Abstract

This study undertakes a comprehensive examination of neurofiction – a genre of literary fiction which has emerged in response to what scholars have termed neuroculture. Neuroculture refers to the cultural ascendancy of neuroscience witnessed by Anglo-American society over approximately the past thirty years, and the associated predominance of materialist conceptions of consciousness.

By examining works from four authors – *Oblivion* (2004), by David Foster Wallace; *The Echo Maker* (2006), by Richard Powers; *Enduring Love* (1997) and *Saturday* (2005), by Ian McEwan; and *The Sorrows of an American* (2008), by Siri Hustvedt – this work of contemporary cognitive historicism establishes and explores three grounding themes of neurofiction: pessimistic biologism, neuro-introspection, and neuro-intersubjectivity. Pessimistic biologism refers to a demoralizing view of human existence as dispiringly mechanistic and existentially isolated; neuro-introspection refers to the capacity for individual minds/brains to perceive and observe themselves; and neuro-intersubjectivity refers to the capacity for individual minds/brains to engage in forms of communication or empathy with their analogs.

This study demonstrates how these three overarching themes frame and motivate the neurofictional works of my four authors, and how my conception of neurofiction brings into sharper focus other concerns of the genre. These other concerns include the so-called Hard Problem (the disconnect between, and irreconcilability of, objective and subjective accounts of consciousness); the Two Cultures (a perceived epistemological and philosophical clash between scientific and humanistic forms of enquiry); forms of obscured mysticism or spirituality; and the question of the value of fiction in the neurocultural era.
Lay Summary

Over the past thirty years, neuroscience and neuroscientific models of the mind have risen to a position of strong cultural influence. This study examines how four contemporary authors – David Foster Wallace, Richard Powers, Ian McEwan and Siri Hustvedt – have interrogated and analysed this influence in their fiction. This study argues that what binds the way these authors have responded to modern neuroscience (and neuroscientific models of the mind) are three questions: Does the current state of neuroscientific research create a pessimistic picture of human existence; and if so, how should we react? Can an individual consciousness know itself, and to what degree? And can an individual consciousness contact and know other consciousnesses, and to what degree? By asking such questions, neurofiction constitutes a literary response to some of the most significant philosophical and cultural questions of the contemporary era.
Preface

This dissertation is original, unpublished, independent work by the author, Matthew Owen.
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To Jessie,

and to my parents
1. Introduction: Neuroscience, Neuroculture and Neurofiction

Early in Nicole Krauss's 2002 novel, *Man Walks into a Room*, the brain-damaged Samson Greene is examined by a neurologist, Dr. Lavell. Patient and doctor observe Samson's brainwaves together on a screen:

They both watched in silence.
“‘You know what I was thinking just then?’ Samson asked.
“Tell me.”
“I was thinking, what if you could make out exactly what was going on in someone's mind just by watching those spikes.”
“The thoughts themselves? Now *that* would be something.” (31)

This seemingly innocuous passage displays many of the defining features of what Stephen J. Burn dubs a “neurofiction” – a work that “absorbs and carries on a dialogue with the contemporary sciences of mind” (“Neuroscience” 211). We have the “preoccupation with the biologization of the self and the medicalization of the mind” (Waugh, “Naturalistic” 25); the sense of the layperson's alienation from their own cognitive realities; the ubiquity of spookily powerful brain-scanning technologies; the ever-present spectre of the so-called Hard Problem of consciousness. These and other textual features are common to almost all neurofictions, a cluster of novels that has appeared over the past two decades as at once constitutive of, and reactive to, the emergence of what sociologists have termed *neuroculture* – a shift in both the popular and scientific consciousness towards an understanding of human beings as “cerebral subject[s]”, and of human life as defined by “*being*, rather than simply
Neurocultural questions relating to human ontology, the nature of the mind, the role and value of subjective experience, and the secular pursuit of meaning are all topics with which the novel is uniquely positioned to engage.

Neurofiction is an acutely modern phenomenon, reactive to an acutely modern cultural trend. However, amidst the widespread feeling that neuroscience is producing “a radically new view of the human being” (Vidal and Ortega, “Approaching” 9), it is easy to forget the discipline's sheer novelty. Knowledge of the brain remained highly rudimentary for millennia; it wasn't until the Romantic era that the brain was even firmly established as the organ of thought, and it wasn't until the mid-19th century that neuroscience underwent its great formative period (Wickens 111-289). During this period, novels that can be regarded as forerunners of the modern neurofiction emerge.¹ The 1859 publication of Charles Darwin's *On the Origin of Species* laid the foundation for the wider epistemology of the field, and Jean Marie Charcot's neurological research saw him define the neurological syndromes that, decades of (uneven) elaboration and refinement later, frequently animate the Anglo-American neurofiction.²

After some decades of decline in neuroscientific enthusiasm – decades Maurizio Meloni reads within a wider context of modernity's ebb and flow of naturalist and anti-naturalist currents – the 20th century witnessed some of the most influential (and popularised) experimental research in all of modern neuroscience, providing such breakthroughs as the discovery of chemical neurotransmission and refinements in our understanding of hemispheric lateralization and cerebral localization. Nikolas Rose and Joelle M. Abi-Rached relate such research to the widespread emergence of “a neuromolecular style of thought” (41)
in Britain and America during the 1960s, spurred by the 1953 discovery of the molecular structure of DNA. In more recent decades, progress has accelerated exponentially with the rapid development of brain scanning technologies — the latter arguably the defining feature of modern neuroculture, the “major agent for the constitution of the cerebral subject” and source of the field's wildest “mind-reading hopes” (Vidal and Ortega, “Approaching” 13). As Andrew P. Wickens puts it, summarising his extensive history of neuroscience, “more has been learnt about the brain over the last 50 years than in the rest of human history put together” (345). These advances have fed rapidly into the mainstream, with the publications of authors such as Oliver Sacks and Malcolm Gladwell contributing to the way in which the brain has “entered popular culture” (Rose and Abi-Rached 5).

During the 1990s – designated the Decade of the Brain by U.S. President George H. W. Bush, an initiative which spurred “an extraordinary increase in the visibility of neuroscience” (Jones and Mendell 739) – modern examiners of the brain began “pronouncing on areas well beyond their traditional domain” (Waugh, “Science” 68). As late as the 1960s, and in the wake of the dominance of behaviourist models of mind, consciousness had been regarded as “something of a dirty word” (Blackmore 19) amongst neuroscientists. With the ascendance of neuroculture, though, this state of affairs rapidly changed. In Ian McEwan's *Enduring Love* (1997), we witness the protagonist and popular science writer Joe Rose pen “a long and dull review of five books” on consciousness – a topic that was once “proscribed in scientific discourse” but is now “up there with black holes and Darwin” (140). Declaring consciousness “one of the major unsolved problems of modern science” (Crick and Koch 105) and “just about the last surviving mystery” (Dennett,
Consciousness 26), over the last three decades, the full weight of the ascendant and burgeoning cognitive neurosciences have turned their gaze on the question of consciousness.

Many of these neuroscientific attempts at describing consciousness have been strongly physicalist and/or “eliminativist” and/or “internalist” – as seen with (to varying degrees) popular bestsellers by authors such as Daniel Dennett, Steven Pinker, and Patricia and Paul Churchland. Oft-quoted in this context is Francis Crick’s “astonishing hypothesis”: “You, your joys and your sorrows, your memories and ambitions, your sense of personal identity and free will, are in fact no more than the behaviour of a vast assembly of nerve cells and their associated molecules” (3). In recent years, variations on an evolutionarily rooted physicalism have risen to prominence, as have counters to the idea that such reductionisms could offer a satisfactory explanation of mind. The most famous of the objectors has been Thomas Nagel, whose seminal 1974 paper “What is it like to be a bat?” (sharpened by countless subsequent publications) remains the starting point for those wanting to come to terms with what Joseph Levine would later term “the explanatory gap” (354) – the apparent total disconnect between the subjective aspect of consciousness, centred around our first-person experience, and physiological explanations of that experience.

This so-called Hard Problem (a term coined in 1995 by another famous skeptic of physicalism, David Chalmers) represents consciousness studies' white whale, and is a pressing concern of neurofiction. How to account for qualia without straying into a discredited Cartesian dualism? How – to quote the protagonist of what I regard as one of the earliest British works of neurofiction, Edward St. Aubyn's A Clue to the Exit (2000) – to “find a common language with which to negotiate between the dictatorship of science and
the anarchist guerillas of introspection?” (138). The “perspectival problem of qualia⁴ . . .
structures both the form and the content of the contemporary neuronovel” (Gaedtke,
“Cognitive” 184), and many of these works of fiction investigate ways to “submerge readers
in the 'explanatory gap' between the material and the immaterial, or the physical and the
phenomenological” (Tougaw, “Touching” 344).

Whatever the solution to the Hard Problem, in wider culture, the questions posed by
reams of fMRI scans, and much-publicised reductionist accounts of the brain-mind, have
come to dominate the discussion. This domination as it is felt within contemporary (post-
1995) Anglo-American fiction is the subject of this study. I am working from the premise
that these works (and their readers) exist within a neuroculture, a term that encapsulates a
cultural setting in which “notions of the brain as a metonym for identity and self are
becoming widespread” and that takes as a given that “neuroscience partakes in our daily
lives, social practices and intellectual discourses” (Frazzetto and Anker 819, 815).⁵ Within
neuroculture, as Vidal and Ortega put it, “the shaping of a self” occurs partly if not mainly
“on the basis of expert knowledge, an understanding of subjectivity that derives from a
scientific third-person perspective.” In tandem with the “cohabitation of everyday
ontologies . . . individuals shift registers in their ways of acting, experiencing, interacting and
thinking and speaking about themselves” (“Approaching” 17) as a “medical-physicalistic
vocabulary” (“Approaching” 18) comes to dominate mainstream discourse. Thus we exercise
because we want the endorphin rush, meditate because it boosts serotonin production, or read
novels because it promotes empathy by exercising our mirror neurons.⁶ This shift in cultural
vocabulary finds further expression in what Jason Tougaw calls “the 'brain memoir’ – or
autobiographical account of neurological difference, disease, injury, or experience” – a genre he is correct to call neurofiction's “closest living relative” (“Touching” 339). The brain memoir mimics neurofiction in drawing on another major feature of modern neuroculture: the rise of psychopharmacology. Richard Kramer's bestselling Listening to Prozac (1993) obliquely foreshadowes the themes and concerns of neurofiction and the brain memoir when it remarks that “perhaps what Camus's Stranger suffered – his anhedonia, his sense of anomie – was a disorder of serotonin” (296) The “phenomenological exploration of neurological disorders and the neurological discourses through which they are now to be understood” (Gaedtke, “Neuromodernism” 273) is a common theme of neurofiction. Indeed, T. J. Lustig and James Peacock treat the genre as being motivated first and foremost by neurobiological conceptions of mental illness (Diseases). In one of many parallels, this is also a grounding theme of the modern brain memoir. As we shall see, it can sometimes be hard to untangle neurofiction from more non-fictional modes of neurocultural writing.

Whether one agrees that neuroculture is beginning to, or will eventually, “produce an impact on human thinking similar to that produced by Darwinism over 100 years ago” (Mora 7) – and there are certainly reasons to be skeptical (Tallis Aping; Satel and Lilienfeld) – it is certainly having its moment.7 Across popular culture there is a preoccupation with what Mary Midgley disparagingly calls “neuro-everything” (Illusion 12). Neuroscience is the fastest-growing discipline in the modern university, and has exerted a rapid influence on government and public policy (Rose and Abi-Rached 141-234). In 2013, two major and very well-funded initiatives began: the European Human Brain Project (HBP), and the American BRAIN Initiative.8 The strangenesses of the pseudo-religious transhumanist movement –
dedicated to “overcoming aging, cognitive shortcomings, involuntary suffering, and our confinement to planet Earth” (Bostrom 26) – pin some of their highest hopes on the brain sciences. As I compose this study, the market is seeing a steady stream of bestsellers closely concerned with the brain. Thus I accept here that neuroculture and its varied effects are significant, and not going away anytime soon – not in life, and not in literature.

Out of neuroculture emerges neurofiction. Towards the end of the 1990s, as (popular) science caught the increasing general attention of novelists in both Britain and the US, various Anglo-American novelists began to pay close attention to what was being said about the brain, as well as that phenomenon that is at once ontologically fundamental and hard to even define: consciousness. As these novelists absorbed the output of popular works of neuroscience and consciousness studies, their reading was alchemised into their writing, as they “turned their attention to the confounding gap between what we're learning about the physiology of the brain and the various forms of immaterial experience that emerge from it” (Tougaw, “Touching” 337). The authors of neurofiction thus emerged as a group of “contemporary cultural producers . . . addressing a paradigm shift in our understanding of the world and of ourselves” (Lustig and Peacock, Introduction 5). Just as a widespread Victorian fascination with phrenology finds its way into Charlotte Brontë's Jane Eyre (1847); just as Virginia Woolf was pressured (or irked) into responding to Freud's ideas by the sheer intensity of their cultural penetration – so do these authors find themselves compelled to engage with our era's most ascendant theories of being.

