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# The object of neuroscience and literary studies

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**ABSTRACT**

An investment in the object as unquestionably self-evident and self-defining has for quite some time now been widely critiqued as a central philosophical tenet of crony capitalism in its current economic, material, social, cultural and institutional manifestations. In this article, I trace that appeal to the category of the object in order to claim its discursive presence also in recent critical tendencies in literary criticism in relation to science, specifically evolutionary psychology and its underpinning neuro- and cognitive science. I focus my explorations through the 2010–2012 debate about 'Literary Darwinism' in the American journal *Critical Inquiry* and some selected articles from a 2008 special double-issue of the *Journal of Beckett Studies* on 'Beckett, Language and the Mind', arguing that both illustrate typical, core issues and problems in the critical discourses about science and literature, specifically how both the literary criticism and the science that is drawn on to support it are nevertheless all made to be rooted in a world of an agreed liberal, political and ideological commitment to a subject assumed as an autonomous agent with a transparent consciousness and language to match.

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An investment in the object as unquestionably self-evident and self-defining has for quite some time now been critiqued as a central philosophical tenet of crony capitalism in its current economic, material, social, cultural and institutional manifestations.[1] In this article, I want to trace that appeal to the category of the object in order to claim its discursive presence with (or power over) 'real things' also in recent critical tendencies in literary criticism in relation to science, specifically evolutionary psychology and its underpinning neuro- and cognitive science.[2] Through my exploration I will also argue how these tendencies in literary studies and neuroscience rest on a repression of a history of specific philosophical and theoretical debates. Claude Lévi-Strauss formulated this repressed history and history of repression as follows:

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> Every effort to understand destroys the object studied in favour of another object of a different nature; this second object requires from us a new effort which destroys it in favour of a third, and so on and so forth until we reach the one lasting presence, the point at which the distinction between meaning and the absence of meaning disappears; the same point from which we began. It is 2,500 years since men first discovered and formulated these truths. In the interval, we have found nothing new, except – as we have tried to turn all possible ways out of the dilemma – so many additional proofs of the conclusion that we would have liked to avoid.[3]

To work through the implications of Levi-Strauss's history of histories for the claims of literary studies and neuroscience, I focus my explorations here through two examples: the 2010–2012 debate about 'Literary Darwinism' in the American journal *Critical Inquiry*[4] and some selected articles from a 2008 special double-issue of the *Journal of Beckett Studies* on 'Beckett, Language and the Mind'.[5] I have chosen what may seem to be debates with quite different focuses precisely in order to argue that they are in key ways more similar than they may appear: first, both the *Critical Inquiry* debate and the *Journal of Beckett Studies* special issue claim for themselves a position at the cutting-edge of new scholarship and academic developments, pointing the way forward to what is seen by them to be desirable or even inevitable about the future study and role of literature, both academically and in the wider society and culture, and specifically in relation to new scientific developments.[6] They are by no means alone, of course, in seeing this as an important way forward for humanities and literary studies: 'Science in Culture' is, after all, one of the four current main themes of the UK's Arts and Humanities Research Council, which argues that '[s]ituated in a radically different research paradigm, the arts and humanities bring knowledge not normally covered by science'.[7] In contrast to such claims of 'radical difference', I argue here that in such critical discourses deployed about science and literature and the relationship between the two, both the literary criticism *and* the science are rooted in an agreed liberal, political and ideological commitment to a subject assumed as an autonomous agent with a transparent consciousness and language to match and its accompanying autonomous, independent, self-constituted, 'object'. As my quotation from Levi-Strauss demonstrates, this is not a new area of consideration, but all the more reason, I argue, to ask why and how it is now being ignored as such in the kinds of arguments I turn to here.

To begin with, then, I turn to the debate about Literary Darwinism which was extensively engaged with in a lively manner in the pages of *Critical Inquiry*. 'Literary Darwinism'[8] has been defined by one of its founders, Joseph Carroll, as

> integrat[ing] literary concepts with a modern evolutionary understanding of the evolved and adapted characteristics of human nature.[…] aim[ing] not just at being one more "school" or movement in literary theory […but] at fundamentally transforming the framework for all literary study.[9]

The concern of the *Critical Inquiry* debate was how claims about evolution are exactly understood in scientific terms and the ensuing implications for whether and how evolution might indeed be relevant to 'the framework for literary study'. This was by no means the first of such debates; 'such talk is not new', as Jonathan Kramnick, whose 2011 article 'Against Literary Darwinism' instigated the *Critical Inquiry* debate, himself points out in his response to his critics.[10] I want here, however, to illustrate through examining the specific terms of this debate how Literary Darwinism is currently by no means a lone voice, but part of a broader, pervasive, anti-theoretical tendency in wider literary and scientific studies; as Carlo Salzani, amongst others, has argued, in his review of Joseph Carroll's book *Reading Human Nature*,

> This *dialogue de sourds* extends far beyond the borders of Literary Darwinism and characterizes the old opposition between natural sciences and humanities, which had an explosion – mainly in American academia – with the 'Science Wars' of the 1990s […], but still rages in the contemporary debate about the 'crisis of the humanities'.[11]

Indeed, Jonathan Kramnick's own arguments, however rigorous and scholarly in their attempts to clarify specific scientific theories of evolution and their possible relation to literary studies, nevertheless avoid the implications of prior questioning of the status of 'science' or 'texts' in their own right; this is also the case for several of the articles in 'Beckett, Language and the Mind'. In short, I raise the question here about how and why whole recent – and ongoing – debates about science and literary studies, about 'interdisciplinarity' and its (im)possibilities and about 'the history of theories of mind',[12] manage to take place in strictly liberal-humanist terms;[13] that is to say, for all the scrupulous open-mindedness often on display, deconstruction is, apparently, the – as it were – 'theory of mind' whose name dare not be spoken.[14]

