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Illusions of the other's Nature as My Own: A Critique of a Theory of Embodied Cognition

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The Taming of the Shrew is framed by a narrative involving the performance of fictional gender. In the Induction to the play, Christopher Sly is hauled off the streets and presented with an ideal woman who claims to be his wife: this woman is obedient, docile, and beautiful. She is also, however, male, and her ideal behaviour emphatically fictional: her wifely crying is done with the aid of an onion for instance, and she is none other than a page boy (sometimes identified as going by the name of Bartholomew) in real life. This framing, this aboutness, to pun on two senses of *about* (the main Kate-Petruchio plot is about gender and performance and the Induction's performances of gender run circumfluently about the Kate-Petruchio plot) makes illusory performances of gender a theme of *The Taming of the Shrew*. The frame is also open-ended: the Sly narrative appears at the beginning of the play, and seems to advertise itself as a frame to the internal Kate-Petruchio plot. However the Christopher Sly narrative does not reappear at the end of the Kate-Petruchio plot to round the whole play off. In general in performance, when it is not cut from the play the Sly narrative is either noticeable in its absence at the end of the play or it ultimately dissolves into the Kate-Petruchio plot when we realise that (the actors playing) Christopher Sly and his wife are in fact (playing) Kate and Petruchio as well. Notable instances of this latter occurrence were the performances directed by Michael Bogdanov

(Shakespeare 1978), and Gale Edwards (Shakespeare 1995) in which Sly awoke positively delighted to find that the Kate-Petruchio story was all an illusion, and that his wife, spirit untamed, was beating him around the head. Either way, the explicitly fictional performance of gender that Christopher Sly witnesses both opens questions of metatheatricality—are lovers and spouses like actors playing a prescribed role?—and asks us to unpick the gendered performances of Kate and Petruchio more closely.

In this paper, I will respond to both of these questions, and in particular will attempt to establish the ways in which new neuroscientific theories can help or hinder us in theorising about acting-as-illusion both within *The Taming of the Shrew* (as characters play roles and deceive each other) and when we consider the play as something fictional, performed by a set of people playing parts. The paper demonstrates that theories of embodied cognition tend often to elide the difference between illusion and reality, and between what is fictional and what is real. However, in this paper I also show that there is also a great potential for new theories of embodied cognition and neuroscientific understandings of action and gesture to help us theorise about acting as a form of fictional or illusionary activity. This paper focuses on empathy. It argues that an understanding of empathy both needs to cross the disciplinary boundaries between science and literature, and to acknowledge those boundaries.

We are entering a period in literary studies where brain science is increasingly mentioned, a neuroculture. This is to be celebrated: contrary to what is often thought, taking neuroscientific findings into account does not force us to turn away from a historicised reading of Shakespeare's plays. Rather, it enables us to recuperate the link between science and literature that existed in the early modern era, when both scientific and dramaturgical knowledge practices were often

understood as generated through action, and as ways of ordering and hypothesising about the world. As Crease (1993, p.22) writes, 'An experiment is a kind of performance, understood in the broadest sense of an action executed to see what happens in order to satisfy an interest' as well as providing an overall framework and a vocabulary for seeing the world. This idea allows us to break free from rigid disciplinary boundaries between science and literature, allowing from some fruitful cross-contamination between the disciplines. Nevertheless, it is only with caution that the findings from scientific experiments can be applied to literature: an extra element of mediation is added when the entities we are theorising about and experimenting on are fictional characters.