Following a small yet “rapid acceleration of critical activity” (Burn, “Neuroscience” 212) over the last fifteen years, neurofiction – most commonly referred to as the neuronovel
(Roth; Tougaw, “Touching”), as well as the fiction of cognition (Freißmann), the neurological novel (Gennero), cognitive realism (Tabbi, Cognitive) and neuronarrative (Johnson) – has emerged as a definable critical category, with a small canon of oft-referenced criticism. The present study establishes the common concerns, motivations and explorations of neurofiction in the hands of four of its most interesting practitioners: David Foster Wallace, Richard Powers, Ian McEwan, and Siri Hustvedt.

I posit here that at its deepest level of framing, neurofiction is concerned with two chief themes: first, an engagement with the spectre of “pessimistic biologism” (Tallis, Aping 4) – a view of human existence as dispiritingly mechanistic, deterministic, and existentially isolated – and the possibility (or not) of counteractive modes of thought. Second, a focus on the nature and/or possibility of what I am here terming neuro-introspection and the related neuro-intersubjectivity – the capacity for minds/brains to look inward and understand themselves, and to look outward and engage in forms of communication and communion. These interlinked ideas at bottom animate all of the fictional works I analyze here.

**Pessimistic Biologism**

“Pessimistic biologism” (Aping 4) is a term I borrow from Raymond Tallis, the fiercest and most dedicated critic of contemporary neuroculture. To use his coinage is not necessarily to align myself with Tallis' acerbic critique of “neuromania” (Aping 5), or his stance that naturalistically-inflected pessimism should be resisted on moral or political grounds – but it is a useful phrase emerging from an accurate framing of modern neuroculture. Tallis frames his unpacking of pessimistic biologism (Aping 1-14; 51-71) within an attack on the
philosopher John Gray, particularly Gray's bestselling *Straw Dogs* (2002). Tallis objects to Gray's “anti-humanism” (3), which he regards as encouraging “spiritual impoverishment and chang[ing] everyday life for the worse” (65). In Tallis' framing, pessimistic biology is the province of “counter-Enlightenment figures” (*Reader* 159) such as Gray, whose publications follow in the footsteps of the “anti-individualistic and anti-humanist works” (*Aping* 156) of Michel Foucault, Sigmund Freud, and others. Notable in Tallis positioning John Gray as a mascot for pessimistic biology is that, as he notes, *Straw Dogs* was “rapturously received” (*Aping* 4), most vocally by prominent British novelists including Will Self and A. S. Byatt – both of whom have been put forward elsewhere as practitioners of neurofiction.

Neurofiction's engagement with contemporary pessimistic biology is a product of wider trends. Neuroculture and the literary offshoot that is one of its many products is spawned by a picture of human reality that, even as it treats the brain as its ultimate instantiation, takes in far more than just our grey matter, far more than only what has happened since the invention of the fMRI. The writers I cover here are deeply aware of what the natural sciences would call their phylogenetic and ontogenetic heritage. They know about the beguiling inexplicability of the so-called Cognitive Revolution, or Upper Palaeolithic Revolution – occurring between 50,000 and 100,000 years ago, and generally regarded as the moment when the human brain established itself as “the only thing in the cosmos capable of consciousness, free will and self-reflection” (Wickens xii), the moment when “history declared its independence from biology” (Harari 37). These authors also write in the shadow of the 1860 discovery of “deep time” – the discovery that the species called *Homo sapiens* has been around for a mere 0.004% of the earth's lifespan, dubbed by Stephen Jay Gould “a
cosmological revolution of Galilean proportions” (qtd. in Smail 1). Modern cosmology, meanwhile, is built on this original revolution, in which Copernicus delivered against humanity the first of what Freud called science's “two great outrages upon its naive self-love”: the news that “our earth was not the center of the universe, but only a tiny speck in a world-system of a magnitude hardly conceivable” (qtd. in Ayala 20). The second of these outrages, so crucial to the present study, was of course the 1859 publication of Charles Darwin's *On the Origin of Species*, which, again quoting Freud, “robbed man of his peculiar privilege of having been specially created, and relegated him to a descent from the animal world” (qtd. in Ayala 20).

The accumulated effect of the entirety of modern human scientific knowledge forms the philosophical backdrop, the sort of ontological *mise-en-scène*, for neurofiction. When Joseph Dewey writes that Powers is acutely aware that he plies his trade in an era “bent on diminishing the individual amid a colossus of forces whirring about a universe far bigger and emptier than the mind can conceive” (14), he is referring to the totality of scientific knowledge outlined above, a combination of “big history” and our overhauled image of the human animal. These ideas have been translated in works of popular science into a strange mingling of awe and encroaching nihilism, an almost sadomasochistic tone we see adopted by the popular science authors Richard Dawkins and Steven Weinberg when in the same breath they marvel at the “wonder” of the universe and declare that it contains “nothing but blind, pitiless indifference” (Dawkins, *River* 133) and is “overwhelmingly hostile” (Weinberg 154). Neuroculture, despite the specificity of its name, encompasses this much wider framework of beliefs and ideas; it loops in all of what Wallace calls the “million
Copernican Revolutions” which in the modern age seem to be “all happening at the same time” (Wallace, Everything 22).

What is unique about contemporary pessimistic biologism is its engagement with the modern brain sciences. The pessimism it interrogates is not only “Darwinian-inspired” (as it was for Victorian authors such as George Eliot and Thomas Hardy) – it draws on the “rise and rise of brain science as a source of the apparent explanation of every aspect of human life” (Tallis, Aping 5). The idea that “our love for our children is evolutionarily preprogrammed” coexists with the notion that “our thoughts and feelings are really just chemical transfers in 2.8 pounds of electrified pâté” (Wallace, Everything 22).

“The cosmological vertigo induced by the work of Darwin and other Victorian scientists” (Wright 1) is widely understood. It is fairly obvious why Darwinism as a system of thought is so compatible with nihilism or pessimism and how it “puts the capstone on a process which since Newton’s time has driven teleology to the explanatory sidelines” (Sommers and Rosenberg 653). What neuroculture adds to this picture are strong interventions into ideas regarding consciousness, selfhood, agency, identity, free will, and much else. One of my grounding arguments here is that – contrary to being any sort of light engagement with diverting intellectual challenges such as the Hard Problem – neurofiction represents an impassioned engagement with what Slavoj Žižek calls “the unbearable lightness of being no-one” (Parallax 145). Put simply, materialist theories of mind render concepts such as the self (not to mention the soul) problematic, if not untenable. Says the general consensus: Conscious experience might give us the impression of possessing some sort of core and enduring self, something like Kant’s Transcendental Ego – but in fact the self
has no fixed or essential quality and is entirely dependant on fragile configurations of matter. We might feel as though there is something essential about us, but the “I” is merely (to give a few examples from the popular science) “a center of narrative gravity” around which memories and information orbit (Dennett, “The Self” 103); an “autobiographical self” (Damasio, *Feeling* 134) that is but a phenomenological consequence of the movements of our limbic systems and deeper structures of mind; or a limited “ego tunnel” akin to a brain-conjured internal simulation which is in fact an impoverished representation of external reality (Metzinger, *Ego* 6).

It is not my intention here to engage deeply with (less still intervene in) fiendishly complicated debates about the nature of consciousness – a task to which entire careers are dedicated. It is important, though, to get a sense of the general picture – various vigorous and ongoing debates within the academic neurosciences notwithstanding. Despite it being “well-established that in many times and places, most if not all people would find the notion of a material mind, or a mind identified with the brain, counterintuitive or even shocking,” and despite the fact that “even today, many Americans, probably a majority of them, believe in some kind of disembodied mind- or soul- or spirit- stuff” (Richardson, *Neural* 13), to modern neuroscience, anything resembling Cartesian dualism is simply indefensible. As Antonio Damasio's groundbreaking *Descartes' Error* laid out, there is no disembodied free-floating cerebral reason, or indeed disembodied anything. The self is an indeterminate and shifting entity, a sort of lifelong hallucination, forever in flux as a result of ever-shifting material conditions (Baggini). Selfhood is a socially conjured illusion (Hood), the result of an involuntary and highly selective translation of material processes into subjective
awareness which leaves most of cognition inaccessible to consciousness (Nørretranders, Wilson). To continue to paraphrase: Phenomenological life is a jury-rigged offshoot of the much bigger unconscious, and – echoing David Hume, whose remarks on the matter are oft-referenced by contemporary neuroscientists – all that is really present are cascades of sensation and involuntary thought that deceptively coalesce into something unified. Contrary to Descartes' suggestion that the tiny pineal gland was the seat of the soul, there is no specific self lobe, nor could there possibly be one – the erroneous impression of some sort of central experiencer is actually the result of processes networked across various interlinked regions in a brain. The “idea of the mind as simply the neuro-transmissions of the brain” means that “I am instead simply a body extended into a nervous system that helps me survive through the illusion of a self” (Waugh, “Naturalistic” 17, 19). Indeed, the self is a distraction that blinds us to how hard it is to even meaningfully differentiate ourselves from other creatures (de Waal), and one can make a case that human conscious life is a unique curse, a special burden (Leary). In the neurocultural picture, human exceptionalism may well be more curse than blessing.

Perhaps most troublingly (and contentiously) of all, modern materialist theories of mind seem to leave very little room for free will; as Tallis (Aping) notes, a defining feature of pessimistic biologism is the idea that “neuroscience and Darwinism have added weight to traditional determinism . . . they have demonstrated that we are either not as free as we thought or that we are not free at all” (52) (see Sam Harris's Free Will for a concise and popular summary). Investigations such as Benjamin Libet's famous (and contentious) experiments update the famous Victorian materialist Thomas Huxley's conception of humans
as conscious automata for the age of the brain scanner. A character within the meta-novel in St. Aubyn's neurofiction *A Clue to the Exit* muses sardonically, that “what characterized the twentieth century . . . was the way in which thoughts, behaviour and communication had been set adrift from the intentions of the person making them” – with the biggest offender being what he calls “evo-babble” (133-134). Alan Richardson's notion that in the Romantic period “new materialist and naturalistic models of mind” implicitly “challenge the social order” (Richardson, *British Romanticism* 2) has parallels today. Without any belief in the reality of intention, what of criminal and legal responsibility? What of meritocracy? Creativity? This is what David Lodge is talking about when he refers to neuroscience's “strong challenge to the humanist or Enlightenment idea of man on which the presentation of character in the novel is based” (*Consciousness* 2). How can we reconcile such an impoverished view of interiority with the notion that literature is, as the English novelist Owen Barfield had it, carrier of “the inner, living history of man’s soul” (qtd. in Edwards 226)? As Ben Jeffery – in a study of the French neurofiction author, Michel Houellebecq – puts it: “Rather than simply dispel our illusions, at some root level materialism seems to only inform us that we have illusions, but leaves them in place. Subjectivity is left stranded; a bewildered, stupid thing, untuned to itself or the world” (71-72).

The dispiriting implications of the modern neuroscientific vision were picked up early by the novelist Tom Wolfe, who in 1996 wrote that “the sudden switch from a belief in Nurture, in the form of social conditioning, to Nature, in the form of genetics and brain physiology, is the great intellectual event, to borrow Nietzsche's term, of the late twentieth century.” Wolfe's article remains instructive; I would bookend it with a final framing of the
sources and shape of pessimistic biologism offered by the prominent American horror author Thomas Ligotti. Ligotti's *The Conspiracy Against the Human Race* (2010) draws heavily on the same works of popular science that so influence contemporary neuroculture (notably Thomas Metzinger) to produce a pessimistic, anti-natalist philosophical tract that makes its guiding influences (Peter Wessel Zapffe, Arthur Schopenhauer) sound positively cheery. Containing hundreds of references to consciousness and the brain, the work analyses “a single, calamitous event: the evolution of consciousness – parent of all horrors” (15). “We are gene-copying bio-robots,” writes Ligotti, “living out here on a lonely planet in a cold and empty physical universe” (110). “This is the tragedy: Consciousness has forced us into the paradoxical position of striving to be unself-conscious of what we are – hunks of spoiling flesh on disintegrating bones” (83). And so on. Ligotti’s vision – which finds softer fictional expression in Wallace’s *Oblivion*, as I explore in Chapter 1 – is the finest complete statement of pessimistic biologism, that spectre haunting neurofiction.