The central question for me here is not whether Literary Darwinism in and of itself is legitimate or not, but why deconstructive approaches in this particular debate are apparently relegated a priori to illegitimacy? Why and how are they not included in the debate? (Isn't that what a 'debate' is supposed to be?); all the more as this has in many senses always been, in fact, *their* debate *par excellence*? Kramnick, in defence of literary studies, for instance refers his critics to the

> Recent years [which] have seen a vibrantly eclectic curiosity in quantitative, empirical, and otherwise novel approaches to literary study, from the digital humanities to the cognitive sciences to affect theory and beyond. To say that the business is theory-besotted and averse to things scientific is, to borrow an expression from Joseph Carroll, 'boxing at shadows'.[15]

Kramnick's defence attempts to be conciliatory towards the Literary Darwinists by demonstrating a broader, sincere, interest in and receptivity to science on the part of literary studies; but what may seem to be a concession merely, in

fact – advertently or inadvertently – constitutes a full surrender, for an accepted division between the 'theory besotted' and 'things scientific' which are, here, 'quantitative, empirical, […] digital […] cognitive sciences to affect theory and beyond' confirms 'science' as in the business of quantifiable and natural, spontaneous objects of available scrutiny, in opposition to a 'theory' which is therefore, willy-nilly, to quote Joseph Carroll 'creative, speculative thought' not 'serious, real knowledge, constructive knowledge'.[16] And with this confirmation, for all the battles Kramnick wins in terms of persistently clarifying arguments and settling scholarly points, his war is in fact already lost and the debate is necessarily determined to being recapitulated in these terms precisely, returning to the site of the crime in reviewing repeatedly which scientific claim, under this definition of 'science', is the *most* logical, the *best* 'real knowledge'. And this is not to say that such recapitulative debates are not in their own right admirable and necessary *within* those liberal terms, and will undoubtedly continue as such too, but to suggest that the terms can be *different*. As Vicki Kirby writes in her book on deconstruction and science, *Quantum Anthropologies*:

> When Derrida reminds his audience that deconstruction's implications could not be confined to philosophy any more than they could be restricted between the covers of a book, perhaps the most provocative consequence of such clarifications is that the reader/ writer of this 'general text' is necessarily dispersed – it is not located, at least not in any classical sense, in a human agent. Within this 'open system' whose only constant is mutation/ writing, the same questions that are confronted in the physical sciences about determination, agency, causality, space-time involvement, and 'spooky' entanglement, are all operative.[17]

It is Kirby's aim, as it has been of several other notable deconstructionists over many years,[18] to explain how it is just as much – if I may (mis)quote Kramnick quoting Carroll – 'boxing at shadows' 'to say that [deconstruction] is averse to things scientific'. It can be stated at this point that one of the several reasons that deconstruction is a priori absent or dismissed from the debate as held here is that the rage against 'theory' of the Literary Darwinists – but, significantly, as we will see also with respect to the articles on Beckett, not just the Literary Darwinists – is precisely fired by the fact that they *all* understand deconstruction somehow to 'evaporate' a world of natural, material subjects and objects; as Carroll argues, 'poststructuralism yields causal primacy to language', which for Carroll, as Carlo Salzani points out, means 'it is incompatible with a "perspective in which 'life', self-replicating DNA, precedes thought, to say nothing of language"'.[19] Kramnick quotes Brian Boyd as similarly asserting that 'humans are not just cultural or textual phenomena but something more complex',[20] and goes on to argue that '[t]he important part of this sentence is not the routine invective against jargon and politics so much as the reference to humans as "something

more complex" than mere textual entities'.[21] What is significant to my interests here is that Kramnick then does not, however, take the opportunity – as he might have – to question the 'mereness' and/of that 'textual', but instead immediately turns to his defence of literary studies' real interest in 'science' through claiming that, in fact, Boyd is wrong to downplay 'the lively state of play [in the Humanities] on topics dear to many Literary Darwinists, including especially ideas of mate selection, differential kin preferences, and innate sexual predispositions',[22] as well as what Kramnick sees as the several developing 'novel approaches'.

These a priori assumptions about science, the natural and the material continue to be most exposed at, again, what are ostensibly precisely open-minded moments in the debate, such as when G. Gabrielle Starr on the one hand helpfully implies that Literary Darwinism's accounts of 'theory' are dubious when she queries 'whether [the] criticisms [of scholars like Carroll and Jonathan Gottschall of poststructuralist theorizing] are valid', but, on the other hand, Starr herself simultaneously dismisses further consideration of any kind of 'poststructuralist theorising' in asserting that, anyway, 'the work of literary scholars [now] goes beyond' it.[23] In line with this claim to progression, Starr also finds herself in agreement with Joseph Carroll in criticising literary scholars for 'rely[ing] on theories of mind (like those of psychoanalysis) that have been generally supplanted in modern psychology', where Starr assumes that 'cognitive neuroscience' has superseded psychoanalysis.[24] Similarly, Blakey Vermeule thoughtfully confesses how she

> used to worry about [what evolutionary psychology has to do with literary study] even more (and with much more reason) when our field was given over to psychoanalysis, a fascinating rival case. As a theory, psychoanalysis is undeniably rich.[25]

But immediately follows this with the conclusion that '[a]s a story about the mind, however, it is laughable'.[26] Vermeule's assertion assumes a 'psychoanalysis' under the same banner as the supposedly science-averse 'theory', and I can use her somewhat throw-away conclusion to invoke the important historical parallel and, sometimes, significant overlap, between the long-running and extensive debates around the 'scientific' status of psychoanalysis and the relationships between deconstruction and science, both of which in fact put into question the liberal definition of 'science' that all contributors to this particular debate rely on *tout court*.