This mix of fiction and science in both the early modern era and the present day entails that, rather than being the locus of reality as opposed to the illusions of literature, science is no less imbued with the presence of illusion and fiction than literature. In the neural context, the present day subject is characterized, or caricatured, as desiring to explore the phenomenological dehiscence between self as subject and as object, by digitally manipulating, and moving around their brain in a scenario reminiscent of virtual reality and its attendant fictions. The digital image of the brain produced by, for instance, fMRI scans which use magnetic fields to create maps of the brain's activity, becomes a quasi-disembodied locus of the truth. fMRI scans measure brain activity by locating the areas of increased blood flow to the brain. By measuring the increased blood flow in different parts of the human brain, the fMRI scan can, it is argued, tell us what is really going on inside our bodies when we perform certain actions or think certain thoughts. The fMRI image is, nevertheless, embedded in a fictional world, in that we must weave narratives to make sense of, and also construct, the truth of this unspeaking image. Channels of

communication are hereby opened between public and private, self and other. One example is the actress Fiona Shaw's recent performance-as-experiment: she recited a dialogue from TS Eliot's poem 'The Waste Land' in an fMRI scanner and later observed the image of her own brain activation. When told by the scientists operating the scan that, during her recitation, she was using the parts of the brain used for visualization, she provides an interpretation of the image based on factors from her own experience, stating that 'actors' brains' work through 'visual architectural space' and that 'people who aren't actors certainly aren't like that' (Jeffries, 2009).

This paper approaches embodied cognition in a historicised way, challenging the prominent conceptualization of the brain either *only* as an object of neuroscience *or* in an awkward de-historicised juxtaposition of modern neuroscience and early modern culture. Historicising embodied cognition means understanding that it has, since the early modern era, been inherently interdisciplinary. Historicising the brain, moreover, means challenging the notions that Shakespeare and neuroscience are both transparent representations of a stable truth about the world. Rather, itself historically-contingent, neuroscience is uncovering knowledge that were unforeseen by Shakespeare, and it is precisely this fact that generates new and insightful readings of Shakespeare's works. The imperative behind this paper is, to quote Aldous Huxley, a recognition that it would be an 'act of literary cowardice' (Huxley, 1963, p.98) to ignore scientific advancements, and thus it attempts to *respond* to them, to explore their possibilities for, within, and with literature.

Of the many theories of embodied cognition that emerged decisively in recent years, I will concentrate on just one, that of 'altercentric perception' or 'altercentricity'. Firstly, I will explain what altercentricity is and its implications for the illusions deployed by

dramaturgy in general. Secondly, I will look at how it can inform a reading of metatheatrical and theatrical illusion in *The Taming of the Shrew*.

The concept of altercentricity derives from the discovery of the mirror neuron system in humans, whose existence was proven in 2010. The term 'altercentric perception' was coined by Stein Bråten as a result of the early and indirect evidence for mirror neurons in 1992-5 which was produced notably by the (neuro)physiologists Di Pellegrino, Rizzolatti, and Gallese, and their colleagues. These neurons purportedly mirror and replicate the other's affects in our own minds. This is known as altercentricty or altercentric perception because we are feeling as though the other's bodily centre were our own. Altercentricity is a neuroscientific way of understanding empathy. As the psychologist Daniel Stern (2007, p.36-7) explains, the mirror neuron system works such that 'the visual information received when watching another act gets mapped on to the equivalent motor representation in our own brain[…] We experience the other as if we were executing the same action, or feeling the same emotion. This participation in another's mental life creates a sense of feeling/sharing with/ understanding them, and in particular their intentions and feelings'. Cognitively, the first and third person points of view merge to various levels of cognitive focalisation. Somatically, the bodily reactions and experiences of the other become my own. Many literary critics have begun to apply this idea to the ways in which readers or audience members empathise with fictional characters, or actors empathise with their characters. The idea has proved useful for reconceptualising the bond between readers, audiences, or actors, and fictional characters as one which is strong, mutually-transformative, and rooted in bodily processes. However, caution is needed when applying these theories to fiction: the boundary between real life and fiction

cannot be ignored, and findings from experiments on real people cannot unproblematically be applied to fictional characters.