**Neuro-introspection and Neuro-intersubjectivity**

One feature of pessimistic biologism is related to the general awareness that “the Scientific Revolution has not been a revolution of knowledge; it has been above all a revolution of ignorance” (Harari 279). Nowhere is this ignorance more apparent than in relation to human psychology. “One of the great lessons of the cognitive revolution,” writes Richardson, “has been just how much of mental life remains closed to introspection” (*Neural* 14). The neurofictions I feature here consistently interrogate this “great lesson,” asking: Knowing what we now know about the brain, how much insight can I really have? Is that ancient
maxim, *know thyself*, in fact an impossible task?

I will be using *neuro-introspection* here to refer to the concept and/or possibility of introspection – defined by the OED as “the action of looking within, or into one's own mind; examination or observation of one's own thoughts, feelings, or mental state” – in light of the general picture of the brain subscribed to by the authors I study here, and in turn their neuroscientifically-informed characters. With Henry Perowne, neuroscientifically literate protagonist of McEwan's *Saturday* (2005), we see attempts to analyse an unusual midnight alertness which combines introspective commentary with the jarring opaqueness of technical jargon:

> he wonders about this sustained, distorting euphoria. Perhaps down at the molecular level there's been a chemical accident while he slept – something like a spilled tray of drinks, prompting dopamine-like receptors to initiate a kindly cascade of intracellular events; or it's the prospect of a Saturday, or the paradoxical consequence of extreme tiredness. (5)

For Perowne, *euphoria, tiredness* – first-person, self-reported states of mind – mingle awkwardly with the analytical medicalalese of *dopamine* and *intracellular events*. His strange euphoria being related to the “prospect of a Saturday” might be an insight he can reach on his own. But if that euphoria is a chemical accident, then no amount of introspection could confirm it; only a brain-scanner could do that. This tension between insight and the impossibility of insight – how the modern brain sciences inform what we can and cannot know via the powers of our own mind – runs throughout the works of fiction studied here. A fear that we are “strangers to ourselves” (Wilson 1) animates the neurohorror of Wallace's
Oblivion. A sense of subjective untetheredness fuels the identity crisis suffered by Gerald Weber in Powers' *The Echo Maker*. By contrast, the belief that in the company of a (neuro)psychoanalyst (and an author-figure whose role mimics that analyst) we might comprehend our own mental states with new clarity informs the hopeful vision of connectivity in Hustvedt's *The Sorrows of an American* (2009).

Closely linked to this notion of *neuro-introspection* is what I am calling *neuro-intersubjectivity*. Intersubjectivity (defined by the OED as “existing between conscious minds”) is something of an over-burdened term, having specific and differentiated meanings within various disciplines and taking weaker and stronger forms. I recruit the term here in a general sense to refer to the ability of one human consciousness to reach, connect with, reveal itself to – in some sense *know* – another human consciousness; the capacity for two “cerebral subject[s]” (Ortega and Vidal, “Mapping” 13) to evade a form of *neuro-solipsism* and share a common psychic space. As with *neuro-introspection*, the prefix *neuro-* denotes that for this study, the nature and possibility of such intersubjective communication takes place, once again, in light of the general picture of the brain subscribed to by the authors I study here, and in turn their neuroscientifically-informed characters. Tougaw examines three neurofictions (including *Saturday*) which present “touching another person's brain” as “a fantasy of connecting: finding empathy, sharing feelings, exchanging affect, and blending each other's stories” (“Touching” 353). However, I posit that many neurofictions are less concerned with this high bar, and instead strive to describe a much more generalised possibility of connection. A potential double-failure – in which brains can neither effectively introspect nor meaningfully connect – produces a mode of pessimistic biologism that Jeffery
calls “flattening”:

subjective consciousness is squished between the material barrier separating our inner
life from those of others, and the inferential awareness that this inner life is itself the
product of a hard-wiring that we are subjectively blind to. (35-36)

Against the menace of this flattening – so brilliantly, tragically depicted in Wallace's
Oblivion – is the hope offered by McEwan, and, more complexly, Powers and Hustvedt: that
the individual human mind can perceive itself, and can, at moments, access its analogs.
These intersecting phenomenological processes of perceiving and encountering the brain-
mind(s) are concepts around which the attention of all neurofiction coalesces.

Two Cultures?

In Powers' Galatea 2.2, the caustic cognitive scientist Lentz believes there to be little he can
learn from the humanities. At one point, he asks sneeringly of the humanist and author,
Richard Powers, “What passes for knowledge in your so-called discipline?” (43). Henry
Perowne, the neuroscientist protagonist of McEwan's Saturday, is “unmoved” by Anna
Karenina, Madame Bovary, and other “sophisticated fairy stories” (67). It “interests him less
to have the world reinvented,” we are told, “he wants it explained . . . Why make things up?”
(66). Scenes such as these are representative of how neurofiction frequently revives and
explores an old debate about and between the so-called Two Cultures. It is no coincidence
that two leading authors of neurofiction are also what Patricia Waugh calls “the doyens of
the neuroscientific 'two cultures' novel” (Waugh, “Naturalistic” 25). Neurofictions thematise neuroscience, but they also thematise science, writ large – and the relationship(s) between science and more humanistic modes of knowing, of which fiction-writing is one example.

That the Two Cultures debate emerges as a key theme of neurofiction is a result of the genre's intellectual moment. The massive sociocultural cachet that science has acquired over the past two or three decades has fed the widespread rise of what Charles Taylor calls “subtraction stories” (22) – interpretations of history in which humanity, by sloughing off pre-scientific beliefs, moves on an inexorable upward journey from primitive superstition towards the bright light of reason. These subtraction stories are implicitly or explicitly invoked by all of the texts I study here. (Not least because they are on strong show in much modern popular science writing, with which neurofiction is genealogically entangled [see Gaedtke, “Neuromodernism”].) This ascent of science is partly responsible for “growing humanist self-doubt in the face of a rapidly shifting balance of symbolic power between the disciplines” (184) – a self-doubt that Frank Kelleter sees as a primary cause of the emergence of neurofiction's scholarly counterpart, cognitive literary studies. This self-doubt emerges in both realms, creative and critical. Both of the two earliest neurofictions – Powers' *Galatea 2.2* (1995) and Lodge's *Thinks...* (2001) – explore the Two Cultures in a very direct, meeting-of-faculty-minds fashion. These novels make explicit the way that neurofictions feel “threatened by the potential resolution of the problem of epistemology on scientific terms and the extent to which the scientific community is . . . skeptical about the knowledge value of literature” (Johnson 182). This sense of threat is only sharpened by what Joseph Tabbi, in his ambitious study of cognitive fictions, has called “fiction's intensifying struggle to define
its own representational space in a culture whose self-knowledge is created, increasingly, through non-literary media” (Cognitive 79).

One of my grounding ideas here is that the Hard Problem, so central to the thematic landscape of neurofiction, in certain senses is the Two Cultures problem. I follow Edward Slingerland in assuming that the rationale behind the academic humanities-science split stems from a culture-nature divide with “its roots in a dualistic model of the human being” spawned by “a universal human intuition at least as old as Homo sapiens” (3). This intuition is what Paul Bloom has dubbed “commonsense dualism” (xiv), and its apparently universal embeddedness in human cognition helps explain why Waugh can remark that “it is arguable that no culture has been without its version of the [Two Cultures] debate,” and can trace the debate's outlines all the way back to Aristotle's delineation between “exact” and “inexact” forms of knowledge (“Revising” 33). This intuitive dualistic framework underpins the Two Cultures friction, and today it superimposes its framework over the intellectual domain, formulating humanistic study as dealing with the soul, and the natural sciences as dealing with matter. The strict anti-dualism of modern neuroscience, meanwhile, is the impetus for both critical (cognitive literary studies) and creative (neurofiction) explorations of what it might mean to map all of life onto a biological-materialist paradigm. The Two Cultures paradigm dovetails with the Hard Problem because both orbit around the deep tension between privileging objective and subjective versions of knowledge. In more localized fashions, the Two Cultures clash was manifest in the so-called Science Wars of the 1990s, as well as the tensions between psychoanalysis and neuroscience which are of such interest to Siri Hustvedt.19 The tension in both of these disciplinary arguments was and is between
scientific reasoning and various forms of social constructivism (and linguistic determinism) – but the basic tension was the same, and correlated once again with the ontological and epistemological contours of the Hard Problem.

Of course, both authors and their critics have good reason to be wary of the pronouncements of the physical sciences, and this wariness is palpable in neurofictions. Scientists' public statements have sociopolitical implications, and the naturalistic fallacy can be dangerous. The shadow of scientifically triumphalist travesties such as phrenology and Nazi eugenics looms large, and as Daniel Dennett concedes, Darwinism in particular “has always had an unfortunate power to attract the most unwelcome enthusiasts” (Darwin's 264). The sexist suggestibility of an oversimplified “evolutionary fable with its perpetually tumescent male and shrinking female” (Hustvedt, A Woman 182) should be resisted, and the humanities have good reason to be wary of neo-naturalist approaches to literature, the results of which can be truly dire. Witness the following, from the glib Madame Bovary’s Ovaries: “Females are egg makers; males, sperm squirters. The truly important thing about Othello wasn’t the color of his skin, his age or his war record. Rather, Othello was all about sperm; Desdemona, eggs” (Barash and Barash 15).

However, while the literary academy has in recent times been reflexively resistant to scientific models, neurofiction authors approach the Two Cultures debate with a refreshing openness to a sort of non-territorial interdisciplinarity. They are, like “the reading public . . . fully aware of, and largely sympathetic to, the neuroscientific and genetic revolutions of the 1990s” (Smail 10). I suspect that a minority of academic scholars would undertake a “neuroaesthetic” reading of the poetry of John Donne – but A. S. Byatt has recently
published precisely such a reading in *The Cambridge Companion to John Donne*. Certainly most literary scholars would be wary of following McEwan in contributing to an essay collection exploring so-called literary Darwinism, and declaring that “if one reads accounts of the systematic nonintrusive observations of troops of bonobo, one sees rehearsed all the major themes of the English nineteenth-century novel” (“Literature” 11). Neurofiction's keenness to engage with both sides of the Two Cultures debate is of more than just academic interest. The genre seems to partly refute what Waugh calls the “commonplace insight” that “the theme of all modern literature since Romanticism has been its quarrel with modernity” (*Harvest* 22). Engaging with the technical language of the brain sciences might still be a rarity within academic literary study (cognitive literary studies remains a niche sub-discipline), but it is the norm with the novelists I cover here. This is an example of a feature of the modern literary scene which Waugh, prefacing her discussion of Lodge's *Thinks*..., identifies at some length:

since the Snow-Leavis debate, literary culture has itself divided . . . Far from representing an homogenous cultural group (criticism largely conceived as the handmaid to literature), there is probably more of a stand-off between novelists and academic literary criticism than there is between novelists and contemporary scientists . . . The two cultures debate since the 1990s has bifurcated. On the one hand, it has become a much more narrowly focused 'turf war' between academic scientists and literary intellectuals . . . On the other hand, when one moves outside the academy, the debate is more genuinely open and Socratic, less defensive and certainly more temperate in tone. (“Science” 73)

In other words, neurofiction represents broader trends within literary culture,
including a perceived disconnect between novelists and critics that some believe has intensified over the past few decades and the way in which “academia . . . lags far behind the novel, which is now part of a transparently public discourse” (Bradford 247). Beyond Kelleter’s glum vision of humanist self-doubt lingers a more equanimous sense, expressed by all authors of neurofiction, that disciplinary knowledge is too divided, and that the Two Cultures need to talk to one another. As Siri Hustvedt puts it:

> The old separation of body and mind, psyche and soma continues to haunt us. This is a root issue . . . Rampant philosophical naiveté in the so-called hard sciences and total ignorance of the biological body (as opposed to a constructed ideological one) in the humanities has created two deep but narrow ditches stretching to nowhere. (qtd. in Rippl 28)

Following Hustvedt’s logic, while the post-structuralism which has so influenced academic humanities over the last few decades was seen as a riposte to dangerous biological determinisms, neurofiction pushes back against strongly social constructivist views of human nature, accepting the basic principle that a universal biological substrate underlies human experience. The authors of the works of fiction I feature here function like the peacemakers of the Science Wars. All four novelists in the present study accept that people's minds “share a rich and robust universal structure, which is why we can even begin to understand the products of other human minds” (Slingerland 303). Equally, these authors stress the ways in which biology and culture are in constant negotiation – that any given aspect of biology has no instantiation, no existence, other than via its interaction with a cultured reality. Neurofiction is keenly aware that, in the overused metaphor of the day, the brain is plastic –
and that, *pace* any popular scientism, what science demonstrates is the degree to which “organisms are built by the interactions of genes, environment, and random developmental noise, to the point where there can be no nature without nurture and vice versa, as every right-thinking observer has long suspected anyway” (Smail 118-119).