Modernism scholar Daniela Caselli analyses what is at stake in such matters when she writes in relation specifically to the 'affect theory' also mentioned by Kramnick as one of the 'novel approaches' in literary studies that:

> feminist theory, and theory in general, are focused [at this historical point] on a process of self-criticism aimed, on the one hand, at questioning past methodological rigidities identified as the attachment to epistemology over ontology, the

> centrality of estrangement over affective identification, and the alleged dogma of constructivism, and, on the other, at engaging with areas of thought perceived as having remained for decades no entry zones, such as science (in particular neuroscience) and affect.[27]

Significantly, Caselli adds that the

> elusive quality of affect [… is] essential to its promise of transcending notions of otherness, both within and without the self. Affect promises – creatively – to go beyond what theory – boringly – has been able to examine so far, and brings with this the allure of immediacy.[28]

Where Kramnick critiques Literary Darwinists on their own grounds with a lack of evidence, argument, or satisfaction of 'at least *some* criteria',[29] Caselli reads what such claims are themselves *about*; what they are invoked to achieve and secure, regardless of whether, or how, they may also be somehow 'provable' (or not) as 'true'.

Caselli in her critique of affect, puzzles, as I do here too, over the issue of 'lost' or 'forgotten' prior deconstructive – and in this case, significantly, also psychoanalytic – arguments which already long-previously critiqued a proposed 'new' turn of affect theory when she points out that feminist, psychoanalytic scholars 'Jacqueline Rose and Juliet Mitchell in the late 1970s and early 1980s were already illustrating the problems encountered in attempting to theorize femininity as beyond the symbolic'.[30] Rose and Mitchell challenge the 'mereness' of 'textuality' (through the 'symbolic' in this quotation), in the way that, as I noted earlier, Kramnick does not. It is not coincidental that another theorist whose work is at the heart of these issues, in a certain sense, above all with respect to Literary Darwinism specifically, is also a feminist critic, and one never mentioned in the exchanges in *Critical Inquiry*: Donna Haraway argued in her classic 1989 book *Primate Visions* that these debates are because of, and about, the particular political relevance and moment of Western late-capitalism, where object-fetishism ironically unites many of both the critics *and* the supporters of the present state of affairs; as critic Neil Cocks puts it, adapting Jacqueline Rose's formulations about the child,

> neuroscientific accounts of […] cognition recover and maintain thought as scan, brain and figure: an object of scrutiny and exchange. Therefore, these cognitivist studies are about the desire for a possibility of a return to a point of pure origin in a past where there was no split between language and object.[31]

These arguments are necessarily opened-up for Haraway, as for Rose and Mitchell, by feminism,

> as in all feminist senses, gender cannot mean simply the cultural appropriation of biological sexual difference; indeed sexual difference is itself the more fundamental cultural construction. And even that sense of sexual difference is not

> enough for feminist theory; gender is woven of asymmetrical and multiply arrayed difference, charged with the currents of power surging through multi-faceted dramatic narratives of domination and struggles for its end.[32]

Haraway's arguments fundamentally disrupt the 'science' versus 'literary' – or 'real' versus 'fantasy'/'fiction' – opposition that ultimately, in this sense, scuppers Kramnick, for all his careful side-stepping of it through attempts at gentle modification. Haraway argues that

> The history of science appears as a narrative about the history of technical and social means to produce the facts. The facts themselves are types of stories, of testimony to experience. But the provocation of experience requires an elaborate technology – including physical tools, an accessible tradition of interpretation, and specific social relations. Not just anything can emerge as a fact; not just anything can be seen or done, and so told. Scientific practice may be considered a kind of story-telling practice – a rule-governed, constrained, historically changing craft of narrating the history of nature.[…] To treat a science as a narrative is not to be dismissive, quite the contrary.[33]

It is relevant to note in the context of this whole debate that Haraway herself, as with many of the feminist theorists of science of her generation (whatever their precise perspectives on the implications of feminism for science), is a trained laboratory scientist,[34] in her case both a developmental biologist and a primatologist. Her doctoral thesis, published as *Crystals, Fabrics and Fields: Metaphors that Shape Embryos*[35] is described in biologist Scott F. Gilbert's 'Foreword' for its 2004 re-publication as being able to help

> newly minted developmental biologists [working in the three new disciplines of evolutionary developmental biology, ecological developmental biology and medical developmental biology] to understand the morphogenesis of their discipline [and i]t should reconnect the new developmental biology with the older embryology.[36]

I make this point because I want to argue too that Kramnick's (and the further debate-contributors', as well as some of the Beckettians', as we shall see later) hopeful figuration of 'interdisciplinarity' as a future consummation devoutly to be wished, is in more ways than one a ship that sailed long-ago once the feminist and deconstructivist views discussed here hive back in to view. It is, in fact, ironically, the upholding of the liberal view of science as not always anyway about perspectives, but in the end indeed about self-constituted objects, vision and natural facts, that creates the very split that 'interdisciplinarity' is invoked to heal. As Vicki Kirby explains:

> by taking Derrida's notion of an 'open system' to its logical conclusion, the senses of particularism – whether individual subjects, words, methodologies, or even systems – lose their identifying outlines as entities or atomic individuations that communicate, or relate to each other, with causal effect. Instead they can be read as different expressions of the same phenomenon.[37]

And as theorist Geoff Bennington wrote in 1999 (about the declamation then already, or again, of a state of 'post theory'):

> Post-theory we all do very different things, but they're all the same, because they all proclaim difference. That […] is the call more or less concealed and more or less encouraged by recent, post-theoretical appeals to difference as *value*. […] Interdisciplinarity has become a watchword for a soft historicist cultural idealism.[38]

In the light of warnings such as Bennington's about 'interdisciplinarity' as secured by known separations that are merely to be bridged, it might be noted that the contributors to these debates may well end up very unpleasantly surprised when they proclaim their wish to leap forward in to this bright new world of 'interdisciplinarity' between 'science' and 'literary studies', while, advertently or inadvertently, continuing to participate in the exclusion from debate of certain differences from the differences they have already all agreed on. For they may well find that they will not end up, in fact, seducing the hand that feeds them by obediently transforming their 'literary objects', through the supplement of a late-Capitalist, consumerist 'science', in to *effective reproductions*, but instead that it will turn out that they are licking the hand that beats them, to the impoverishment both of themselves and of the 'disciplines' they are so anxious, one way or another, to preserve.