Altercentricity is an idea which I contend we have an imperative to bring into Shakespeare studies, because it helps us to overcome a certain impasse which held sway throughout the twentieth century, and into the beginning of this century. In this period, the critical literature often tended to consolidate the tradition begun by the cultural historian Jacob Burckhardt in his 1860 work *The Civilisation of the Renaissance in Italy*. Burckhardt presented a misleading stereotype of the early modern era as a time when a selfhood began to emerge which was opaque to the other: human subjects had a rich and hidden inner life which could not even be glimpsed by other people. Gestures thus tended to be seen as a Machiavellian form of miscommunication. Altercentricity breaks down these conceptual boundaries and helps us understand that Shakespearean characters can be understood as accessing, understanding and also experiencing each other's inner lives, and, moreover that as audiences we too can have some certainty about the similarities between characters and ourselves.

Altercentricity is especially manifest in mimicking the other's gestures as a result of this embodied empathy, and thus has a number of implications for the traditional Aristotelian concepts of mimesis that are constantly rearticulated in Shakespeare studies. Especially important here is the Aristotelian idea that the representational arts are rooted in the human desire for knowledge through the affective recognition of what is being represented through the illusions of words, paint and so on, and in humans' natural pleasure in imitation. The concept of altercentric perception shares this Aristotelian view that humans evince a natural, beneficial mimetic urge, grounded in the brain as the site of knowledge, representation, and mutual response and reaction. This

suggests that the theory of altercentricity has a strong potential for working in partnership with literary criticism.

This potential is further demonstrated by the broad, multidisciplinary applications of the idea of altercentricity. Altercentric perception is not simply confined to data regarding the brain in particular experiments. Rather it is a way of conceptualising many different kinds of empathy which nevertheless has a basis in empirical evidence. The 'richness' of the concept is amply described by Gallese (2003). Scientists often state that as well as observations in real life, imagining, listening to or reading narratives, and observing occurrences on film all cause the mirror system to respond in this way. The difference, it is often argued, between the neural activity of the mirror system in these cases is merely one of intensity (Watson & Greenberg 2009, p.127-8). This unfortunately elides the problems posed by multidisciplinarity: films, narratives, and plays are illusions or fictions, and are perhaps qualitatively different from real life in that they involve the deliberate masking or construction of intention and affect. Audiences are cognitively aware that when Macbeth dies they do not need to call an ambulance, and when Romeo and Juliet are said to empathise with each other they are still in reality actors reading a script. The thought-processes of the actors playing the characters in a film or play, for instance, are not necessarily the same as their characters'. However embracing this multidisciplinary richness also paves the way for more critical and sustained comparisons in the future between the workings of altercentricity with respect to people in real life and characters created through the illusions of literature.

Altercentricity thus exists per se within a network of many different disciplines, it *calls for* an interdisciplinary understanding. In terms of drama, this obtains both on a practical level (actors must have some knowledge and skill to simulate emotion and produce it in

themselves and audiences) and also within plays as characters use vocabularies of emotion, subjectivity, and affect. The director Peter Brook said of the discovery of mirror neurons: 'neuroscience had finally started to understand what has long been common knowledge in the theatre: the actor's efforts would be in vain if he were not able to surmount all cultural and linguistic barriers and share his bodily sounds and movements with the spectators, who thus actively contribute to the event and become one with the players onstage' (cited in Rizolatti and Sinigaglia, 2006, p.ix). Empathy is not just a neuroscientific fact but also a theatrical one.

A strong partnership is evolving between the scientific and the literary theories. As many have noted, the mirror system's emphasis on gesture, variously called 'bodily intention' (Legrand, 2010, p.176), the 'action understanding' (Rizzolatti et al, 2001, p.667), and 'action representation' (e.g. Carr et al, 2003) of the other's emotions makes the notion of altercentricity highly applicable to drama as the conveyance of information in a dynamic interactional way. To give one recent example, in his book on acting published this year, John Lutterbie (2012, p.2) argues that we cannot understand acting, and historically have not, if we see mind, body, and emotion as distinct.