As neurofiction gropes after literary ways to engage with the vexations of the explanatory gap, they automatically explore the possibility of a *rapprochement* between the Two Cultures. These are works of fiction serious about self-consciously evaluating their own worth and wondering how their role relates to that of the natural sciences. By exploring contemporary conceptions of consciousness, they cannot help but also explore relations between scientific and literary modes of knowledge-formulation, the borders of which are being continually renegotiated in the era of neuroculture.

**A (Dis)Enchanted World**

Neurofiction thus exists in a fruitful tension with the contemporary scientific picture: it is fascinated by it, *believes* it, wants to engage with it – yet it cannot help but notice how easily it translates into pessimistic biologism and threatens the potential for neuro-introspection and neuro-intersubjectivity. Even as they are dazzled by (neuro)scientific discovery, authors of neurofiction know that the genre exists within the *longue durée* of a scientifically-driven atmosphere of cultural-spiritual estrangement, or what Max Weber famously described as the disenchantment of the world. This is why the Two Cultures debate continues to be a vexing one, and why a doubled relationship with science animates the genre. As Christopher Potter explores, the idea that “all that there is can be reduced to particles” (61) can be seen to split
the history of ontological thinking

into two teams. . . . Richard Dawkins (captain), Daniel Dennett, Dr. Johnson, Thomas Jefferson, Lucretius, Stephen Hawking, Aristotle, David Attenborough and Thomas Huxley are on one side. Marcel Proust, Leo Tolstoy, William James (captain), Marilynne Robinson, John Keats, Rowan Williams, Karen Armstrong, Plato, William Blake and Emily Dickinson on the other. (7)

Not for nothing is the first “team” made up of prominent atheists, while the second team – the team dissatisfied or unnerved by the explanation that all of existence “can be reduced to particles” (61) – is populated by writers and religious figures. Thinkers “from Kierkegaard to early 20th century Marxists, from Heidegger to Hannah Arendt, from the late Husserl to existentialism, have seen in modern science itself a major threat to an authentic knowledge of the human, and argued that the triumph of the natural sciences excluded a more genuine and comprehensive access to the human experience” (Meloni 109). The versions of these arguments coming from the literary and the religious angles have often sounded strikingly similar.

Exhibit A: In 2015, Tom Stoppard, arguably the pre-eminent living British playwright, staged The Hard Problem. What we might call a neuro-play – another example being Lucy Prebble's The Effect – The Hard Problem follows The Echo Maker and Thinks... in dramatising a clash between a humanist and a scientist that is simultaneously romantic and intellectual, and that facilitates a layman's tour of the current field of consciousness studies. Hilary argues constantly with Spike, a card-carrying materialist, reiterating that “nobody's got anywhere trying to show how the brain is conscious” (23) and that “the study of the mind
is not a science” (37). Hilary sets out to prove that humans have the capacity for real (ie. non-self-interested) altruism (as displayed, in her example, by the character of Rose of Sharon at the close of Steinbeck's *Grapes of Wrath*). Privately, Hilary believes that this altruism suggests the existence of an immaterial, “overall moral intelligence” (51). Her experiment falls apart, despite suggesting tantalisingly that it might have been a success, and at the end of the play Hilary transfers from the cognitive psychology laboratory to the philosophy department.

Stoppard's play is a particularly acute and concise example of a wider truth about works of neurofiction: They often can't help but stray into talking about (or talking around) such things as the potentially mystical or transcendent value of the human spirit, and how this intersects with ideas of meaning, God, belief, and faith. “With the mind-body problem,” insists Hilary, “the God idea shoves itself to the front like a doctor at the scene of an accident, because when you come right down to it, the body is made of things, and things don't have thoughts” (12). Charles Taylor explores how, in the popular view, “the decline of Christian belief” is often tied partly to “neuro-physiological explanations of mental functioning” (4), as “naturalistic materialism . . . presents itself as the only view compatible with the most prestigious institution of the modern world, viz., science” (28). We should recall that Baruch Spinoza's anti-Cartesian substance monism saw him “universally condemned as an atheist” (Meehan 24) for a century. The early (and highly misguided) cerebral localization work of Franz Gall (1758-1828) was suppressed by the Roman Catholic church for being materialist and thus encouraging of atheism. In that greatest document of the verities of spiritual belief, Fyodor Dostoevsky's *The Brothers Karamazov* (1880), Dmitri
Karamazov describes how recent science has revealed “nerves in the brain” with “these little sorts of tails” (589) that tremble, “and that's why I contemplate, and then think . . . because of the little tails, and not at all because I have a soul or am some sort of image and likeness, that's all foolishness” (589). These discoveries, Dmitri says, make him feel “sorry for God” (588).

I posit here that the outlook and philosophical underpinnings of modern neuroscience mirror that of atheism – that modern brain science inherently produces the closed version of Taylor’s “immanent frame” (542). And for authors of neurofiction, threats to religious or spiritual belief often similarly imperil literature's broad commitment to a conception of the human perspective as special, valuable, even something like sacred. The slow, Nietzschean death of God which inspired such existential enquiries in the thinkers surveyed by Julian Young inspires similar effects in the work of the authors surveyed here. Burn writes that, within “second-generation” neurofictions (such as those covered here), there is often on display a distinctly post-postmodern “deep metaphysical ache . . . a yearning to achieve some transcendent spiritual meaning presumed to be absent from the postmodern world” (“Mapping” 45). Despite all the pronouncements of neuroscience, these works, in Burn's view, feature “the stubborn persistence of the idea of a soul” (47). This “idea of the soul acts as a placeholder for science to merge with a persistent mysticism,” an infusing of “the specialized languages of contemporary science” with “the lingering power of spirituality” (47).

The slipperiness of Burn's terms – a mere idea, which somewhat tentatively lingers, with a vaguely mystic and spiritual feel to it – speaks to how difficult these ideas are to pin
down. However, the crossover between spiritual belief and something like literary belief is impossible to deny. The disenchantment of the world threatens both, and in either case, the rise of what the Frankfurt School termed *instrumental reason* provides cold comfort.

Neurofiction exists in an era during which, according to John Gray, “the Gnostic faith that knowledge can give humans a freedom no other creature can possess has become the predominant religion” (Gray, *Soul* 9). As Terry Eagleton has suggested, one can read modern scientistic atheism as driven by “replacing a transcendent God with an omnipotent humanity,” a shift that means that “humanism will always be secretly theological” (*Reason* 15). These ideas crop up in neurofictions with every reference to artificial intelligence, or gene editing, or the transcendent promises of transhumanism. But there is the sense that any new pseudo-faith of scientism doesn't quite satisfy, that what neurofictions pursue is something less technological, perhaps more old-fashioned. In their engagement with pessimistic biologism, and their exploration of the idea/possibility of a humanistic knowing in the forms of neuro-introspection and neuro-intersubjectivity, contemporary neurofictions are centrally concerned with *subjective* categories of *meaning* – they are driven by the fact that, as Siri Hustvedt puts it “the experience of living in my own head has a magical quality” (*Shaking* 14) and the intuition that “consciousness . . . is inexplicable” (*What I Loved* 233).

How spiritualised forms of belief dovetail with literary creation in a scientific age is a vast subject, taken up by works such as John McClure's *Partial Faiths* (2007) and Amy Hungerford's *Postmodern Belief* (2010). Suffice to say that, to most authors of neurofiction, there is something about mechanistic atheism which threatens – or at least threatens to reframe their understanding of – their craft. James Wood's exploration of how “the difference
between literary belief and religious belief” was “an excruciation” for Melville, Gogol, Flaubert and others (Broken xxii) resonates here. The troubled, tortured, searching atheisms of Albert Camus, Thomas Bernhard, Iris Murdoch, Samuel Beckett and others all seek to formulate a role for writing as a constituent of something better than nihilism – so it is with many of the authors who have turned their hand to neurofiction. A touchstone here is Patrick Colm Hogan's breezily-titled “Literature, God, and the Unbearable Solitude of Consciousness.” The “utter and unbreachable isolation” (117) of subjective experience is, in Hogan's view, the condition of being that both literary and religious experiences seek to ameliorate. Echoing some of Wallace's remarks, he writes that the cosmic solitude of consciousness is central to both human life and to art . . . A great deal of culture – especially aspects of culture that overlap with religion – operates to help us cope with . . . the pain that is a necessary result of consciousness or, more exactly, the isolation that is a part of consciousness and the pain that results from self-consciousness. Literature has a particularly prominent place in this ‘management.’ (119)

Anticipating Burn's notion that modern neurofictions often foreground “the stubborn persistence of the idea of a soul” (“Mapping” 47), Hogan states that “to be human is also to be ineffable” (118). Similar to the way that “divine omniscience provides a guarantee that we are never alone . . . that what is most private to us not only may be but actually is shared” (135), “literature occludes our isolation” (138) by the way it allows us “to imagine that even now we are not alone, that we not only can but do share our memories and our feelings with one another” (140). Marilynne Robinson identifies correctly that, now and always, a fierce
attack on religion almost axiomatically requires a concurrent attack on subjectivity (36). As she puts it, “subjectivity is the ancient haunt of piety and reverence and long, long thoughts” (35) – thoughts, we can add, both artistic and spiritual. This line of thinking evokes that of William James and Søren Kierkegaard – thinkers admired by Wallace and Hustvedt.

**A View From Somewhere?**

In my reading, then, part of neurofiction's engagement with neuro-intersubjectivity relates to a general notion of literature as striving to connect minds (or the narratives of which minds are composed). In expressing such a stance, works of neurofiction often assert the primacy and irreducibility of consciousness. This basic insistence on there being something inherently valuable about the human perspective is one of the points upon which the broadly spiritual and literary vantage points concur. If the contemporary scientific account of consciousness can be seen as a late stage in “the history of science, which is that of . . . a gradual shedding of perspective, a journey towards [Thomas] Nagel's 'view from nowhere’” (Tallis, *Aping* 142), then many neurofictions advocate for a view from somewhere. As the analysis of Chapter 3 shows, even McEwan – who ostensibly argues for a materialist conception of mind – runs into deep conceptual trouble in accounting for human subjectivity within a literary framework.

My first chapter, on David Foster Wallace's *Oblivion*, outlines the shape of a neurofiction crafted in acquiescence to a vision of pessimistic neuro-biologism. In a sense, Wallace's work represents the challenge that many other works of neurofiction attempt to overcome. In varying ways, McEwan's, Powers' and (especially) Hustvedt's novels are of a
piece with a resistance to physicalist accounts of mind epitomised by recent work by
Midgley and Robinson. Robinson's Absence of Mind: The Dispelling of Inwardness from the
Modern Myth of the Self (2010) defends “the great paradox and privilege of human selfhood,
a privilege foreclosed when the mind is trivialized or thought to be discredited” (xviii). The self, writes Robinson, “the solitary, perceiving and interpreting locus of anything that can be called experience” (10), “the felt life of the mind” (35), needs urgent defending. Robinson objects to what she calls materialism's “hermeneutics of condescension” (14), detectable throughout the “parascientific” (35) popular accounts of cognition and selfhood. Midgley's Are You an Illusion? (2014) is of a piece with Robinson's work, answering in the negative to its title question and declaring that “subjectivity . . . is not an irrelevance . . . It is the basic stuff of experience” (56). “The gap between our inner and outer views of the world,”
Midgley writes,

is indeed a real one. These two ways of confronting it are as distinct as the two main ways by which we perceive the physical things around us: sight and touch . . . their differences are sometimes important and we should not assume that one of them is always right. (114)

For Midgley, “selficide” is tied into the overthrowing of both religious and subjective meaning, and she invokes Thomas Nagel, referencing his loosely panpsychic view that “the possibility of the development of conscious organisms must have been built into the world from the beginning” (88). Midgley's and Robinson's philosophical opposition to reductionist accounts of consciousness (and the overreach of the neurosciences more generally) dovetail with various other scientific or political accounts.24
Like the better parts of cognitive literary scholarship, neurofiction frequently iterates Frank Kelleter's argument against “a misguided conception of literary and cultural activity as something that essentially occurs in human beings, in their bodies and brains, as opposed to something that is an act of human beings, for which they make use of their bodies and brains, acting on and contributing to their self-created environments” (Kelleter 176). There is a certain restating here of a common-sense ontology set against the apparently eliminative insights provided by printouts of brain scans. Often these texts make a case for – strive to be in and of themselves the evidence of – “the distinctive features of human beings – self-hood, free will, that collective space called the human world, the sense that we lead our lives rather than simply live them as organisms do” (Tallis, Aping 8). In less technical language, these texts exhibit how “without experiential subjectivity and meanings, there is nothing into which we may translate the neurobiological events” (Hogan, “Literature” 124). Authors of neurofiction want to believe that, contra hard reductionism, “thinking can affect the world” (Midgley, Illusion 38). They want to believe in a view from somewhere.  

