

**Shakespeare and Social Neuroscience**  
**Seminar Leaders: Paul Budra and Kirsten Uszkalo**

**ABSTRACTS**

Michael J. Berntsen

Cognitive Theories of Race, Commerce, and Social Performance in Shakespeare's *Merchant of Venice*

Shylock is the ultimate problem child of Shakespeare's brain. In a post-Holocaust world, most audience members are uncomfortable with Shakespeare's physical representations of Jewish stereotypes on the stage as well as the anti-Semitic sentiments possibly suggested on the page. As the play's villain, Shylock is the essence of anti-social behaviors and attitudes, providing serious dramatic tension for a comedy centered upon the infant society of global capitalism. However, his Jewish identity usurps all other elements of his characterization. His otherness overshadows and accentuates the conventional antagonistic traits Shakespeare designs within him. Shylock's avarice is not mere selfishness or ambition for a higher social rank because the Venetian Christians see it as a great defect of his race. Social neuroscience, as an emerging critical lens, can help to reconcile the play's crux by analyzing in quantitative modes the way in which this religious outsider navigates within a Christian world, threatens it with his prosperity, and contrasts his usury logic with the archaic notions of a feudal system. By tracing how actors and directors have portrayed Shylock during the court of justice scene (Act 4, Scene 1), I will investigate how these images produce and interact with cognitive processes and reactions related to speech, egocentrism, social negotiation, gambling, and ethnic or religious pride. I will examine several historical and modern productions, focusing particular attention upon the actors, Edmund Kean, Edwin Booth, and Jacob Adler, in order to dissect the numerous physical cues that cause audience members to sympathize or sneer at Shakespeare's Jewish villain. Through the applications of social and affective neuroscientific discoveries and theories, Shakespeare scholars can explore more profoundly the actual mental operations involved with the presentation and interpretation of Shylock's complex and problematic nature.

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Christopher Cobb

Playing to Divide an Audience? Shakespearean Questions, Neuroscience Hypotheses

This essay surveys the basic implications of social neuroscience research for performance criticism and examines its application to the complex problem of interpreting the significance of divided audience response. It argues that social neuroscience has major implications for performance criticism, primarily because its insight into the foundational role of imitative empathy in human interpretation of emotions challenges the notion that different audience members will perceive action on stage in widely varying ways. The essay goes on to observe, however, that the application of social neuroscience to the interpretation of divided audience response remains at present quite limited. Social neuroscience research as yet offers little insight into the sensory and neural functions underlying the interpretation of emotion based on non-visual information, and this is the kind of knowledge that would be needed, the essay suggests, in order to apply social neuroscience to the assessment of the impact upon a spectator of hearing other spectators react in a fashion diametrically opposite to this spectator's own reaction, a circumstance that certain moments in Shakespeare's late plays seem designed to create. Cognitive psychology broadly defined may, however, have some promising insights.

Emma Firestone

The Instruments that Feel: forms of response to *The Winter's Tale* in performance

Continually throughout *The Winter's Tale*, speakers propose interpretations of the ethical qualities inhering in persons, images, and episodes in the play: that Hermione's character is spotless, for instance; that Leontes's restoration to happiness is Just; and that the climactic reunion between repentant King and long-dead Queen is a surpassingly joyous event. Such ethical proposals are also affective prescriptions, informing spectators of how they 'should' feel at particular moments. As critical and theatrical histories of the play demonstrate, these proposals almost inevitably *do* earn spectators' assent in performance; audiences do not question Hermione's chastity, willingly forgive Leontes' misjudgments and misdeeds, and so on. Yet in *The Winter's Tale* as in its sister-play *Cymbeline*, such assent is granted in spite of consistent logical, discursive, and dramaturgical pressures against it. (i.e. the abundant metatheatrical devices and language in the final 'statue' scene, however strongly they implicate the scene's status as improbable fiction, do not ultimately detract from its affective power.) This paper, which focuses on *The Winter's Tale* but gestures towards properties most conspicuous in Shakespeare's Late plays, investigates how the work of actors and the conditions of performance consort to engender improbable or irrational convictions in spectators.