Yet drama and theories of embodied emotion have constantly intersected. Consider Aristotle's medical term 'catharsis', or Charles Darwin's discussion in his 1872 *The Expression of the Emotions in Man and Animals* of how we mimic others. Darwin notes for example that when we watch a high jumper leaping we find ourselves leaping from our own seats, when a friend clears their throat we feel a lump in our own, and even when we are cutting with scissors we move our jaws in company with the blades (Darwin, 1998, pp.40-1). Darwin here is often quoted in modern neuroscientific discussions of altercentricity (e.g. Bråten, 2007, p.113), and Tiffany Watt Smith's (2010) research

shows a wider link between languages and theories of drama in nineteenth century physiology, especially tracing the influence of sensation-theatre in these sciences.

Tellingly, Darwin's book is peppered throughout with quotations from Shakespeare to illustrate the different emotions. This is symptomatic of the fact that historically there has been, and there remains, often a real conservatism evinced by scientists dealing with literature. Then as now, when scientists in the Anglophone texts think of drama, they tend to turn, usually almost exclusively, to Shakespeare. Darwin's use of Shakespeare draws no distinction between the illusory representation of emotion on the Shakespearean stage and the real-life emotional reactions we feel when we (for instance) cry or laugh in tandem with a friend. This, too, is representative of the treatment of Shakespeare and drama in the scientific literature, where illusion and reality are rarely seen as different emotive experiences.

Early modern conceptions of empathy also resonate strongly with the modern idea of altercentricity. Empathy was available as both a word and a concept of organic feeling-as the other in the early modern era. In the critical literature it is often stated that the word empathy comes into English from the German *Einfühlung* in the twentieth century, but it was in fact available to early moderns from the Greek *empatheia*: in 1688 for instance, Daniel Leeds (P1^{r}) describes Christ suffering for us 'empathetically'. Moreover, early moderns certainly utilised the concept of organically feeling as if one was the other, however they tended to use the word sympathy to describe this, in terms of natural sympathy or sympathy between bodies that are alike. To give one example, imaginative acts of altercentricity are evoked by the hypochondriac Montaigne in his essay 'On the Power of the Imagination'. He writes: 'the sight of another man's suffering produces physical suffering in me, and my own sensitivity has often

misappropriated the feelings of a third party. A persistent cougher tickles my lungs and my throat…'. For Montaigne, this strong power to empathise is also linked to the dissolution of the stark divide between mind and body: 'all of this can be attributed to the close stitching of mind to body, each communicating its fantasies to the other' (2003, pp.109, 118) Again, Montaigne is demonstrating the persistent closing of the gap between illusion/fiction/imagination and reality in discussions of empathy, as he describes himself responding in imagination, and with the potentially illusory symptoms of hypochondria, to the real-life experiences of another person.

In this context, I'd like to look at how altercentricity can help us theorise about performance in one Shakespearean example, *The Taming of the Shrew*. In this play, the shrewish (hot-tempered and violent) woman Kate is asked to perform as a tamed wife, and whether she is tamed or not—whether her performance of tamedness is illusion or reality—is a moot point. Kate's performance thus replicates both the coalescence of illusion and reality in modern and early modern conceptions of empathy, whilst also demonstrating the irreducible tension between illusion and reality.

I contend that altercentricity in *The Taming of the Shrew* occurs in three stages, or in three ways. First, Petruchio meets Kate's shrewishness with an insistence that she is behaving gently; he provides a pattern for her to mimic, asking her to copy him. Secondly, Petruchio himself behaves shrewishly, making Kate experience what it is like to be a recipient of her own actions, and putting her in the position of the other. Thirdly, and finally, Kate ostensibly comes to take up Petruchio's point of view as her own, so that they think as one. The first two are not always linear stages: in production we often find Petruchio alternating gentleness and mimicry of Kate's shrewishness in the same scene, however it is always true that, through gestural

empathy, Petruchio both shows Kate how she acts, and, by contrast, how *to* act. He provides her with a pattern for obedient performance which may or may not accurately express how she feels, and who she is, in reality.