Jeffery declares that “science-fiction interested in brain science is always, consciously or not, thinking about itself, exploring the possibility of writing's obsolescence – of a time when inner feeling . . . [is] a matter for technical expertise rather than personal judgement” (69). In fact, Jeffery doesn't go far enough; any neurofiction, whether or not one considers it as falling within the sci-fi genre, is engaged in this self-critical, even self-doubting process. The Two Cultures issue rears its head in part because one of the cultures occasionally claims to not need the other one's made-up stories. In this sense neurofiction often enacts an older form: the defence of literature. Lodge's Thinks... is rightly described by Waugh as a direct
reaction to “scientists . . . trying to colonise the account of consciousness” (“Science” 73) in a way that excludes the figure of the literary author.26 McEwan's *Saturday* is shot through with the anxious need to reclaim the value of literary insight. Powers can appear to “need to convince [himself] of the potential value of narrative fiction” (Johnson 172). The transhumanist figure of Thomas Kurton in Powers' *Generosity* (2008), baffled by the closing words of Albert Camus's *The Plague* (1947), declares that “fiction seems at best wilfully naïve” (229). In Kurton's view, “in time,” literature, “like every other human creation, will be replaced by better, more precise molecular fine-tuning” (230). This dismissive stance is precisely the one which Powers, in *The Echo Maker* and elsewhere, attempts to counter.

In mounting a defence of non-scientific, non-technological, literary insight, neurofictions defend themselves against the scientistic view – implicated in modern Two Cultures tensions – that the explanatory frameworks of the novel are dated, luddite, slapdash, frivolous. When the cognitive scientist in Lodge's *Thinks...* describes how hard it is to give a third-person account of first-person experience, Helen points out that novelists have been doing this for centuries and quotes the opening lines of Henry James' *The Wings of the Dove* (1902) as evidence. Wallace aside, all of the authors I examine here perform a similar act of resistance, or at least imagine what such an act might look like.

Like its historical forerunners, neurofiction frequently defends the essential mystery of mind. Richardson quotes Simon Schaffer's argument that the British Romantics “eventually recoiled at the 'corporeality of mind' posed in the brain science of the era . . . to assert instead 'more direct and dynamic relationships between external nature and the powers of mind'” (qtd. in *Neural* 36). Similarly, Anne Stiles writes that Victorian works of
neurofiction works all ultimately “suggest that we are more than the sum of our neuronal activity” (24), and Sally Shuttleworth argues that in “in place of the reductive materialism of medical science,” Charlotte Brontë's fiction offers “a materialism which embraces the realm of imagination” (243). These stances are echoed, centuries later. Like those studied by Stiles, authors of modern neurofiction are frequently engaged in what Linda Hutcheon calls a “complicitous critique” (qtd. in Stiles 22) of the scientific discourses by which they are so fascinated. This even applies for the science evangelist McEwan, who arrives at such a place almost in spite of himself. Waugh has offered another name for neurofiction: the “neo-phenomenological novel” (“Naturalistic”).

Historicising Cognition

The current study examines four authors' at once fascinated and conflicted relationship to the modern brain sciences. In investigating this crossover between literary and scientific cultures, this study belongs to a somewhat nebulous sub-discipline of the aforementioned cognitive literary studies: cognitive historicism. Within various styles of scholarship constituting cognitive historicism (see Zunshine, Introduction 61-150), the present study is focussed on literary scenarios where authors have dealt directly, knowingly, and self-consciously with the presiding neurological theories of their day. For example, Richardson details how “what we now call the psychology of facial expression theory can be found marking both scientific and literary texts of the Romantic era,” and explores “zones of convergence” (“Facial” 68) in the work of Keats and Austen. Similarly, Nicholas Dames explores how the narratives of the Victorian 'sensation novel' “made visible, and even
schematic . . . the developing sense that consciousness was at least partly comprised of, and possibly even dominated by, the formerly debased realm of automatic, nervous functions” (“1825-1880” 218).

The works of neurofiction I examine here are part of a loose lineage that takes in these earlier explorations of (neuro)scientific culture, and represent a general historical-literary reaction to proliferating materialist, non-dualist models of consciousness. The periods covered by Richardson (1790s to 1830), Dames (1825-1880), Shuttleworth (approximately 1830s to the 1850s), and Stiles (1870s-1910s) neatly map over neuroscience's original golden era, the moment when the field's groundbreaking experimental work began to attract a wealth of public (and literary) attention. Indeed, the gap between Stiles' last covered work (Marie Corelli's The Life Everlasting [1911]) and the emergence of what Burn calls first-generation neurofictions (“Mapping”) – the earliest being Don DeLillo's Great Jones Street, published in 1973 – aligns neatly with the period when Freudian psychoanalysis diverted attention away from the material condition of the brain and behaviourist psychology “closed the 'black box' of consciousness to scientific investigation” (Gaedtke, “Cognitive” 185). I am in agreement with Ortega and Vidal's statement that “the neuronovel is only the newest way of fictionally elaborating brain-related issues” (“Brains” 333) and would add that these fictional elaborations have forever been entirely mainstream, positively bestselling. Richardson has explored “just how permeable the lines between literary and scientific culture were in the Romantic era” (Neural 11). This cultural permeability is at least as pronounced today as it was in the eighteenth and nineteenth centuries – with post-fMRI neuroculture offering a starker set of questions and challenges to literary authors than in any previous era.
One place we see cultural permeability evidenced is in neurofictions' intersection with other literary phenomena of the neurocultural era. It is difficult to locate a very strict boundary between, for example, the meticulously researched brain-damaged characters of McEwan's and Powers' work, and the composite subjects who populate the work of Oliver Sacks. Both McEwan and Powers are frequently criticised in popular reviews for being science-obsessed, and loading their novels with technical jargon. Meanwhile, non-fiction authors reliably discover that “it is very difficult to say anything clear and useful about the brain unless one adds mentalistic talk to one’s neurobiological talk” (Hogan 125). The lines between popular science and popular fiction are often blurred in the era of neuroculture, with an attendant complexifying of the aforementioned Two Cultures tension so often thematised in neurofiction. Gaedtke has explored this complexifying in depth, revealing how Damasio has appropriated Beckett's “stylistic resources for narrating and conceptualizing the problems of consciousness” (“Cognitive” 199), and how, more broadly,

Sacks and other brain scientists often adapt the discursive and phenomenological techniques of modern literature and philosophy . . . A discursive exchange has begun to develop across the notorious “two cultures” divide: while literary cultures have taken a renewed interest in recent mind science, the sciences of the mind have begun to draw conspicuously on the descriptive and analytic techniques of literature and philosophy. (“Neuromodernism” 274)

Put another way: When Oliver Sacks was teaching in Columbia University's creative writing department, and Siri Hustvedt is lecturing in psychiatry at Cornell University, who is doing the science, and who is doing the fiction? When the neuroscientist David Eagleman's
short story collection *Sum: Forty Tales from the Afterlives* (2009) becomes a bestseller, while Daniel Dennett speaks of how Lodge and Powers' novels are “pushing the scientific imagination into new places” and creating a “subtle contributing effect” (“Astride” 160), disciplinary boundaries appear highly porous. The same goes for autobiographical and fictional treatments of neuroculture, where we see so-called brain memoirs encounter head-on many of the same philosophical questions as neurofiction.\(^{28}\)

**Neurofiction and the (Post-)Postmodern**

Much previous criticism of neurofiction has generally neglected to position the genre within the broader history of Anglo-American fiction. Indeed, much of the most-read criticism has focussed largely on assessing only a vague impression of neurofiction's literary quality or value. Johnson declared that “neuronarrative” has “the potential to refresh and redeem the field of literature” (184) (redeem it from what, he neglected to say). Marco Roth, by contrast, is critical of the “the neurological novel,” lamenting the practice of deriving characterization from medically determined frameworks of cognitive abnormality, and seeing it as indicative of a harmful philosophical reductionism and “another sign of the novel’s diminishing purview.” Johnson's optimism and Roth's pessimism broadly reflect the more general views taken by neurofiction (towards the science which is its theme) and by scholarship about neurofiction (when assessing the sub-genre's character and value). The heightened, opinionated nature of these reactions, while not always critically helpful, nevertheless speaks to the ways in which these works of fiction are embedded within pointed current debates regarding the nature of *Homo sapiens* and their inner worlds. But what about neurofiction's
broader role within the recent history of the Anglo-American novel?

I have already explored how modern neurofiction is part of a loose and thematically-centred lineage of authors who were similarly spurred to respond to their era's claims of philosophical materialism – as in the older fictional texts exhibited in the work of Shuttleworth, Richardson (*Neural*), Dames (*Physiology*), and Stiles. More contemporaneously, a unifying factor is that all four of my featured authors write in the long shadow of literary postmodernism. Each of the works of fiction I examine here can be read as exemplifying the nebulous category of post-postmodern fiction (Burn, *Jonathan* 19-26), and each of them exists in a fruitful, two-way tension with the legacy of literary postmodernism.

On the one hand, neurofiction is often presented, by authors and critics alike, as in firm opposition to the postmodern. All of the authors I study here have declared and enacted various forms of ambivalence (if not hostility) towards the postmodern aesthetic and style.²⁹ It is fairly common within neurofiction criticism to assert that neurofiction is a sort of outgrowth of the waning of postmodernism, and that “neuronovelists are contemporary heirs to *modernist* experiments with interiority” (Tougaw, “The Blood” 174, emphasis added). Indeed, one framing of neurofiction might present it as having simply skipped a literary era. While this would be naively simplistic in the extreme, it is true that neurofiction is generally uninterested in language games, but very interested in how consciousness interfaces with the world beyond the page. Neurofiction tends to concur with Tallis' notion that “if any ideas are important, then ideas about the kind of creatures we are must be of supreme importance” (*Aping* 10) – and these works of fiction often believe that these ideas have more than just a
linguistic reality. A literary sensibility that shuns hermetic inwardness and believes that there are relevant discourses beyond the purely language-based – a need to “put their feet on the ground” (Hustvedt, “Borderlands” 118) – binds the authors featured here. These are works of fiction that retain some memory of Derrida and Barthes (perhaps not surprisingly, since all of the their authors undertook graduate studies in the humanities) – but their attention is captured by what Metzinger terms the “naturalistic turn in the human image” (212) which they see manifesting itself all around them.

The general “far-reaching disillusionment with Theory” (Kelleter 154) bleeds into neurofiction's formal elements. There are postmodern flourishes, but there is also (with the possible exception of Wallace) a general conservatism to neurofiction, a lack of line-by-line experimentation which appears partly inspired by the suggestion of a mirroring between the exactitude of the brain scanner and the empiricism of enquiring prose – a shared belief in the possibility of a traceable causality, and the universality of certain ontological human features. Alan Palmer stresses the necessity of a dual analysis in examining how consciousness is represented in fiction, pinpointing two separate but related issues. One is the story-level issue of mind treated as a theme in narrative . . . the what that is the content of those minds. The other is the discourse-level issue of the techniques used to represent consciousness in narrative, the how minds are presented in the discourse. (274)

Palmer's categories are narratological twists on the old distinction between content and form. Although I don't focus on them here, it is worth noting that those novels that do most directly enact and explore neurocultural perspectives on consciousness as a discourse-
level issue – such as Jonathan Lethem's *Motherless Brooklyn* (1999), Mark Haddon's *The Curious Incident of the Dog in the Night-Time* (2003), Benjamin Kunkel's *Indecision* (2005), Rivka Galchen's *Atmospheric Disturbances* (2008), or John Wray's *Lowboy* (2009) – are all constructed around specific neurological conditions. These texts use scientifically-rooted frameworks of knowing as a way to put depictions of mental suffering on more empirical ground.

However, despite a professed sloughing off of postmodernism, the reality is a little more complicated. For one, at a thematic level, an interest in the brain is not unique to the post-1995 era. There were plenty of authors writing during postmodernism's heyday who were also deeply interested in the brain. What's more, with the four authors I feature here, we consistently witness postmodernism's echoes throughout their work. What emerges is that neurofiction displays less of a clean break with the literary past, and that the genre's conflicted relationship with (brain) science is mirrored in its two-sided relationship to postmodernism. Burn has explored how neurofiction treads a conflicted and self-aware middle path between its postmodern heritage and its post-postmodern present: “Post-postmodern novels,” he says,” are informed by the postmodernist critique of the naïve realist belief that language can be a true mirror of reality, and yet they are suspicious of the logical climax to this critique: Derrida's famous statement that 'there is nothing outside the text’” (*Jonathan* 20). (Despite Burn's American focus, this conception also holds true with the British authors I make reference to here.) As mentioned, this doubled relationship is evident in their own conceptions of their craft, and enacted in their work. The architectures of the closing chapters of McEwan's *Atonement* and Power's *Generosity* are almost clichédly
postmodern in their self-reflexively metafictional twists, even as the bulk of each book remains formally conservative and thematically direct. Wallace's *Oblivion* treads a line between moral seriousness and technical playfulness, and Hustvedt's intertextual and epistolary *The Sorrows of an American* remains deeply plot-driven.