I now turn to drawing out the similarities between the debate around Literary Darwinism as I have read it above, and several articles in the special double-issue of the *Journal of Beckett Studies* on 'Beckett, Language and the Mind'. If Literary Darwinism may, after all, seem to be a somewhat a minority interest in literary studies, Beckett criticism may seem an unlikely area in which to locate an anti-theoretical tendency, let alone a liberal conception of unitary subjects and objects: Beckett's work is widely regarded precisely as engaging in a 'radical decentering of the human subject'[39] and as inspiring a great deal of highly theoretical criticism in its own right due to its minimalism, its openness to interpretation and its challenging of literary traditions. Nevertheless, just as with Kramnick's seemingly innocuous arguments about the 'vibrantly eclectic curiosity in quantitative, empirical, and otherwise novel approaches to literary study',[40] Elizabeth Barry, in her introduction to the *Journal of Beckett Studies* special issue, claims that:

> the empirical discoveries [in neuroscience] are only part of the impetus to explore the relations between language and thought in Beckett's work. Newly discovered conceptual relations between the disciplines of neuroscience, psychoanalysis and literary studies, and the new scholarly directions being forged by our contributors in this respect, have opened up some of the most suggestive avenues in Beckett criticism to be seen for some time. We are at a new threshold in Beckett studies, in short, that this volume hopes to mark.[41]

The 'empirical' returns further when Barry, in discussing Lois Oppenheim's contribution to the special issue, describes Oppenheim's article as introducing

'a new discipline [neuro-psychoanalysis] which can describe subjective experience and relate mental function to the brain by uniting the empirical data of neuroscientific research with the clinical evidence of psychodynamic study'.[42] Science here unquestioningly is tied to an 'empirical' which is the producer of 'data' and to an objectivity necessarily in opposition to 'subjective experience'. In Barry's terms, then, 'subjective experience' can be *turned into* the objective by 'uniting' what was previously separated: 'empirical data' and 'clinical evidence' and 'mental function' and 'the brain'. In turn, these aspects are what mark a 'new threshold in Beckett studies'.

Science, then, as in the Literary Darwinism debate, is already defined in liberal terms which of themselves determine its function and contributions. This alignment between the Literary Darwinism debate and the 'Beckett, Language and the Mind' discussions can be further followed in, for instance, Peter Fifield's arguments that:

> The neuropsychological correlative is valuable not only for the fresh perspective it delivers upon Beckett's work but as a corrective for the naiveties of earlier criticism. […] Neuropsychology, however, with its substantial models and extensive clinical evidence, re-locates the Beckettian post-obit text from its more abstract interpretations into the realm of substantial empirical enquiry.[43]

Moreover, this 'substantial empirical enquiry' for Fifield will serve as a 'corrective' to a 'deconstruction and post-structuralism' which are by Fifield characterised as an 'insistence that language functions as an impersonal system of relations of deferral' which 'is born with its own naivety; namely, the failure to account for the resounding humanity of even the most radically self-doubting texts'.[44] Barry, Oppenheim and Fifield's turn to a science of empiricism and data, which in their view can transform a groundless and speculative subjectivity into a substantive and consistent objectivity, therefore allows for a rejection of a deconstruction claimed to be about language 'as an impersonal system' and about 'abstract interpretations' which cannot 'account for the resounding humanity', echoing Brian Boyd's similar rejection of deconstruction on the grounds that 'humans are not just cultural or textual phenomena but something more complex'.[45] In these views, interestingly and in some senses paradoxically, 'humanity' is located not in subjectivity and self-doubt, but in an objectivity which is claimed to be 'more complex' than 'cultural or textual phenomena', while at the same time also being about language as somehow 'personal' and not about a 'system'. At stake here seems to be a conception of humanity which is about some kind of pure emotion, which is in turn part of a language seen to be deeply personal. However, such emotion and language are at the same time claimed to be known objectively: inevitably true for all as scientific and empirical data, which are themselves, therefore, neither cultural nor textual phenomena, nor abstract, nor impersonal systems.

These invoked oppositions between the abstract and concrete, between the empirical and non-empirical and the 'impersonal' (or 'just cultural and textual phenomena') and 'humanity' also recur in understandings of the body, as Ulrika Maude concludes:

> Beckett's representations of suffering and the body's inherently deviant disposition [… foreground] the embodied and material nature of language. Through the incessant falling, crawling, trembling and ticing, all of which bring the body ever closer to earth, Beckettian characters are ceaselessly reminded of their own inescapable materiality.[46]

For all the ways in which Maude praises Beckett's work for turning 'to these forms of motility and utterance precisely for the manner in which they foreground contingency, defy coherent syntax, cast agency into doubt and question received notions of dualism, agency and subjectivity itself',[47] her formulations nevertheless throughout rely on a retrieved consistency, dualism and agency through that known and knowable 'inherently deviant disposition', 'embodiment' and 'materiality'. Moreover, this embodiment and materiality is, as with Fifield, linked to a non-abstraction, here through the notion of the 'everyday': 'Motility in Beckett, in other words, lacks the kind of transparency it tends to have in literature, including modernist writing such as Joyce's or Lawrence's, or indeed that it has in our everyday lives'.[48] This 'transparency' also establishes a normed body against which abnormalities can be viewed as such, validating the reading of 'Tourette's' as visible disability. It is of this 'body', which has been and continues to be so often overtly questioned but yet consistently, often inadvertently, reinstated nevertheless, that Judith Butler famously writes that she is repeatedly pressed to admit after all

> to a bodily life that could not be theorized away.[…] restored to that bodily being which is, after all, considered to be most real, most pressing, most undeniable.[…] And if I persisted in this notion that bodies were in some way *constructed*, perhaps I really thought that words alone had the power to craft bodies from their own linguistic substance? Couldn't someone simply take me aside?[49]

The liberal investment Butler addresses as a material, fleshly, suffering body that can speak itself, outside and beyond language, situates the Liberal Darwinists' anti-theory as it does Fifield's 'humanity', and the 'empiricism' of Barry, Oppenheim, Maude and Fifield and all the partakers in the *Critical Inquiry* debate as well as much more widely.