This work proceeds from my Ph.D research into the complexities of Shakespearean characterization and the insights these might provide into the cognitive processes underlying theatrical response. I consider the pre-rational mechanism of embodied simulation, enabled by the mirror neuron system and implicated in acts of interpersonal understanding, in relation to the spectators' reception of Leontes' 'affection'. Engaging Antonio Damasio's valuable distinction between 'emotion' (empirically observable bodily states) and 'feeling' (subjective interpretations of these states), I argue that Shakespeare secures our sympathetic assent to Leontes' restoration—to a happiness that comes despite wrongdoing or indeed, because of it—by formulating our governing impression of the King in a scene (1.2) that compels us to acknowledge the latent, potential wonder within his jealousy. The intelligibility of *The Winter's Tale's* narrative trajectory, I suggest, depends in part on the structural congruity of love and jealousy at the affective level. I also reassess the value of *The Winter's Tale's* ubiquitous metatheatricality, describing it as a productive feature in the play's overarching movement towards a unification of stage and playhouse realities.

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Lianne Habinek

Altered States: *Hamlet* and early modern neuroforensics

My paper will consider the metaphor of the lesion as it reveals the fraught connection between thought and action, and soul and body in *Hamlet*. Galen, working with wounded gladiators, was the first physician to study the effects of trauma to the brain and nervous system, and to connect functions of the soul with sections of the brain. In this basic association are the roots of modern cognitive experimentation, namely the idea that the brain must be studied by looking at cases of things that have gone wrong with it. In modern parlance this sort of work is known as the lesion study, and the most famous recent example of such a study is that done with Henry Molaison (formerly Patient H.M.). I shall argue that a model for *Hamlet* comes from early modern neuroforensics, where the object is, through method, observation, and experimentation, to reconstruct the proper link between thought and action by studying the symptoms arising from damage to that link. Hamlet, assuming the role of empirical investigator, must discover what has done the damage.

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Nicholas Ryan Helms

How to be Jocund: Simulating Emotion in *Twelfth Night*

ORSINO: I'll sacrifice the lamb that I do love  
 To spite a raven's heart within a dove.  
 VIOLA: And I, most jocund, apt, and willingly,  
 To do you rest a thousand deaths would die.

(*Twelfth Night* 5.1.127-30)

I am interested in the interaction between the Simulation Theory of Mind-Reading and the performance of emotion, particularly in regard to ambiguous moments in *Twelfth Night*. If, as neuroscientist Antonio Damasio argues in *Descartes' Error*, emotion guides human reason—the somatic-marker hypothesis—then the emotions we see performed upon the stage are not mere *additions* to a play: the embodied performance of such emotions becomes a vital component to our understanding of character. Using the work of Antonio Damasio and Alvin Goldman, I hope to analyze how the performance of emotion affects the construction of fictional consciousnesses.

I am also interested in bringing these issues to bear on ambiguous and problematic moments in *Twelfth Night* where the embodiment of emotion onstage can alter the meaning of the play: specifically 5.1.127-30, where Orsino threatens to kill Viola and Viola accedes. In performance, which emotions are Orsino and Viola embodying? What do those emotions do to the fifth act, and to the play as a whole? Either Orsino is fuming (impotently), threatens something farcical and Viola makes an orgasmic joke, or *Duke* Orsino is deadly, authoritatively serious and while Viola's pun is there, the sacrificial note of her line is loudest. Simply put: does Viola smirk playfully or sigh painfully when she delivers her line? Is she actually *jocund*, or is this word delivered with irony?

The implicit or explicit darkness of the fifth act hinges on such moments: Orsino's threat, Malvolio's condemnation, Feste's final song. I want to point to the way certain potential stagings of such moments can alter our simulations of these characters. These concerns also overlap with affective (in)coherence: such emotionally ambiguous moments have the potential to be either affectively coherent or incoherent with what we expect based upon our simulations.