Kate's story is different from the trajectories of popular shrew taming literature of the time in that her transformation comes about at least partly as a result of verbal and gestural mimicking of Petruchio, and he of her. In contradistinction to the Shakespearean text, other early modern shrew taming texts emphasized excessive physical force on the part of the husband: the shrewish wife's transformation to an obedient woman is effected through fear and physical coercion. A salient example is Joannes Bramis' very popular verse-tale *A Merry Ieste of a Shrewde and Curste Wife* (perhaps a translation of an unknown text, it was first published in or around 1530, and its second edition appeared in 1580, a decade before *The Taming of the Shrew* was probably written in 1590-4). The book is not merry at all: the husband resorts to horrendous violence, beating his wife until she bleeds and falls unconscious and then wrapping her in a salted horse's skin. When she awakes in agony, he threatens to repeat his actions if she ever contradicts him again. It comes as no surprise according to the tale's sadistic logic that the wife is, after this, completely tamed. There certainly is violence between Kate and Petruchio in many productions of *The Taming of the Shrew*, and I am not arguing the play represents a good marriage! What is interesting about the play for the purposes of this paper however is that fact that, unlike cruder shrew-taming literature where the wife is simply beaten into submission, Kate's taming ultimately takes the form of an active verbal and physical performance of tamedness. In *The Taming of the Shrew* we witness an epistemological form of feeling-as the other: a couple seemingly experiencing each other's inner life. I say seemingly, because a

disturbing element of performance-as-coercion also remains: Kate and Petruchio play with the world of illusion and fiction in the taming process, meaning that illusion is not completely eradicated from her final (supposedly real) performance of tamedness. I will discuss this at the end of the paper.

Firstly then, Petruchio presents to Kate a verbal pattern for her action which is docile, gentle, and loving, and which she eventually is forced to mimic. As she rails at him and attacks him, he insists

> No, not a whit, I find you passing gentle:
> Twas told me you were rough and coy and sullen
> And now I find report a very liar.
> For thou art courteous, pleasant, gamesome,
> Passing slow in speech, yet sweet as spring-time flowers.
> Thou canst not frown… (2.1.242 ff)

Usually in production the ridiculousness of his description is underscored by a sharp discrepancy between the description and the way in which Kate is acting at the time. In the Zefirelli version for example, Richard Burton's Petruchio delivers this speech about how gentle and sweet Kate is whilst Elizabeth Taylor's Kate is hitting him repeatedly over the head with a piece of wood (Shakespeare, 1967). Petruchio's words create an illusion starkly distinct to the reality with which he is faced. With these very words, however, he seeks to use illusion to change reality, to turn illusion into reality: he aims to bring Kate's nature into line with his illusory description of her.

Petruchio's second strategy is to mimic Kate's shrewishness, so that she occupies the position of victim. He starves her of food, prevents her sleeping with his bawling, and so on, over- or out-playing Kate's own initial role as Shrew. As Peter says, 'he kills her in her own humour' (4.1.188).

This gestural mimicking has been shown to be very powerful in recent studies of the neuroscience of empathy. Studies of altercentric perception have demonstrated that enacting the other's movements deepens the empathy and understanding that we feel towards the other. Somerville & Woodward (2010, p.70) write that we learn to predict others' actions better when we have done those actions ourselves, and also that we integrate the other's observed actions with our own experiences of actions we ourselves have performed, melding our viewpoint, and our own learned 'action plans', with theirs.

Finally, once Kate has been ostensibly tamed by these processes, Kate and Petruchio seem to come to take the same cognitive point of view. Kate's first-person viewpoint coalesces with Petruchio's point of view. When he asks her to go against her own perception of the world and say, though it is bright day, she sees the moon instead of the sun, she acknowledges that whatever Petruchio says 'it shall be so for me' (4.5.15). It is at this point that she also performs one of the indicators of altercentric perception: completing the other's sentence.