The area in which neurofiction most intriguingly follows postmodern fiction is in its depiction of forms of self-alienation and existential discombobulation. Despite the differences in epistemological basis, postmodern anxiety has a similar atmosphere to neurocultural anxiety, and the typical postmodern subject shares certain core similarities with the neurocultural one. This has been noted at moments in the criticism, as when Lodge writes

> there is . . . a certain affinity between the poststructuralist literary theory that maintains that the human subject is entirely constructed by the discourses in which it is situated, and the cognitive science view that regards human self-consciousness as an epiphenomenon of brain activity. (*Consciousness* 89)

As Waugh similarly notes, “postmodernist self-reflexivity seems – like the naturalistic account of behaviour – to have no need of mind, authorship or selfhood” (“Naturalistic” 20). Swantje Möller's description (drawing on Paul Ricœur, Jerome Bruner, and others) of the postmodern view of the self as “under constant revision and reconstruction” (29) sounds a lot like Antonio Damasio's. Kelleter notes of Mark Turner's work, foundational to cognitive literary studies, that “when Turner comes down on the side of an active and fluid – rather than a static and structured – notion of meaning, his position is not altogether incompatible with the counter-intuitive claims of much postmodern philosophy” (177).
There is a continuum between the animating alienation of postmodernism and that of neuroculture, a continuum which precludes any simplistic picture of neurofiction as being what emerges once postmodernist writing runs out of steam. “The importance of the neuronal explanation of character,” writes Burn, “seems to be a crucial component of the way character is conceived in the contemporary world, and by extension in the post-postmodern world” (Jonathan 26). I concur, but we should bear in mind that the neuronal explanation of character isn't so far removed from the postmodern explanation of character as authors of neurofiction might suggest. I would offer this as one reason why none of these texts can avoid using some of the formal tools of postmodernism: the source of the alienation may be different, but the phenomenological flavour isn't. A sense of the helplessness of the subject sees neurofiction wedded to the atmosphere of postmodernism, even if the aesthetic style of the novels often owes something to an attempted literary neo-naturalism seemingly more suited to an era of brain scans. Post-postmodern neurofiction is variously embedded in, and at odds with, a philosophical trend that is simultaneously its artistic ancestor and, in a sense, current epistemological antagonist. If we can position neurofiction as one example of what we might call post-postmodern fiction – and I think we can, specifically on Burn's terms – it is with the caveat that there is no clean break with the literary past.

**Chapters and Structure**

With these discontinuities and ambiguities in mind, the present study examines neurofiction in the hands of four authors. Chapter 1 examines Wallace's *Oblivion*. Wallace is in certain senses the least obvious of my neurofiction authors – I haven't seen *Oblivion* mentioned in
any other neurofiction criticism. However, the themes of Wallace's last completed work of fiction are informed by a gloomy vision rooted in an acquiescence to the neurologically-driven pessimistic biologism explored above. This pessimism is rooted in the text's projection of the impossibility of effective neuro-introspection or neuro-intersubjectivity as it emerges from a certain interpretation of the popular science. Outlining Wallace's career-long interest in the sciences of mind, I use the evidence of his personal library to show how this interest took a particular direction around the turn of the millennium, the time when he was writing *Oblivion*. The chapter highlights Wallace's oft-neglected interest in the horror genre – most notably the films of David Lynch, Wallace's own analyses of which I project back onto his own fiction – and explores four of *Oblivion*'s stories to demonstrate how they evoke a style I dub *neurohorror*. In closing, Chapter 1 considers whether some of Wallace's other late work, particularly *The Pale King* (2011), may have been intended as a more hopeful counterpoint to *Oblivion*'s vivid display of the ways in which “Consciousness is Nature's Nightmare” (282).

Chapter 2 examines Powers' *The Echo Maker*. Following on from my analysis of Wallace, I unpack the novel's deep engagement with theories of embodied cognition and the evolutionary-biological sources of human cognition – an engagement I trace back to Powers' 1995 novel *Galatea 2.2*. *The Echo Maker*'s focus upon human selfhood's basis in somatic processes of narrativized remembering and forgetting (or *echo-making*) enables it, I argue, to foreground the ontological break between human and non-human minds and to present this break as a causal factor in environmental destruction. Critics have erroneously downplayed the novel's “idealization of 'selfless' . . . existence” (Bieger 213) and have ignored the notion
that *The Echo Maker* takes seriously the pessimistically biologicist notion that the human self might constitute a unique sort of burden. By examining the novel's enacting of the neurological and phenomenological reality that there is “no self without self-delusion” (*The Echo Maker* 358), I map out its efforts to grow comfortable with the natural limits of neuro-introspection. I demonstrate how *The Echo Maker*’s overarching moral gesture is to celebrate *Homo sapiens*’ capacity for intersubjectivity in the form of an Emersonian loosening of self-narratives which allows for external narratives (including those of non-human ecology) to enter into the sphere of the individual consciousness.

Chapter 3 tackles Britain’s leading neurofiction author, Ian McEwan. Focussing on *Enduring Love* and *Saturday*, I unpack how both novels' strong Two Cultures theme has its roots in McEwan's career-long attempt to conceive of his craft with help from insights from the natural sciences, most significantly the neurosciences. I explore how McEwan alchemises the potential sources of pessimistic biologism into a hopeful literary manifesto that dovetails with his public role as a rationalist and so-called New Atheist and that proposes a positive model of neuro-intersubjectivity in which “one of the great values of fiction” is the “process of being able to enter other people’s minds” (McEwan, “Interview”). Outlining how the cognitive and cultural role of narrative and storytelling emerges as a complex force in *Enduring Love* and *Saturday*, I show how these texts problematise (even as they might ostensibly advocate for) both scientific rationalism and McEwan's moral vision for the novel. Stressing the gap between McEwan's statements regarding his texts and the evidence of said texts, I explore the internal tensions of McEwan's atheism and rationalism, and how these tensions animate his works of neurofiction.
Chapter 4 examines Hustvedt's *The Sorrows of an American*. Hustvedt is arguably the most learned and most intellectually engaged of these four authors of neurofiction. My chapter helps correct the critical neglect she has suffered. Working with examples from across Hustvedt's oeuvre, I examine the way *The Sorrows of an American* (2008) sheds light on the intersections between psychoanalysis, neuroscience, and neurofiction. To an extent, my analysis builds on Klaus Lösch and Heike Paul's argument that *Sorrows* “offers the method of psychoanalysis as its poetological model” (143) and “evokes an analogy between psychoanalysis and art/literature as two discourses of explication and presentification” (149). To this analysis I add Hustvedt's preoccupation with embodied theories of mind and well-established interest in relational models of selfhood. By examining *Sorrows* in its widest context, I establish that it is a novel whose genesis, thematic focus, and self-conscious stance vis-à-vis the production of literary fiction in the neurocultural age are rooted in a neuropsychoanalytic interrogation of the potential, promise and also limits of intersubjectivity.

In a brief epilogue, I tie these ranging analyses together and reiterate my argument that neurofiction engages with three themes – pessimistic biologism, neuro-introspection and neuro-intersubjectivity – as a way to carve out a role for literary epistemology within a cultural landscape dominated by secular-scientific progress and an intellectual landscape dominated by Two Cultures tensions. In doing so, I gesture towards the possible future of both neurofiction and neurofiction criticism, with a special focus on areas of scholarship and research avenues in need of attention.

As I have attempted to map out here, the cultural and literary genealogy of
neurofiction is varied. The genre is part of a general cultural critique and assessment of neuroculture that spans many domains, from the artistic to the sociological to the legal. The novels themselves are in a conflicted dialogue with both their thematic sources and preceding literary trends. Part of the motivation of this study is to demonstrate neuroculture's multivalent interpretive potential, and I have chosen these texts precisely for the range of sentiments they display. Only Ligotti has produced a more dispiriting literary interpretation of modern brain science than Wallace, whereas McEwan's take is borderline evangelistic in its neo-Victorian moral claims. Just as the British Romantics felt both an “antagonism” towards and “common ground” with the “biology of mind of their era” (Richardson, Neural 36), and the reactions of the Victorian authors studied by Stiles “ran the gamut from reactionary, to celebratory, to visionary or prophetic” (22), so too do the authors here react in very different ways. All of them seek in some way to rescue writing from potentially reductive discourses, but they attempt this rescue with varying strategies, and varying levels of confidence. Vidal and Ortega explore the ways in which, ever since it first emerged in earnest two centuries ago, neuroscientific “hope and hype” has always been “mixed with fear and appeals to prudence” (“Approaching” 8). Neuroculture, they argue,

is electrified by the excitement of empirical discoveries and hopes they seem to raise for the medical application or insights into human nature; on the other hand [neuroculture] is mesmerised by the vision of dangerous consequences . . . This combination is a crucial constitutive mechanism of the neurocultural universe. (“Approaching” 9)

Works of neurofiction, I suggest, embody both this hype and this wariness – often on
the same page. There are frequently detectable forms of critique and mistrust, as outlined above – but there is also always a deep and fascinated authorial engagement with the science, an awareness that deep discoveries are being made from which the human episteme will probably never retreat. Part of my argument here is that we shouldn't expect neurofictions to act like solutions, or prescriptions, or manifestos for the age of neuroculture. In this, I follow Tougaw, who holds that works of neurofiction have “no onus to be accurate . . . [They] can be provocative, philosophical, aesthetic, political” (“Re: Neuroscience”). In other words, we shouldn't expect a neurofiction to solve an intractable question like the Hard Problem, or offer a complete updated exegesis of the varieties of religious experience. What these novels can do is probe the implications raised by contemporary neuroscience in a way that the science itself cannot. As Vidal and Ortega write, “unlike a scientific or philosophical argument, an artwork is allowed to be a locus of contradictions where opposites may coincide” (“Approaching” 23). To quote Tougaw again, “contradiction and inconsistency are inevitable when a novelist explores relations between physiology and self; in fact, they may be the point” (“Touching” 344). The unresolved tensions of neurofiction are its conclusions, its confusions a sort of radical honesty about the scale of the philosophical and epistemological challenges involved. Against the bombastic self-assuredness of much popular science, they offer a response which is more complete, despite its divisions. The “perspectival problem of qualia that structures both the form and the content of the contemporary neuronovel” (Gaetckle, “Cognitive” 184) is a problem indeed, and these texts offer as many questions as they do answers. In their enquiries lie their insights.
2. “Consciousness is Nature's Nightmare” : The Neurohorror of David Foster Wallace

Wallace's Oblivion

Obvious fact: Never before have there been so many gaping chasms between what the world seems to be and what science tells us it is. ‘Us’ meaning laymen. It’s like a million Copernican Revolutions all happening at the same time. As in for instance we ‘know,’ as high-school graduates and readers of Newsweek, that . . . our love for our children is evolutionarily preprogrammed . . . that our thoughts and feelings are really just chemical transfers in 2.8 pounds of electrified pâté . . . We ‘know’ a near-infinity of truths that contradict our immediate commonsense experience of the world . . . Viewed objectively, the whole thing is deeply schizoid; yet the fact of the matter is that as subjective laymen we don’t often feel the conflict. (Everything 22)

So says David Foster Wallace, in his compact history of infinity. Wallace is describing here what cognitive historicist Alan Richardson calls “one of the great lessons of the cognitive revolution”: “just how much of mental life remains closed to introspection – much more, it is sometimes claimed, than Freud himself supposed” (Neural 14). In his analysis of the same, Slavoj Žižek even more explicitly draws the parallel with the Copernican Revolution referred to by Wallace: “It seems that, with this cognitivist naturalization of the human mind, the process described by Freud as the progressive humiliations of man in modern sciences reached its apogee” (Parallax 163).

A concern with neuro-introspection and its relationship to the spectre of pessimistic biologism is central to neurofiction – and this final 'humiliation' of the neurocultural age, I argue, is at the root of what Marshall Boswell calls the “somber portrait of souls in isolation”
(“Constant” 151) that is Wallace's final completed work of fiction: the short story collection Oblivion (2004). Oblivion schematises the way our neurology condemns our conscious mind to be cut off from both our external reality and our own physical reality, leaving our subjective awareness as a kind of flailing, helpless add-on to physical processes of which we are not in control. Oblivion is a tragic collection, and at the heart of its tragedy is the isolation and impotence of the conscious mind. As Boswell points out, every protagonist in the collection is “at the mercy of their minds” (“Constant” 152) – and, as we shall see, this state of being is never a happy one.

