope's ideas formed part of what he called the 'tool-kit' available for all who were involved in the rehearsals: it '*helped us in how we go about supporting and informing the play and play making*' (Source 5). It enabled the actors to feel they were engaged in a very innovative production: with Hope's ideas, '*language feels more newly minted, more alive in the space*' (Source 5).

Impact on the Globe Theatre:

The Globe's international status comes only in part from its world-leading commercial productions of plays by Shakespeare, his contemporaries, and new writers. It is also one of the most important providers of arts education in the UK, offering workshops for school and university students, and other groups (in 2012 over 100,000 people attended these workshops), as well as a free annual schools production (Source 6). It is thus a means by which many encounter the theatre for the first time, and it responds to requirements of the National Curriculum to aid in and enhance students' understanding of and pleasure in literary texts. Success in this aspect of their work is of undoubted national cultural value. It is also of financial value to the theatre as well: in 2012 core income was gained from its educational work, and 8% of its income (over £1 million) came from sources that include its sponsors (Source 6). While Hope's work with the company of *A Midsummer Night's Dream* cannot be linked directly to specific income, it is clear that the reputation of the work done by Globe Education is vital to The Globe Theatre's continuing success as a commercial theatre and in gaining financial support from sponsors.

Hope's on-going relationship with the company of *A Midsummer Night's Dream* thus forms part of the foundation that underpins the work of the organisation more generally. In January 2013, he was invited to work with the cast and crew of this year's Deutsche Bank free schools production, *Romeo and Juliet*. Once again, he used digital tools to explore the language of the play, and open up possible rehearsal and performance practices. In this play, for example, analysis showed an

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increased use of the word 'love' – though in multiple, sometimes contradictory meanings; an avoidance of plural pronoun forms (very unusual in a tragedy); an increase in exclamatory language, suggesting emotional intensity; and, more than in any other play by Shakespeare, a focus on time and its passing, which links to a steady increase in references to 'death', as the play shifts from comic romance to gathering tragedy.

As the Head of Courses and Research at the Globe Theatre, has written: '*Hope's research ... has been an extraordinary resource for actors and directors at Shakespeare's Globe*', '*There is no question about the value of Professor Hope's research to actors, directors and to audiences here at Shakespeare's Globe*' (Source 3). As this ongoing relationship develops, actors attest to the ways they have changed their working practices: '*since my first encounter with Professor Hope's work my own personal text work has changed to take in more technical analyses of a play's language... Looking at language in As You Like It, for example, I was drawn to creating a word cloud (using a simple online tool as a vastly simpler model to Professor Hope's research)... This led me to a new, and welcome, view of the character*' (Source 2).

5. Sources to corroborate the impact (indicative maximum of 10 references)

1. The Producer of *Midsummer Night's Dream* (Shakespeare's Globe, 2012) can be contacted to confirm Hope's role in the production
2. Statement from actor *A Midsummer Night's Dream*
3. Statement from Head of Courses and Research at Shakespeare's Globe
4. The Head of the Education Unit for Shakespeare's Globe – can be contacted to confirm the play was performed for free to over 14,000 teachers and students
5. Audio recording of interview with Head of Courses and an actor
6. Document - Globe Annual Review and Accounts document
7. List of schools attending the production of *A Midsummer Night's Dream* from Globe Education <http://2012.playingshakespeare.org/schools>
8. Document - Results of online survey conducted by Globe Theatre.
9. Screenshot of *A Midsummer Night's Dream* homepage <http://2012.playingshakespeare.org/>