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Patrick Colm Hogan  
*Othello: Jealousy, Humiliation and Shame*

In “Fictions and Feelings: On the Place of Literature in the Study of Emotion” (*Emotion Review* in press), I argue that literature is an important potential source for the generation of hypotheses in affective science and for evidence regarding such hypotheses. This essay on *Othello* is excerpted from a work in progress, where I am pursuing that idea in a series of studies treating particular emotions. (Following Paul’s suggestion that “we are not writing for publication, but for discussion,” I try to draw out the passages that are most likely to provoke discussion.) In this excerpt, I argue that jealousy is better understood as an attachment-system response than as a sexual-system response, though the former is intensified by the latter. I develop accounts of shame as based on a sense of disgust with oneself and of humiliation as triggered by a public disclosure of shame. I consider the consequences of humiliation for rage. Finally, I address the ways in which disgust may be elicited—whether it appears in shame or in hate—and the difference between disgust related to an act versus disgust related to a more enduring property. I develop these ideas by examining *Othello* in relation to empirical research on these emotions. In the course of this examination, I hope to increase our understanding of the emotions at issue. No less importantly, I hope to give added depth and nuance to our understanding of the play as a treatment of antagonistic social identity categorizations—here, racial categorizations—and the complex interrelation of such categorizations with anger, disgust, attachment security, despair, and empathy.

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Ros King

Sound and Gesture in Shakespearean drama

Recent research in brain function suggests that sound and gesture are essential elements in cognitive development, and form fundamental building blocks for language itself, both in the evolution of the species and in the development of the individual. Different sensory experiences seem to be mutually reinforcing: 'Perception is intermodal from the very start, and one sense modality can educate another' (Gallagher, 170). Perception also seems to be dependent on non-conscious adjustments in the body at a muscular-visceral-endocrine level—that is on bodily feelings or emotions: 'to perceive an object, visually or otherwise, the organism requires both specialized sensory signals *and* signals from the adjustment of the body' (Damasio, 147).

Although there has been significant recent work on both gesture and the science and psychology of sound in music performance ( e.g. Lidov; Gritten and King), and projects concerning cognition and embodied memory in choreography ([www.choreocog.net](http://www.choreocog.net); Grove *et al*), little has been done either on the cognitive properties of metre and rhythm, or of sound and gesture in the performance of plays such as Shakespeare's. Work in the field of English literature has tended to approach the topic only in connection to sixteenth-century understanding of physiology (Bevington; Pastor). While clearly demonstrating the presence of historical scientific theory in characters' descriptions of their feelings, this work has largely ignored the ways in which a play's aural and visual dramaturgical patterns might lead *audiences* (whether modern or early modern) through a cognitive process.

This paper is about the embodiment of emotion in text, performance, and audience reception.

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Susan Knutson

Shakespeare and Trauma Recovery: Asking Questions of Social Neuroscience

Victimized children in Toronto schools perform Shakespeare with Canadian playwright Judith Thompson and discover/recover their voices/their chances in tough life circumstances (Thompson). Prisoners on death row in a Kentucky prison perform Shakespeare and some are transformed (*Shakespeare*). Urban aboriginal actors and theatre professionals associated with Toronto's Native Earth Performing Arts adapt and perform Shakespeare's *Julius Caesar* as *The Death of a Chief* on their way to healing trauma in their lives and in their communities (Moll). George Elliott Clarke's fictional Africadian murderer Rufus Hamilton reads *Titus Andronicus* and "listen[s], flummoxed, for language cometh volatile" (Clarke 25). Tibor Egervari writes and directs *Shakespeare's The Merchant of Venice in Auschwitz*, and, for the first time in his life is able to speak openly of the Shoah (Egervari 115).

What these stories have in common can be expressed as a formula: human oppression and suffering, plus Shakespeare = an amelioration, a healing process.

The process has something to do with access to language; it has something to do with identity, and with autobiographical memory. But why Shakespeare? And, how can recent work in social neuroscience enable our understanding of what is going on?

I have asked questions before on the borderline between psychology and literature—an important, but difficult, terrain. I am delighted to be in a position to approach it again, this time with expert companions. My work for this seminar focuses on Tibor Egervari's *The Merchant of Venice* adaptation.

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Allison K. Lenhardt

"This honest creature doubtless / Sees and knows more, much more, than he unfolds":  
Iago's Expressive and Emotive Cues

Examining early modern performance practices and Shakespeare's language through the lens of cognitive science, this paper explores how early modern actors created an emotionally intense performance by using their independently memorized lines to stimulate each other's expressions and body language. Within Shakespeare's plays, words that describe a character's passions and expressions help to establish a character's emotional state, physical appearance, class status, and character alliances. These phrases function as emotive and expressive cues in performance and are just as important as the verbal cues actors use to prompt each other to speak. In performing *Othello*, the actor playing Iago controls the performance's emotional pace by communicating expressive and emotive cues: as the play develops, Iago's words prompt the actor playing Othello to understand what his character sees, knows, and thinks and exactly when and in what way he should respond to each character. While scholars often have acknowledged Iago's skills as a director, analyzing the

actors' parts and cues in relation to cognitive science reveals how the Iago actor's role helped to create a collaborative performance of parts in which early modern actors depended on each other's lines to cue changes in emotion and expression.