If the mind-body dualism, then, is advertently or inadvertently upheld as part of the investment in a world-beyond-text, then there is another important aspect to these liberal arguments which does not just ground the position of the Literary Darwinists and the 'literary neuroscientists', but also the work of the neuroscientists themselves. For not only do literary scholars draw on neuroscience in an attempt to make their field 'new', but the neuroscientists

draw on literature and ideas of the literary in their own work in turn, so making a closed loop of assumptions and arguments that feed in to each other. Maude, for instance, cites the famous popularizer of neuroscience, Oliver Sacks, in defining Tourette's Syndrome:

> In fact, the very distinction between motor activities, poetic language and language pathologies has been rendered problematic by recent neuro-anatomical research. For while language involves various areas of the cortex, such as Broca's area in the neocortex and Wernicke's area in the posterior cortex, the involvement of subcortical regions of the brain – areas that also control motor activities and affect – suggests that the 'fascinations with the sounds and rhythms of language, with rhymes and repetitions, with its chants and interpersonal powers', the very driving forces of poetic language, also 'haunt the terrible and involuntary utterances of Tourette's syndrome in its powerful connections between motor activity and phonic activity' (Schleifer, 564). In Tourette's, which is characterised by an overt 'excitement of the emotions and the passions, a disorder of the primal, instinctual bases of behaviour, the disturbance seems to lie in the very highest parts of the "old brain": the thalamus, hypothalamus, limbic system and amygdala, where the basic affective and instinctual determinants of personality are lodged'.[50]

Notable here are the inclusion by Maude of 'affect' as 'controlled' by an 'area', thus rendering it an independent, autonomous brain function or response, as well as the assumption of such a thing as 'poetic language' by both Maude and Schleifer which has as its 'very driving forces' 'the sounds and rhythms of language, with rhymes and repetitions, with its chants and interpersonal powers'.[51] These 'very driving forces' are assumed in turn to be about 'an overt "excitement of the emotions and the passions […] the basic affective and instinctual determinants of personality"'. This 'poetic language' and its unquestioned forces, structures, 'fascinations' and 'interpersonal powers' rely on the classic liberal-humanist vision of literature – and above all, poetry – as being about the deepest and most powerful human emotions. It is entirely in line with such redemptive hopes for the interdisciplinary project of literature and neuroscience that the liberal dream is now vested in the brain itself; the brain as guarantor of a trans-historical and trans-cultural, innately correct response to literature and poetry, safe out of the reach of the simultaneously frigid impersonality and flighty irrelevances of post-modernity. As Oppenheim writes:

> While mirror neurons have been located only in the cortex, on the outer surface of the brain in the so-called action systems, it is believed that either they send messages to the sub-cortical emotional (limbic) system to allow us to feel what others feel or that they are also to be found in the emotional system of the brain […] Either way, an understanding of the neurobiology of shared emotion (empathy) is thus close at hand […] the representation of self and other underlying that intersubjectivity may be more direct or immediate and less symbolic or cognitively encoded than previously assumed.[52]

'Mirror neurons' here also guarantee 'interpersonal powers', now between person and person, who already are known to be able to feel the same feelings as one another through an 'empathy' which cannot neutrally distinguish between action and perception, or between self and other, even while those distinctions can be made elsewhere. The perspective which can identify and 'match' the feelings as the 'same' is never questioned in 'mirror neuron' research, just as the nature and powers of 'poetic language' are not questioned here. As scientists Pierre Jacob and Marc Jeannerod, for instance, assert even as they critique aspects of mirror neuron theory,

> [o]ne way to question the motor theory of social cognition would be to challenge it to account for the human capacity to read one's own mind or to ascribe false beliefs to others – something that healthy human adults do all the time without effort.[53]

'Healthy humans' are assumed here as 'mind readers' of both themselves and others without question.

It is not coincidental, in this context, that Maude and Fifield both directly reference not only Oliver Sacks, but also the neuroscientist V.S. Ramachandran. Ramanchandran, like Sacks, is well-known in non-scientific circles, not least for the invention of the 'mirror box' to address 'phantom limb' pain (although more recent research has in fact cast doubt on its effectiveness.[54]) Ramachandran relies, as Maude, Fifield, Oppenheim and the Literary Darwinists do, on unquestioned assumptions about the powers of literature, poetic language and the nature of interpersonal communication, including the empathy of 'mirror neurons'. In discussing what distinguishes human language from that of animals, for instance, Ramachandran states that

> [o]nly humans, as far as we know, can use metaphor and analogy [… the male ape's use of metaphor] falls far short of puns or poems, or of Tagore's description of the Taj Mahal as a 'tear drop on the cheek of time'.[55]

This assumption about metaphor in turn underpins research on, for instance, autism, which according to Ramachandran and several other researchers involves having 'difficulty with metaphor'. Linking the difficulty with metaphor to 'mirror neurons' leads further to the suggestion that 'the mirror-neuron system in humans is involved not only in interpreting skilled actions but in understanding action metaphors and, indeed, in other aspects of embodied cognition'. It may be noted that 'embodiment' occurs here also, again understood, much as in Maude's claims quoted previously, to be about 'human thought [being] deeply shaped by its interconnection with the body and by the inherent nature of human sensory and motor processes'.[56] Importantly, the accounts of metaphor here produce the situation, as Amit Pinchevski observes, that 'the variety of characteristics used to describe autism may therefore reveal the medico-clinical-scientific stance […] as intrinsically equating normalcy with effective communication'.[57]