> *Petruchio*: I say it is the moon
> *Kate*: I know it is the moon (4.5.16)

Many neuroscientific studies describe finishing the other's sentence as an indication that a subject is experiencing altercentricity with the other (e.g. Bråten, 2007, p.113). In the pentameter line Kate's 'I know' takes the same foot as Petruchio's 'the moon': she has taken his cue, and inserted herself into his point of view, altercepting his intention before he has time to complete it. Thence grows a form of teamwork between the spouses in which Kate takes cues from Petruchio's words and gestures and then inserts herself into his view point. Kate stresses that what the moon means for her is Petruchio's inner world of intentions which she makes her own: 'the moon changes even as *your*

mind' (4.5.20). Is this world illusion, or is it reality? Petruchio's illusion has become, ostensibly at least, Kate's reality.

Early modern paradigms of the wife and husband as one person with one will, and as one flesh, resonate strongly with this idea of altercentricity. Often the literary examples of struggles for epistemological mastery within marriage represent the contentions between husbands and wives of different religious persuasions. Calls for the need for empathy between spouses here have the pragmatic purpose of attempting to prevent strife between husband and wife by having the husband control the belief-systems and behaviours of the couple as a whole. In the source (or analogue or bad copy) of Shakespeare's play, confusingly called *The Taming of A Shrew*, Ferando the husband who has tamed his shrew states that they now have 'One mind, one heart, and one content for both' (12.49-51). As many marriage tracts advocated, these two people act as though they have one nature and one will, and this is also in accordance with the early modern legal fiction whereby 'in the eyes of the law husband and wife were but one person…This one person was for practical purposes the husband' (Baker, 2002, pp.483-4).

We have seen that there are strong resonances then between Kate and Petruchio's relationship and what we now call, following recent neuroscientific discoveries, the altercentric relationship. Of course, it is not as neat as all that. Kate relinquishes overt claims to being an autonomous individual and instead becomes porous to Petruchio's way of seeing the world. This is an ethically sensitive moment, Petruchio exploits this porosity to his own ends. However, because the empathic relationship is a mutually affective one, a similar porosity to the other also destabilises Petruchio's own identity. In *The Taming of The Shrew*, a person's nature and their identity was, before Petruchio began to use his shrew-taming tactics on Kate, seen to be

immutable, real, impervious to fiction: at the beginning of the play, Kate is seen as a shrew by nature, incapable of changing who she really is. Petruchio's (and later Kate's) use of illusion, of fictional descriptions of both Kate and the world around her, seems to change this nature. However, in doing so, Petruchio's own nature becomes contaminated with illusion.

When Petruchio acts shrewishly towards Kate, as is often argued (e.g. Bates, 2002, pp.117-9), this role is not permanent. Presentations of Petruchio as really a gentle-man by nature who is only *playing* a riotous shrew tamer were the norm in twentieth-century productions. For example EH Sothern in Cleveland USA (1905) shouted at Kate to her face, but this was all a performance, secretly he loved her tenderly and kissed her slippers and sighed sentimentally after her when she could not see him (Haring-Smith, 1983, pp.63, 89). In these sorts of onstage interpretation, Petruchio is only playing the shrew, which is not his natural part, for the purposes of taming Kate, of changing her nature. This is of course only one potential interpretation of the play, but I wish to concentrate on it here because it stresses the potential for illusion in both Kate and Petruchio's performances. This raises questions of how far we can subvert our natures and change the natures of others, however temporarily, through performances of gestural and verbal mimicking.