Rory G. Lukins

Compassion, Indignation, and the Politics of Affiliation in Shakespearean Tragicomedy

This essay examines the poetics of compassion in Shakespeare's tragicomedies, particularly *Cymbeline*. As Jacobean playwrights recalibrated England's dramatic genres to create the unique formal conventions of tragicomedy, the melding of tragic and comic modes, they also created a powerfully emotive experience that resembles compassion and indignation, as they were understood in the early seventeenth century. As mixed-passions, compassion and indignation were considered to be closely related because the experience of one so resembled that of another: a sense of internal confusion caused by, and directed towards, an external object. The distinction between the two ultimately rests on a personal disposition toward the object of the passion, a disposition that was unavoidably political in nature. Though compassion is often considered an emotion that promotes social cohesion, I argue that the patterns of tragic and comic appeals in the Shakespeare's late plays challenge allegiances based on social identity, allegiances which help organize both the dramatic plot and the empathetic appeal of the main characters. By consistently frustrating the cathartic moments of the play, Shakespearean tragicomedy denies the audience the simple pleasure of a resolution, forcing them instead to reevaluate their opinions of the characters in question, and thus the emotions that underlie those opinions. These plays had political implications, therefore, because they created a sustained sense of compassion that often disrupted allegiances on stage and emphasized a broader sense of tolerance over political or social affiliations based on identity.

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Dr. Richard J. Meek

‘Grief has so wrought on him / He takes false shadows for true substances’: Shakespeare and the Aesthetics of Sympathy

This paper explores the aesthetics of sympathy in *Titus Andronicus*, *The Rape of Lucrece*, and the sonnets. It examines Shakespeare’s interest in representing fictional characters who are themselves moved by the sufferings of another, and how this might provide a model for the spectator or reader’s emotional responses. In this way, the paper does not confine itself to Shakespeare’s theatrical works, but suggests ways in which such questions are explored in Shakespeare’s narrative and poetical texts as well. In *The Rape of Lucrece*, for example, the weeping Lucrece encounters her maid, who, ‘enforced by sympathy’ (1229), begins to weep herself. Here the poem describes an instance of emotional transference in which the maid simply imitates Lucrece’s tears without knowing their cause. Yet later in the poem we find a more complex and ambiguous instance of sympathetic engagement, when Lucrece comes across a painting of the tragic Hecuba and ‘shapes her sorrow to the beldam’s woes’ (1458). These two moments from *Lucrece* thus propose two distinct models of sympathetic engagement, both of which find their semblance in current psychological and philosophical theories of empathy. After exploring the different aspects of sympathy in *Lucrece*, the paper will go on to examine 3.2 of *Titus Andronicus*, and the wider questions regarding intertextuality and suspension of disbelief that the scene raises. To what extent does Titus’s sympathy for a fly reflect upon the audience’s sympathetic engagement with Shakespeare’s play? The paper will conclude with some remarks about the ways in which sympathy is bound up with ideas of mimesis and imitation, and a discussion of sonnet 82, which uses the word ‘sympathized’ to mean ‘faithfully represented’.

Clifford Ronan

Longinus’ Sublimity and Shakespearean Surprise

My project within the seminar is to contribute to the anatomizing and tracing of Shakespearean strategies of surprise: the typically exciting paths of interaction between what is expected and what actually transpires in the way of plot, characterization, theme, memorably phrased and paced scenes.

All art depends on impacts that lead to involvement of mind and emotion. Involvement too is at the heart of Horace's famous prescription that poetry should please, instruct, or simultaneously do both. Surprise has particularly close parallels with Aristotle's *peripeteia*, the perception of a sudden change in the course of a tragic character's notions of his or her situation. Like a peripety, a surprise involves audiences, readers, and discussants of every sort in exchanges that reveal both obvious and unanticipated reactions.