In tracing the way that these claims in literary studies and neuroscience rely on shared liberal beliefs about the object and the subject as the human, language, literature and communication, I have read investments as producing and shaping beliefs about both science and literature. Within this science and literature, however, this is not seen to be about beliefs, but about the truth which will bring the 'new' to both disciplines. I read this 'new' not as new, but as a recapitulation of very old debates which revolve around the status of perspective, objects, science, language and the world. I can, ironically, only make these claims because I read perspective as inevitable and inescapable, in line with prior thinkers such as Lévi-Strauss, Derrida, Haraway, Felman, Judith Butler and Jacqueline Rose, who have not been included in the debates I have read here. I cannot, however, claim the reading of perspective as itself truth, as the objectivity overcoming subjectivity,[58] a separation dissolved into what the philosopher Thomas Nagel called the 'view from nowhere'.[59]

## Notes

1. See, for just some key critiques: Jacques Derrida, *Edmund Husserl's 'Origin of Geometry': An Introduction*, trans. John P. Leavey Jr. (Lincoln: University of Nebraska Press, 1989 [1962]); Shoshana Felman, 'Turning the Screw of Interpretation', in Shoshana Felman (ed.), *Literature and Psychoanalysis; The Question of Reading – Otherwise* (Baltimore, MD: Johns Hopkins University Press, 1982 [1977]), pp. 94–207; Paul De Man, 'The Resistance to Theory', in Paul de Man, *The Resistance to Theory* (Minneapolis: University of Minnesota Press, 1986), pp. 3–20; Slavoj Žižek, *The Sublime Object of Ideology* (London: Verso, 1989); Donna Haraway, *Primate Visions: Gender, Race and Nature in the World of Modern Science* (London: Routledge, 1989); Ludmilla Jordanova, *Sexual Visions: Images of Gender in Science and Medicine Between the Eighteenth and Twentieth Centuries* (Hemel Hempstead: Harvester/Wheatsheaf, and Madison: University of Wisconsin Press, 1989); Jacques Derrida, *Given Time: 1. Counterfeit Money*, trans. Peggy Kamuf (Chicago, IL: The University of Chicago Press, 1992 [1991]); Jan De Vos, *Psychologization and the Subject of Late Modernity* (Houndmills: Palgrave Macmillan, 2013).
2. As Hilary Rose and Steven Rose, for instance, point out,

   > The term [neuroscience] was invented in the late 1960s […] in a deliberate move to bring together the many different ways in which the brain and nervous system were being studied – from neurology, psychology and pharmacology through physiology and anatomy to molecular biology and genetics. (*Genes, Cells and Brains; The Promethean Promises of the New Biology* (London: Verso Books, 2012), p. 251)

   Accordingly, several of these sub-categories are discussed under the wider banner of 'neuroscience' in this article.
3. Claude Lévi-Strauss, *Tristes Tropiques*, trans. John and Doreen Weightman (London: Penguin Books, 1992 [1955]), p. 411.

4. See: Jonathan Kramnick, 'Against Literary Darwinism', *Critical Inquiry*, 37:2 (Winter 2011), pp. 315–47, Jonathan Kramnick, 'Literary Studies and Science: A Reply to My Critics', *Critical Inquiry*, 38:2 (Winter 2012), pp. 431–60, and the responses to Kramnick in the 'Debating Literary Darwinism' issue of *Critical Inquiry*, including Blakey Vermeule, 'Wit and Poetry and Pope, or The Handicap Principle', *Critical Inquiry*, 38:2 (Winter 2012), pp. 426–30 and G. Gabrielle Starr, 'Evolved Reading and the Science(s) of Literary Study: A Response to Jonathan Kramnick', *Critical Inquiry*, 38:2 (Winter 2012), pp. 418–25.
5. Elizabeth Barry (ed.), Special Issue 'Beckett, Language and the Mind', *Journal of Beckett Studies*, 17 (2008).
6. It is significant in this context that the topic of this *Journal of Beckett Studies* subsequently became a UK government funded research project in 2012, through the Arts and Humanities Research Council, entitled 'Beckett and Brain Science', part of the AHRC's wider, thematic funding stream on 'Science and Culture', and involving the editor and several of the contributors to the special issue. See: http://www2.warwick.ac.uk/fac/arts/english/research/currentprojects/beckettandthebrain/.
7. See: http://www.sciculture.ac.uk/about/.
8. This term itself has been the subject of debate, but I use it here with reference specifically to the prior debates in *Critical Inquiry*. See: Kramnick, 'Against Literary Darwinism', Kramnick 'Literary Studies and Science' and the responses to Kramnick in the 'Debating Literary Darwinism' issue of *Critical Inquiry*.
9. 'What is Literary Darwinism? An Interview with Joseph Carroll'. http://neuronarrative.wordpress.com/2009/02/27/what-is-literary-darwinism-an-interview-with-joseph-carroll/ [Date accessed: 29 December 2012].
10. Kramnick, 'Literary Studies and Science', p. 431.
11. Carlo Salzani, 'Review of Joseph Carroll, *Reading Human Nature: Literary Darwinism in Theory and Practice*', *Bryn Mawr Review of Comparative Literature*, 9:2 (Fall 2011). http://www.brynmawr.edu/bmrcl/BMRCLFall2011/Reading%20Human%20Nature,%20Literature%20after%20Darwin.htm [Date accessed: 30 December 2012].
12. As reviewed by Kramnick in his articles in relation to Literary Darwinism's underpinning assumptions; see Kramnick, 'Literary Studies and Science', p. 441.
13. For some critiques of evolutionary psychology from a specifically humanist perspective, see, for instance, Sally Satel and Scott O. Lilienfeld, *Brainwashed: The Seductive Appeal of Mindless Neuroscience* (New York: Basic Civitas Books, 2013); Raymond Tallis, *Aping Mankind: Neuromania, Darwinitis and the Misrepresentation of Humanity* (Durham: Acumen Publishing Ltd, 2011); Cordelia Fine, *Delusions of Gender: The Real Science Behind Sex Differences* (London: Icon Books, 2010); Deena S. Wiesberg, Frank C. Keil, Joshua Goodstein, Elizabeth Rawson and Jeremy R. Gray, 'The Seductive Allure of Neuroscience Explanations', *Journal of Cognitive Neuroscience*, 20:3 (March 2008), pp. 470–7; Maryanne Wolf, *Proust and the Squid: The Story and Science of the Reading Brain* (New York: Icon Books, 2007); Michael Posner (ed.), *Cognitive Neuroscience of Attention* (New York: The Guilford Press, 2004); Jenny Corrigall and Heward Wilkinson, *Revolutionary Connections: Psychotherapy and Neuroscience* (London: Karnac Books, 2003); Margaret Bullowa (ed.), *Before Speech: The Beginning of Interpersonal Communication* (Cambridge: Cambridge University Press, 1979). For another important tradition of critique see the