I argue here that what Stephen J. Burn rightly calls “Wallace's career-long fascination with consciousness” (“Paradigm” 373) takes a specific direction in the late nineties. His readings of particular texts lead him to fictionally map out the challenge of pessimistic biologism more starkly than any other neurofiction. This mapping-out takes place in combination with a feature of Oblivion that has gone unnoticed in the criticism – the great debt the collection owes to the horror genre, and Wallace's reconfiguring of the unique mode of existential and atmospheric horror he applauded in the work of the director David Lynch in a 1996 essay (“David”). We can read Oblivion as Wallace forcing “subjective laymen” – that is, all of us – to confront the “deeply schizoid” nature of the “conflict” at the very heart of our being (Everything 22). Oblivion takes the tools of horror and displays for us the “gaping chasms” (22) between what we experience and the scientific consensus – between what manifests in the brain and what manifests in the mind. In doing so, it forces us to realize how much of a challenge any sort of bridging of the chasms represents, subtly evolving a Lynchian neurofiction belonging to a genre I am here terming neurohorror.
I want to begin by establishing that – despite never writing about it directly, explicitly, the way he wrote about cruise ships or Roger Federer or the eating of lobsters – Wallace had a keen and lifelong interest in the brain sciences. It is my contention that this interest peaks and achieves a pessimistic clarity around the turn of the millennium but is readily detectable far earlier. A rough chronological tracing of Wallace's interest will support my closer exploration of the direction his neuroscientific investigations take in the late 1990s.

Though it risks sliding into biographical criticism, it is worth stating up front that Wallace's own well-documented mental health struggles will certainly have informed his interests in, and understanding of, human neurology. As D. T. Max's biography explores, Wallace suffered with clinical depression for his entire life. The question of the brain, and the dependency of human experience on its material conditions, was signalled to Wallace every day, as either before or after a day's writing he paused to swallow the pills that “look[ed] just like the tiny round Red Hots we'd all eaten as children” (qtd. in Max 52) – pills without which he found life unlivable.

Indeed, Wallace's very personal interest in neuroscience is evidenced in his first ever published piece, a short story called “The Planet Trillaphon As It Stands In Relation to The Bad Thing.” Published when the 22-year old Wallace was in his senior year, the story thematises clinical depression, or “The Bad Thing” (26). The story contains various references to the brain, and already shows an understanding of “psychopharmaceuticals” (32) and the difference between “the two general kinds of antidepressants: tricyclic and M.A.O.
Inhibitors” (32). The narrator discusses how Imipramine, under the brand name Tofranil, disassociates “the sound of your brain-voice when you think thoughts to yourself” (33). (It was Tofranil which Wallace himself was prescribed in late 1983 [Max 32]).

What we have in Wallace's earliest piece of fiction, then, is essentially an extended musing on the connections between chemicals, the material condition of the brain, and subjective experience and wellbeing. Four years on from his first published story, with The Broom of the System (1987), even as Ludwig Wittgenstein and Jacques Derrida dominate the intellectual conversation, the brain continues to make an appearance. For what will not be the last time, a character suffers from “an extremely rare neurological condition” (108). At one point, a storyteller refers to “the back part of his brain, the part that deals with basic self-preservation” (184). Later, a character gearing up to explain “Hegelian sublation” to someone finds that “the old cortex is a flurry of activity” (239). These lines hardly represent advanced neuroscientific learning – but even just these basic references to brain anatomy are evidence of Wallace's career-long interest in the brain. Such evidence is similarly detectable in some of the stories making up Girl with Curious Hair (1989). In the collection's most significant piece, the closing novella “Westward the Course of Empire Takes its Way,” one character remarks that repeated journeys should have made another character's route unforgettable by now; that “the precise way to go should be a deep autonomic wrinkle in [their] brain” (326).

Wallace's neuroscientific engagement picks up intellectual steam with his magnum opus, Infinite Jest (1996) – a novel in which iterations of the words “brain” and the prefix “neuro-” appear more than ninety and forty times respectively. Infinite Jest greatly expands
the theoretical interests of Wallace's earliest fiction (see Boswell, *Understanding*), and the novel heavily thematises both behaviourism and philosophical pragmatism. Neuroscientific knowledge, though – and an awareness of the centrality of the brain to conscious experience – plays a strong role. Burn's reading of *Infinite Jest* reveals a “fascination with the mind's material substrate” (“Webs” 68) and demonstrates how “a set of nested allusions come together to interrogate and dramatize a range of theories of consciousness” (65) – an interrogation that “could not take place, for [Wallace], without reference to neuroscience” (65). At the centre of Burn's analysis are two ideas: first, that noted neuroscientist Paul D. MacLean's evolutionary triune brain theory (popularised in the seventies and eighties by the astronomer Carl Sagan and the novelist Arthur Koestler) “seems to be projected across the Incandenza children” (“Webs” 68), and that this relates to Wallace's interest in “internal division in general, and schizophrenia in particular” (70). Second, that this latter interest (a common “organizing trope in his fiction” [70]) sees Wallace use the model of schizophrenia found in the Scottish psychiatrist R. D. Laing's *The Divided Self* (1960) as “an algorithm for character development and plot structure” (“Webs” 76) and “a governing metaphor that shapes *Infinite Jest* as a whole” (76).

For the purposes of this chapter, the subtleties of Burn's analysis of the role of MacLean and/or Laing aren't too important; the point is that Burn convincingly chronicles Wallace's rich and ever-expanding interest in issues relating to the brain and mind across the first decade of his writing career. (MacLean and Laing aside, Burn also documents Wallace's veiled engagement with Gilbert Ryle and Julian Jaynes, two other well-known theorists of the relations between neurology and consciousness.) Whatever else Wallace was reading
about, he was reading about the brain.\textsuperscript{35}

For my purposes, at least as interesting as this evidence of Wallace's explorations of the brain and consciousness is their eclecticism. There is a powerful epistemological friction between MacLean and Laing. The two men approach the question of consciousness from entirely different angles. While today MacLean's well-known triune brain hypothesis (partly an attempt to scientize Freud) commands a mixed scientific reputation – Martyn Bracewell writes that the idea “no longer holds much sway” (165) – in its epistemological approach, it mimics modern neuroscience. MacLean – who was responsible for first introducing the concept of the limbic system into neuroscientific literature in the sixties – is deeply interested in brain anatomy, and the way this anatomy dictates and constrains experience. He is a card-carrying materialist.

Laing, on the other hand, despite starting his career as a neurosurgeon, was primarily interested in consciousness from an existentialist or phenomenological viewpoint. His thinking was influenced by the continental philosophy of Heidegger and Husserl, and by his “existential heroes,” “Kierkegaard, Nietzsche, Kafka, Beckett, Sartre” (Burston 254) – not by early neuroanatomical experiments. \textit{The Divided Self} barely even mentions the brain. It doesn't once reference Charles Darwin. For Laing, the route to psychic health involved not manipulations of brain chemistry – but an existential journey he dubbed metanoia (a term used in the Greek New Testament to describe atonement). Put simply, where MacLean was a materialist, Laing was a constructivist; he saw psychopathology as being seated not in biology, but in social life. Just as postmodernism is generally regarded as being at odds with the hard sciences of mind, so is Laing's (so-called) anti-psychiatry.
Wallace's less neuro-centric interest is evident also in *Infinite Jest*'s engagement with the philosophy of William James, the original opponent of what Raymond Tallis calls “neurodeterminism” (*Aping* 7). As partly explored by David H. Evans, James' thought, although “pretty much ignored” (172) within Wallace criticism, floats throughout the background of both *Infinite Jest* and *The Pale King*. Evans argues that “James was a crucial figure for Wallace, a figure with whom he could recognize remarkable parallels, both in terms of the moral dilemmas they confronted in thought and life, and in terms of the solutions they tried to apply to them” (172). Combatting physicalist reductionism, the philosopher “put activity rather than passivity at the core of our relation to the world” (175) by affirming the subjective power of “the possibility of choice” (174) – choice in terms of a sort of cognitive creative freedom, or to quote Wallace's at least partly James-inspired *This is Water*, choice in terms of “some control over how and what you think” (53), over “what you pay attention to” (54) and “how you construct meaning from experience” (54).

Thus, while Wallace was reading the work of a neuroanatomist, a thinker for whom subjectivity is conditioned entirely by the physics of our grey matter, he was also reading a thinker who prioritised the role of what can vaguely be termed mind: the capacity for self-directed thought to do its own work, perhaps uncover its own solutions, without reference to basal ganglias or neocortices. Like Laing, James believed that we are not at the mercy of our physiology, and he was horrified by the suggestion that we might be. This tension between the freedoms of thought and the constraints of the brain is what will produce the existential neurohorror of *Oblivion* – in the form of total, horrified capitulation to the latter.
Strangers to Ourselves: Discovering Neuropessimism

The years following Wallace's rise to fame with *Infinite Jest* were also the years in which he began working on 2004's *Oblivion*. During this time, Wallace's reading in neuroscience and consciousness studies intensifies. Two months after the publication of *Oblivion*, Wallace published “Consider the Lobster” in *Gourmet* magazine. The essay displays a sophistication of engagement with neuroscience that outstrips any of his previous nonfictional work and points clearly to the deepening of his interest during the period in which he was working on both publications. The more specific direction of Wallace's reading, especially how it relates to *Oblivion*, is indicated by two valuable clues found in his personal library.

Amidst the eclectic selection, we find the Danish popular science writer Tor Nørretranders' *The User Illusion: Cutting Consciousness Down to Size* – first published in English in 1998 (seven years after its original release in Danish), although one of Wallace's two copies was the advance uncorrected proofs of the book, so he could have received it some time earlier. We also find the social psychologist Timothy D. Wilson's *Strangers to Ourselves: Discovering the Adaptive Unconscious* – published a little later, in 2002, but still early enough for it to have influenced those stories in *Oblivion* written later, such as “The Soul Is Not a Smithy,” “Oblivion,” and “The Suffering Channel.” A brief overview and analysis of both of these books is warranted, as backdrop to my reading of *Oblivion*.

It's possible that Wallace stopped reading after 225 pages – approximately half – of Nørretranders' *The User Illusion*, as that is where his note-taking ceases. However, this would have been more than enough to grasp Nørretranders' general thesis. For one, it is important to note – in light of the more expansive approach to mind entertained by *Infinite
Jest – that the *The User Illusion*'s analyses are rooted firmly in neuroscience, right down to anatomical diagrams. Nørretranders uses a variety of methods and rubrics to quantify the vast difference between how many bits of information per second flow through the sensory systems versus how many of said bits reach “conscious bandwidth” (143) – these various figures and calculations evidently appealing to the mathematician in Wallace. This basic difference between what is out there and what we consciously process is at the core of the book's “Cutting Consciousness Down to Size.” As Nørretranders writes, and as Wallace underlined, “at *any given moment* you are not conscious of much at all” (127); and “the human consciousness can express the experience of only very few bits a second” (137). Put in starker terms: “Consciousness portrays itself as the initiator, but it is not . . . Consciousness is a fraud” (242). Wallace appears to have begun to register the less-than-edifying implications of such an analysis: on page 145, Nørretranders writes

> *Most of what we experience, we can never tell each other about . . .* As far as our conscious linguistic togetherness is concerned, we are all in a state of radical solitude . . . We share a heartrending silence – we can share the experience that through language we are unable to share most of what we experience. (145)

In his copy, Wallace has underlined this paragraph, and written, at the top of the page, “Loneliness – Can't Talk About It” (145).

Of the second text, Wilson's *Strangers to Ourselves*, Wallace again stopped taking notes (and thus presumably also stopped reading) after 113 pages – again, approximately half. And, again, this was more than enough to grasp Wilson's overarching arguments. In its argument, *Strangers to Ourselves* is a fitting companion to *The User Illusion*: “Freud's vision
of the unconscious was far too limited . . . when he said . . . that consciousness is the tip of the mental iceberg, he was short of the mark by quite a bit – it may be more the size of a snowball on top of that iceberg” (6). Alongside this sentence is Wallace's most revealing annotation: “Omniscient not on conscious thought but on unconscious drives” (sic) (6).

Wilson performs the same gutting of free will as Nørretranders: “We experience a thought followed by an action,” he writes, “and assume that it was the conscious thought that caused that action. In fact, a third variable – a non-conscious intention – might have produced both the conscious thought and the action” (107). The page at which Wallace ceased annotating Strangers to Ourselves contains the following remark, underlined by Wallace: “Recognizing that we are no more informed about the causes of our responses than a complete stranger is likely to make people feel less in control of their lives, a feeling that has been shown to be associated with depression” (113).