Petruchio seeks from Kate not only obedience but also reassurance. Petruchio's actions are dangerous: his performance of shrewishness involves disrupting the patriarchy he is supposed to be helping by taming an unruly woman (for this argument see Reynolds, 1997, p.149; Schuler, 2004, pp.387-90). For example, he blasphemously quaffs up all the communion wine at his wedding and punches the priest. Due formality and ceremony were of paramount importance in the early modern marriage treatises, and these treatises

were, in their turn, very important for English and European comedy (Clubb, 1967, p.244). William Harrington (1528, fol.A3[r] ff.) details the importance of the 'solempnyte' and ceremony of marriage, for example, and Cornelius Agrippa (1540, fol. Diij[v]) decries a wedding where, like Kate and Petruchio's, 'the ordinance is nothing regarded but all manere of lightnesse' including drunkenness and 'noyse'. By mimicking Petruchio correctly, by coming to perceive as him, Kate ensures that his temporary disruption of societal structures will not be in vain and will, in the end, serve to re-consolidate patriarchal control. The reality of patriarchy is thus exposed as both constructed through illusion and as unchanging reality. This is the mutuality of altercentricity at work. Petruchio seeks not only for Kate to replicate his own image, but to reflect it back to him through her reenactments and revocalisations. There are countless early modern depictions of couples as mutually-affective mirrors, able to change as well as replicate each other.

Finally, the performativity of Kate's new role as a tamed wife is also drawn into relief. Petruchio is creating a whole new personality for Kate, which raises problems of ontology: is this (second) nature as an obedient wife robust and lasting or is it purely gestural and verbal performance?

Thus we see discrepancies in Kate's capitulation speech at the play's close, when she presents herself before everyone as a tamed woman. To give just one example, she describes her body as ineffective, saying

> Why are our bodies soft and weak and smooth…
> But that our soft conditions and our hearts
> Should well agree with our external parts (5.1.165-88)

However this weak and passive self is entirely performative: Kate displays a pronounced lack of physical weakness and indeed 'soft

condition' throughout the play. As well as her shrewish railing throughout Act One for example, we hear of her wading through mud and 'pluck[ing]' Petruchio off Biondello (4.1.78), see her tying Bianca up as the play begins (2.1.1ff.), and hauling Bianca and the Widow onstage as it ends (5.2.118-9). She is constantly a physically intimidating presence, and for our question of gendered performativity it is important that she is intimidating in this way to the men in the play: her nature is not such that she is weaker than they. Unless we are to believe that Kate's body has transformed in seconds from one capable of hauling or chasing two other people about to one that is definitively feeble, her capitulation speech is merely a verbal game whereby she produces a new identity for herself as a response to Petruchio's teachings.

The game-like aspect of Kate's final performance has been brought out in several productions. For example, in Bogdanov's 1978 stage production, Petruchio's performance was *too* effective, producing an analogously overly effective performance in Kate. It was grossly obvious that both were deliberately performing their gender roles, and Johnathan Pryce the actor playing Petruchio stated that he wished to show that both men and women are 'conditioned' to act in certain ways (cited in Haring-Smith, 1985, p.118). In Phyllida Lloyd's all-female production at the Globe in 2003, Kate (played by Kathryn Hunter) recited her speech about how the ideal woman is submissive to her husband in a way which made it clear that her objective was to parody this ideal of the obedient wife. Indeed, she and the other female characters ended the play hooting with laughter, united against the male characters, who were portrayed at this point as feeling uncomfortable and foolish (Halliday, 2003; Schafer, 2003). Again, gendered reality is challenged as well as constructed and consolidated by theatrical illusion.

Many contemporary writers debated whether women were all natural shrews or whether shrewishness was just assumed behaviour: the latter suggested the disturbing possibility that obedient wifely behaviour itself may be a reversible habit. In a popular translation of Erasmus' *A mery discourse, declarying the properties of shrowde shrews, and honest wyues* (1557), for instance, the model wife Eulalia describes herself using learned pretences and deliberate 'craftes' to please her husband, and also to 'reform' him by example into the optimum husband. Just as the tenaciousness of Kate's role as shrew is destabilized, so too is that of her new role as obedient wife. In the failure of language to match the body, Kate's still-strong body and wilful mind are the residue that has not been captured by her performance of weakness. Her capitulation speech co-opts the discourses of the natural in order to perform the natural. Her performance can, however, never entirely achieve indistinguishability from the natural.