edited collection by Hilary Rose and Steven Rose, *Alas Poor Darwin: Arguments against Evolutionary Psychology* (London: Vintage, 2001). Finally, for recent scientific critiques, see: Katherine Button, John P.A. Ioannidis, Claire Mokrysz, Brian A. Nosek, Jonathan Flint, Emma S.J. Robinson and Marcus R. Munafò, 'Power Failure: Why Small Sample Size Undermines the Reliability of Neuroscience', *Nature Reviews Neuroscience*, 14 (May 2013), pp. 365–76; Robyn Bluhm, 'Self-fulfilling Prophecies: The Influence of Gender Stereotypes on Functional Neuroimaging Research on Emotion', *Hypatia*, 28:4 (2013), pp. 870–86.

14. I am discussing here the absence of Derrida with reference to the specific debates I focus on here, but my points also apply to previous debates where Derrida *has* been engaged with, where I read Derrida to be misunderstood there in the same ways, and for the same reasons, I analyse here; for an example of this see Ellen Spolsky, 'Darwin and Derrida: Cognitive Literary Theory as a Species of Post-structuralism', *Poetics Today*, 23:1 (Spring 2002), pp. 43–62. The avoidance of deconstructive perspectives in the *Critical Inquiry* debate is, perhaps, all the more marked as the journal was at the time of the debates also advertising its then forthcoming volume *Signature Derrida* (Jay Williams (ed.), *Signature Derrida*, intro. by Françoise Meltzer (Chicago, IL: University of Chicago Press, 2013)) in the following terms:

    > Throughout his long career, Jacques Derrida had a close, collaborative relationship with *Critical Inquiry* and its editors. He saved some of his most important essays for the journal, and he relished the ensuing arguments and polemics that stemmed from the responses to his writing that *Critical Inquiry* encouraged. (http://criticalinquiry.uchicago.edu/signature_derrida [Date accessed: 29 December 2012)

15. Kramnick, 'Literary Studies and Science', p. 433.
16. 'What is Literary Darwinism? An Interview with Joseph Carroll', http://neuronarrative.wordpress.com/2009/02/27/what-is-literary-darwinism-an-interview-with-joseph-carroll/ [Date accessed: 29 December 2012].
17. Vicki Kirby, *Quantum Anthropologies, Life at Large* (Durham, NC: Duke University Press, 2011), p. ix.
18. See for a further discussion of deconstruction and its implications for science: Karín Lesnik-Oberstein, 'Reading Derrida on Mathematics', *Angelaki: Journal of the Theoretical Humanities*, 17:1 (2012), pp. 31–40.
19. Salzani, 'Review of Joseph Carroll, *Reading Human Nature*', quoting from Joseph Carroll, *Reading Human Nature: Literary Darwinism in Theory and Practice* (Albany, NY: State University of New York Press, 2011), p. 78.
20. Kramnick, 'Literary Studies and Science', p. 432.
21. Ibid.
22. Kramnick, 'Literary Studies and Science', p. 433.
23. Starr, 'Evolved Reading', p. 420.
24. Ibid.
25. Vermeule, 'Wit and Poetry and Pope', p. 427.
26. See for key discussions of definitions of psychoanalysis in this context: Felman, 'Turning the Screw of Interpretation' and Jacqueline Rose, *The Case of Peter Pan or: The Impossibility of Children's Fiction* (London: Palgrave Macmillan, 1984).
27. Daniela Caselli, 'Kindergarten Theory: Childhood, Affect, Critical Thought', *Feminist Theory*, 11:3 (2010), pp. 241–54, pp. 243–4. See for another, differing,

critique of 'affect' also: Ruth Leys, '"The Turn to Affect": A Critique', *Critical Inquiry*, 37 (2011), pp. 434–72.