Traditional literary approaches, from the time of the ancient Greeks to the modern era, must work in tandem with the neuroscientific, each helping to clarify and direct the other. Among the least often posited ancient influences on Shakespeare is Longinus, and there seem reasons to suspect that there are close similarities in the philosophies of the two—whether by indebtedness or mere chance.

Longinus is a Mannerist *avant la lettre*. Three of his chief models of Excellence/Sublimity yoke the unexpectedly extraordinary with the familiar. In one instance he considers Sappho's poem about a guest at a festive table, a guest suddenly plagued with an intense attack of psychosomatic torture caused by self-destructive sexual jealousy. In another passage Longinus focuses on Homer's rendering of the prodigious leaping ability of Hera's divine horses. They are said to hurtle through the heavens, landing beyond the horizon, out of sight of even a squinting human who might be scanning the water from a perch on shore. Yet another striking gem in Longinus' treasury is Euripides' portrayal of the panicked cries of Phoebus. He is a father helpless to control—or even to be heard by—his reckless son Phaeton, who is on the point of crashing the family chariot, devastating North Africa, and bequeathing ignominy to his kin. All three passages operate like moments in Shakespeare, a writer obviously also fond of metaphor-laden phrases, and daringly juxtaposed ideas, plots, and character types. As with Longinus' examples, Shakespeare's surprises are full of exciting tensions and dichotomies. And these too release hormones and instigate unexpected but satisfying neurological firings to open along unfamiliar synaptic pathways.

Joseph Michael Sullivan

“Tomorrow, and tomorrow, and tomorrow”: Skewed Perceptions of Contingency in Abridged Texts of *Macbeth*.

Since the 1970s, psychologists like Baruch Fischhoff have examined the ways outcome knowledge skews our perceptions of probability. Once one knows the outcome of an event, what before seemed a possible result becomes probable, perhaps inevitable. Scholars have isolated hindsight bias (also known as creeping determinism and the knew-it-all-along effect) in fields as diverse as medicine, economics, law, history, and risk management. Amos Tversky, Daniel Kahneman and others have empirically established a related phenomenon, anchoring, which describes how one often over-relies upon a limited percentage of available evidence when making predictive judgments. One would think that literary scholars, professionals who reread narratives to the point of partial memorization, might be eager to self-scrutinize how these cognitive biases distort interpretations of texts, especially texts that take fate and/or causation as significant themes. Certainly, before one can advance to the sophisticated operations of cultural studies, one must clearly comprehend the primary text(s) in question. Surprisingly, with the exception of Theatre,

where “anticipation” and “failure to stay in the moment” have long been worries for directors and performers, literary scholars have been content to theorize only on the positive consequences of rereading and reviewing. The cognitive costs of textual reengagement have remained largely ignored.

Evidence of hindsight bias and anchoring can be found most easily and directly within journal articles and book chapters, venues where critics overtly posit what Shakespeare’s plays “mean.” This paper examines a less obvious site for cognitive bias, the abridgment process undertaken by screenwriters, graphic novel adapters, and subtitle/closed caption translators. In particular, multiple iterations of Macbeth are examined, a play well known for its ambivalent attitude toward *wyrd*, or fate. Through the selection of which words remain written or spoken in the text, which words remain represented as visual equivalences, and which words are excised, editors determine how completely and coherently that version of Macbeth captures or abandons the above-mentioned ambivalence. What makes this particular manifestation of the bias so potentially harmful is the fact that, if it exists, it very likely passes itself along subliminally to the consumer of the text.

Screenplays and subtitles/closed captions will be examined for films directed by Orson Welles (1948), Roman Polanski (1971), Philip Casson (1978), Arthur Allan Seidelman (1981), Jack Gold (1983), and Michael Bogdanov (1998), as well as adaptations directed by Akira Kurosawa (1957), Ken Hughes (1958), Billy Morrissette (2001), Mark Brozel (2005), and Vishal Bardwaj (2005). In addition manga/anime adaptations such as Richard Appignanesi’s Manga Shakespeare: Macbeth (Amulet, 2008), Leon Garfield’s Animated Tales (Ambrose Video 2004), Arthur Byron Cover’s Macbeth: The Graphic Novel (Puffin, 2005), and Adam Sexton’s Macbeth: The Manga Edition (Wiley, 2008), will be examined.

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