The reversibility of Kate's statements that women in their weakness rely on the strength of men in the capitulation speech, is demonstrated by Jane Anger's popular 1589 antimisogynist pamphlet (whether or not this was a pseudonym is subject to debate as nothing is known of the author). Anger writes for instance that it is men who in their weakness rely on the strengths and worldly skills of women (fol.C1^{v}) 'They are conforted by our means, they nourished by the meats we messe: their bodies freed from diseases by our cleanliness, which otherwise would surfeit unreasonably through their own noisomnes…They love to go handsomely in their apparel and rejoice in the pride thereof, yet who is the cause of it, but our carefulness, to see that every thing about them be curious…'. There are also contemporary male versions of the tamed shrew, for instance, George Wilkins' 1607 play *The Miseries of Inforc'd Marriage*. This play presents a male counterpart to Shakespeare's Kate, depicting the struggles of John

Scarborow who is forced to marry against his will and as a consequence is violent and abusive towards his family. Eventually he meekly accepts them and his responsibilities towards them, as he learns to empathise with them and to see himself in the role of husband and father in which they see him rather than as the single man he had continued to see himself to be. Neither shrewishness nor weakness and dependency towards the opposite sex were intractably viewed as female attributes.

Through this mutual mimicking, then, Kate seemingly produces for herself a new, tamed, inner life of feelings, thoughts, and beliefs that is problematically embodied. She performs gestures of tamedness and also evokes the sense that her thoughts, too, have changed and become tame. Dualism prompts us towards the irresolveable question of whether mimicking Petruchio's gesture produced the inner change in Kate or whether an inner change occurred first and this was subsequently expressed through gesture. Moreover, how can we tell whether there is any inner change at all or simply gesture alone? Altercentricity and theories of drama intersect at this problem of taking on, of naturalising, a new character. Both, therefore, must grapple with the distinction between illusion and reality. Theories of altercentricity must not shy away from handling this distinction with clarity.

Kate and Petruchio do not experience the only altercentric relationship in the play: several other characters are busy empathising with them and with each other. Moreover, altercentricity is just the tip of the iceberg when it comes to theories of embodied cognition that can potentially be applied to literature. Altercentricity is just one example of the ways in which, as critical tools, science and literary theory have the power to transform, and to inform, each other. As Gillian Beer (1996, p.172) writes, science neither 'precedes' literature nor 'remains intact' after this transformational encounter. As a result of the encounter between scientific and literary theory, the boundary

between illusion and reality becomes porous in places, and this is precisely why as a theory of embodied cognition altercentricity becomes useful for opening out new understandings of literary artefacts. The crossover between illusion and reality is embedded in drama's crossovers between the fictional world of the characters of a play, and the real world of the actor and audience members (a list which is by no means comprehensive). The potential for empathy and recognition plays a large part in the relationships that actors, characters, and audience members can experience with each other. Thus makes altercentricity a theory that applies not only to the closed environment of the laboratory but also to the (not wholly dissimilar) environment of the theatre. However, it is also true that the boundary between illusion and reality is not completely dissolved by theories of embodied cognition. This is written into *The Taming of the Shrew* itself, and no less powerfully than in Kate's final performance of the tamed wife. And this is where this paper mounts its critique of the ways in which bare fact and creative interpretation, real human brains and the brains of literary characters (which cannot easily be said to exist in any physical sense) have so often been treated as the same thing. Acknowledging the boundaries between fiction and science as well as the potential for a theory of embodied cognition to apply to both fiction and science leads to nuanced, exciting, and useful applications of theories such as altercentricity to the study of literature.

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