28. Caselli, 'Kindergarten Theory', p. 244.
29. Kramnick, 'Literary Studies and Science', p. 440, quoting from Brian Boyd, 'Getting It All Wrong', in Brian Boyd, Joseph Carroll and Jonathan Gottschall (eds), *Evolution, Literature, and Film: A Reader* (New York: Columbia University Press, 2010), pp. 402–3.
30. Caselli, 'Kindergarten Theory', p. 247, referring to Jacqueline Rose and Juliet Mitchell (eds), *Feminine Sexuality: Jacques Lacan and the école freudienne* (London: Palgrave Macmillan, 1982).
31. Neil Cocks, unpublished manuscript, February 2012 (quoted by kind permission), alluding to Rose, *The Case of Peter Pan*. For Cocks's wider critique of cognitivism, neuroscience and evolutionary psychology see: Neil Cocks, *Student-centred: Education, Freedom and the Idea of Audience* (Ashby-de-la-Zouch: Inkermen Press, 2009).
32. Haraway, *Primate Visions*, p. 350.
33. Ibid., pp. 4–5.
34. Some other well-known examples include: Evelyn Fox-Keller, physicist, Anne Fausto-Sterling, biologist and Ruth Hubbard, biologist.
35. Donna Haraway, *Crystals, Fabrics and Fields: Metaphors that Shape Embryos* (Berkeley: North Atlantic Books, 2004 [1976]).
36. Scott Gilbert, 'Foreword' in Donna Haraway, *Crystals, Fabrics and Fields: Metaphors that Shape Embryos* (Berkeley, CA: North Atlantic Books, 2004 [1976]), pp. xiii–xiv.
37. Kirby, *Quantum Anthropologies*, p. viii.
38. Geoff Bennington, 'Inter', in Martin McQuillan, Graeme Macdonald, Stephen Thomson and Robin Purves (eds), *Post-theory: New Directions in Criticism* (Edinburgh: Edinburgh University Press, 1999), pp. 103–19, p. 103.
39. Elizabeth Barry, 'Introduction: Beckett, Language and the Mind', in Elizabeth Barry (ed.), Special Issue 'Beckett, Language and the Mind', *Journal of Beckett Studies*, 17 (2008), pp. 2–8, p. 7.
40. Kramnick, 'Literary Studies and Science', p. 433.
41. Barry, 'Introduction', p. 3.
42. Ibid., p. 7, referring to Lois Oppenheim, 'A Twenty-first Century Perspective on a Play by Samuel Beckett', in Elizabeth Barry (ed.), Special Issue 'Beckett, Language and the Mind', *Journal of Beckett Studies*, 17 (2008), pp. 187–98.
43. Peter Fifield, 'Beckett, Cotard's Syndrome and the Narrative Patient', in Elizabeth Barry (ed.), Special Issue 'Beckett, Language and the Mind', *Journal of Beckett Studies*, 17 (2008), pp. 169–86, p. 170.
44. Ibid.
45. Kramnick, 'Literary Studies and Science', p. 432.
46. Ulrika Maude, '"A Stirring Beyond Coming and Going": Beckett and Tourette's', in Elizabeth Barry (ed.), Special Issue 'Beckett, Language and the Mind', *Journal of Beckett Studies*, 17 (2008), pp. 154–68, pp. 164–5.
47. Maude, '"A Stirring Beyond Coming and Going"', p. 164.
48. Ibid., p. 155. For another example of a study of Beckett's bodies which also sets out to question but nevertheless reinstates a stable body, see: Anna McMullan, *Performing Embodiment in Samuel Beckett's Drama* (London: Routledge, 2010).

49. Judith Butler, *Bodies That Matter: On the Discursive Limits of 'Sex'* (London: Routledge, 1993), pp. ix–x.
50. Maude, '"A Stirring Beyond Coming and Going"', p. 163, citing: Oliver Sacks, 'Witty Ticcy Ray', in Oliver Sacks, *The Man Who Mistook His Wife for a Hat* (London: Picador, 1985), pp. 87–96, p. 90 and Ronald Schleifer, 'The Poetics of Tourette Syndrome: Language, Neurobiology, and Poetry', *New Literary History*, 32 (2001), pp. 563–84.
51. For an analysis of assumptions about 'poetic language' in relation to language acquisition, literature and children's literature see: Neil Cocks and Karín Lesnik-Oberstein, 'Back to Where We Came From: Evolutionary Psychology and Children's Literature and Media' in Elisabeth Wesseling (ed.), *Reinventing Childhood Nostalgia: Books, Toys and Contemporary Media Culture* (London: Taylor and Francis Group, forthcoming in 2017).
52. Oppenheim, 'A Twenty-first Century Perspective', p. 190.
53. Pierre Jacob and Marc Jeannerod, 'The Motor Theory of Social Cognition: A Critique', *TRENDS in Cognitive Sciences*, 9:1 (2005), pp. 21–5, p. 21. See for a further analysis of the problems with 'mirror neuron' research: Karín Lesnik-Oberstein, 'Motherhood, evolutionary psychology and mirror neurons or: "Grammar is politics by other means"', *Feminist Theory*, 16 (2015), pp. 171–87. Several critiques of the mirror neuron and empathy research make different but complementary points to mine here: see, for instance, Ruth Leys, '"Both of Us Disgusted in My Insula": Mirror Neuron Theory and Emotional Empathy', *Nonsite.org*, 5 (2012), pp. 1–25. http://nonsite.org/article/'both-of-us-disgusted-in-my-insula'-mirror-neuron-theory-and-emotional-empathy [Date accessed: 11 April 2013].
54. A.S. Rothgangel, S.M. Braun, A.J. Beurskens, R.J. Seitz and D.T. Wade, 'The Clinical Aspects of Mirror Therapy in Rehabilitation: A Systematic Review of the Literature', *International Journal of Rehabilitation Research*, 34 (March 2011), pp. 1–13; PMID 21326041 and Melita Giummarra and Lorimer Moseley, 'Phantom Limb Pain and Bodily Awareness: Current Concepts and Future Directions', *Current Opinions in Anesthesiology*, 24 (2011), pp. 524–31. I thank here Dr Martijn Malessy, Professor of Neurosurgery at the University of Leiden Medical Centre, The Netherlands, for discussing with me the latest research on the 'mirror box' and 'mirror neurons'.
55. V.S. Ramachandran, *The Tell-tale Brain: Unlocking the Mystery of Human Nature* (London: Windmill Books, 2011), p. 163.
56. Ibid., p. 143.
57. Amit Pinchevski, *By Way of Interruption: Levinas and the Ethics of Communication* (Pittsburgh, PA: Duquesne University Press, 2005), p. 165. For a discussion of theoretical problems with Pinchevski's analyses in turn see: Helen Ainslie, *Why Autism? Perspectives, Communication, Community*, unpublished PhD thesis, University of Reading, 2009.
58. See on this, for instance, Paul de Man, 'The Resistance to Theory'.
59. Thomas Nagel, *The View from Nowhere* (Oxford: Oxford University Press, 1986).

## Disclosure statement

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