Nørretranders manages to end his reading by celebrating a sort of psychic humility and Schopenhauerian appreciation for the sublime potential of great art; Wilson closes by offering, in place of introspection, “the do good, be good’ principle” – “one of the most important lessons psychology has to offer” (215). However, aside from the fact that Wallace apparently didn't reach either book's final chapter, it is just as (perhaps more) easy to absorb, from both books, a rather dispiriting philosophical framework. This framework, covered at length in my introduction, adds up to an all-encompassing pessimistic biologism, and in its broad strokes it is the same spectre that so dismayed a young William James. This bleaker view is the one that comes to inform Oblivion.

The unified thesis of these two books, then, can be read as follows: we are not really
in control. Not only are we not in control, but we are not even aware of the things of which we are not in control. Our ability to judge anything with any accuracy is a lie, as is our ability to perceive these lies as lies. Consciousness masquerades as awareness and agency, but this impression is entirely illusory. Speech and language masquerade as a medium through which to communicate consciousness, but it is a pretty meagre tool, which ultimately leaves us stranded in the great opaque secret of our biology. It is our bodies, meanwhile – via “paralinguistic signals” (148), in Nørretranders' words – that actually do the great bulk of our communicating, subconsciously, whether we like it or not. Thoughts do as they please, and we are at their mercy. It might feel like our thoughts dictate our choices, but actually our biology decides and then we retrospectively rationalise. And the coup de grâce: there is no essential self. The self is the illusion generated by all the other interconnected deceptions of consciousness. We don't really exist in anything like the way we think we do.

Whatever other research Wallace performed on the topics of consciousness and the brain while penning Oblivion – and the bibliographies of both The User Illusion and Strangers to Ourselves are riddled with his circlings and possible investigations – this dispiriting vision is the one that comes to form in his mind. The vision, in fact, resembles rather perfectly a neuroscientifically-updated version of the philosophy of arch-pessimist Arthur Schopenhauer – one of five philosophers Wallace listed as enabling him to “feel human and unalone,” as though he were “in a deep, significant conversation with another consciousness” (qtd. in Burn, Conversations 62). As Blakey Vermeule puts it, in his oblique examination of the relationship between Schopenhauer's thought and Wallace's prose, the German is “one of the bleakest, darkest and most depressing” of philosophers, “a true
connoisseur of human misery” (105). For Schopenhauer, this misery was evident in the nature of subjective experience; for Wallace, it is evident also in his era's popular works of brain science.

“Creators of the creepy and eerie”: Wallace and Horror

While he was writing Oblivion, Wallace's neuroscientific reading dovetailed with another key influence: horror. None of the current Wallace scholarship so much as glances at his relationship to horror fiction. This is curious, when one considers that the formative part of his writing career coincided with a “boom . . . unrivalled in the genre's history” (Hantke 159). Wallace was a lifelong fan of horror, and the genre's tropes are visible in his earlier writing (Infinite Jest's wraith and the Face in the Floor sequences, for example). Wallace's much-circulated 1994 Illinois State University teaching syllabus, for an English 102 class in prose fiction, includes amongst its eight set texts two popular horror novels. One of these was Carrie (1974), the debut novel from the most prominent horror author ever, Stephen King. In 1997, Wallace told The Minnesota Daily that he had read “probably 70 percent of Stephen King's books” (“Transcript”). King appeared once again a decade later, when the list submitted by Wallace to J. Peder Zane's collection The Top Ten: Writers Pick Their Favorite Books placed his post-apocalyptic horror epic, The Stand (1978), at number two (128).

The other popular horror author to appear on Wallace's 1994 syllabus was Thomas Harris, whose Hannibal series “helped to make the hybrid police procedural/Gothic horror novel one of the major forms of popular fiction in the late twentieth and early twenty-first centuries” (Murphy 155). The first Hannibal novel, Red Dragon (1981) was “beloved by
“Wallace” (Burn, “Webs” 83). (So much so, in fact, that, as Matt Bucher has noted, Wallace reworked a portion of the novel directly into *Infinite Jest*.) Along with King's *The Stand*, *Red Dragon* also appeared on Wallace's list of top ten books – as did its sequel, *The Silence of the Lambs* (1988). *The Silence of the Lambs* appeared once again on Wallace's 2005 Literary Interpretation syllabus. His personal library even includes the final two Hannibal novels, the lesser-known *Hannibal* (1999) and *Hannibal Rising* (2006).

Wallace's most important engagement with the horror genre and its attendant affects, however, arrives in his September 1996 essay on the director David Lynch. Lynch is a director who, as Stephen T. Asma puts it, would “top most people's lists of creators of the creepy and eerie” (193). Wallace's essay expands upon this idea, describing Lynch's films as “strident and obscure, not-quite-clear in a haunting way” (*Supposedly* 163). The violence in them, Wallace writes, “grotesque and coldly stylized and symbolically heavy as it may be . . . always tries to mean something” (165). Like Dostoevsky's writing, Lynch's films aim to dredge up the deeply interior and personal – they are “inarguably creepy” (166) because with his characters we see “on-screen some of the very parts of [ourselves] [we]’ve gone to the movies to try to forget about” (167). Lynch's films may be somewhat “nonlinear” (168), even verging on plotless, but they “have human beings in them” (168), and these human beings “function for Lynch as they do for audiences, as nodes of identification and engines of emotional pain” (168).

Lynch's movies, in Wallace's framing, offer a special sort of horror. They “are not about monsters . . . but about hauntings, about evil as environment, possibility, force . . . a kind of ambient spiritual antimatter hangs just overhead” (*Supposedly* 204). “People can be
good or bad, but forces simply *are*. And forces are . . . everywhere. Evil for Lynch thus moves and shifts, *pervades*; Darkness is in everything, all the time – not 'lurking below' or 'lying in wait' or 'hovering on the horizon': evil is *here*, right now” (204-205).

Wallace's description of Lynch's brand of horror functions almost uncannily well as the description I offer here of the neurohorror of Wallace's own collection, *Oblivion*. The darkness, dread and horror of *Oblivion* is not located in monsters, or evil people; it is in the environment, in all of us, in our neurology and fraught consciousness and ill-evolved minds as described by Nørretranders and Wilson. The horror is also present in dreams, which pervade *Oblivion*. Chad Harbach criticized *Oblivion* for its “surprising number of pointless dream sequences.” But they are not pointless at all. As well as being right out of the horror literature playbook, dreams function in *Oblivion* as a pointed example of a lack of cognitive control. Put simply: When are we less in control of our minds than when we are dreaming? Whatever its physiological function, dreaming is arguably the example of the brain behaving in ways entirely beyond our control. This is another area where Wallace evokes Lynch's special brand of horror. Dreams are ubiquitous in Lynch's films, as in the pencil factory scene in *Eraserhead* (1977), or the nightmarish diner sequence in *Mulholland Drive* (2001). Such dream sequences, Asma writes, draw on “surrealist techniques that date back to Dalí and Buñuel” to produce “an abundance of cosmic fear” (193). So it is with *Oblivion*, where the dreams are all nightmarishly surreal – even verging (as with the title story) on an absurdist black comedy that is also somewhat Lynchian.

Lee Constantinou has said of *Oblivion* that it is “by far Wallace’s most Lynchian book. The evil Wallace invokes in 'The Suffering Channel' is not so much al-Qaeda as the
lacuna of the world itself” (71-72). Konstantinou is right, but this lacuna is present not only in “The Suffering Channel” but throughout the entire collection. The term I have coined here – neurohorror – speaks to this dovetailing of Wallace's stylistic use of the horror genre and his thematic interest in the pessimistic suggestiveness of modern popular neuroscience writing. This dovetailing is exemplified in the writing of one of Wallace's peers (and neurohorror's most refined theorist), Thomas Ligotti. Discussing horror as a genre (183-228), Ligotti argues persuasively that the harshest of pessimistic biologisms forms the existential backdrop to all great modern horror writing, as it develops from Ann Radcliffe through Edgar Allan Poe and H. P. Lovecraft. All such fiction, as Ligotti puts it, is motivated by the capacity “not only to place humanity outside the center of the Creation but also to survey the universe itself as centerless and our species as only a smudge of organic materials at the mercy of forces that know us not” (204). Horror as a genre is rooted in the evolved brain's perception of itself as “only passing through this shoddy cosmos” (211). Horror, in other words, only emerges in its fullness when a particular form of pessimistic biologism becomes available – that encountered head-on by neurofiction. Ligotti's conception of the philosophical underpinnings of modern horror, combined with Wallace's own, earlier interpretation of the nature of David Lynch's cinematic take on the genre, conjure the literary and philosophical atmosphere of Oblivion.

Oblivion

Oblivion is not a sequence of stories in any obvious fashion – as with, say, Brief Interviews with Hideous Men (1999). A common criticism of Oblivion is that it reads rather like a
miscellany. My thesis here is that what connects the collection is its neurohorror, its atmosphere of pessimistic biologism – that this is the theme which binds Oblivion together.

To this end, given more space, every one of the stories in the collection could be analysed on these terms. I will focus my analysis here on four of them: “Mr. Squishy”, “The Soul is Not a Smithy”, “Good Old Neon” and “The Suffering Channel”.

“Mr. Squishy,” Oblivion's opening story, explores the machinations of the Reesemeyer Shannon Belt advertising agency, satirising the self-fulfilling vagaries of market research, and exploring the office politics and vicious careerism influencing a shifting group of characters. On another level, the story – rich in neuroscientific language – is a portrait of the apparent bind that is human consciousness. Setting the tone for the rest of Oblivion, “Mr. Squishy” portrays subjectivity as helpless, capricious, and buffeted by winds of influence over which it has no control. Terry Schmidt, a target group facilitator, is a typical Oblivion character: white, white-collar, over thirty, deeply world-weary (he works in “what seemed to have turned out to be his profession” [Oblivion 9]). His dense narrative reflects his leapfrogging thought-stream, jumping repeatedly from the relevant to the irrelevant, the personal to the corporate, the poignant to the utterly mundane. The whole narrative is dominated not by what Schmidt pays attention to, but what Schmidt's attention chooses to pay attention to. Descriptions are rich with the sort of junk of perception that very few writers would dare to include at such length. Wallace always was a maximalist, of course, but in Oblivion the stylistic envelope is truly pushed, enacting the dull weight of perception it seeks to portray. As Boswell puts it, “the stories are a cascade of data and concrete detail that the reader must sift and sort,” which serves to “[force] the reader to experience what is being
depicted” (“Constant” 165). Essentially pointless details are relentlessly, bludgeoningly relayed, and the distraction serves a purpose: this, Oblivion says, is the human mind, perpetually at the mercy of forces it can't see. Schmidt's account is riddled with little examples of when his physiology betrays him, when he inadvertently gives off what Nørretranders calls “paralinguistic signals” (148). “Sometimes when waiting or on Hold on the phone Schmidt would put his finger inside his mouth and hold it there for no good reason he could ever ascertain” (15). The nighttime movements of his sleeping mind steal his slippery consciousness right from under him: it is only upon waking from the “ambient unspoken tension” of a dream of Darlene that Schmidt “remembered again who and what he was” (47).

The most significant part of Schmidt's characterisation has to do with his affection for Darlene Lilley, where his psychic helplessness is most acutely portrayed. Schmidt's affection for Darlene proceeds autonomously, beyond his conscious control. He masturbates to thoughts of “having moist slapping intercourse with Darlene” “without feeling as if he could help himself” (16); while going through his facilitator schtick, he imagines “in a more autonomic [ie. non-conscious] part of his brain” the object of his lust in a nearby room. Tragicomically, his imaginings are just as outside his control as the rest of his thinking. In his fantasy, he keeps finding himself helplessly “saying Thank you, oh thank you in rhythm to the undulatory thrusting motions” (54), much to the imagined Darlene's visible distaste. Try as he might, Schmidt cannot expel his thank yous from his helpless imaginings. He is troubled by “his apparent inability to enforce his preferences even in fantasy” (55) – that is, enforce his psychic preferences, within the privacy of his own mind. Wading fully into
neuropessimistic waters – recall the famous experiments of Benjamin Libet (Potter 133-134) – Wallace writes that the state of affairs “made Schmidt wonder if he even had what convention called a Free Will, deep down” (55).

Furthermore, Schmidt's is a double curse: not only is he not in control of his mind, but – having “had several years of psychotherapy” (25) – he is entirely aware of this absence of control (21-22). He perceives his situation, with painful clarity – but whatever degree of neuro-introspection he might possess, it is no help. In a motif that will recur throughout Oblivion – and evoke Wallace's note in Nørretranders' The User Illusion, “Loneliness – Can't Talk About It” (145) – the final tragedy of Schmidt's story is that on top of his consciousness being capricious and wearing, his meta-cognition renders him isolated, cosmically lonely.

This utter isolation is the source of the story's horror, or what Wallace called in Lynch's work “a kind of ambient spiritual antimatter hang[ing] just overhead” (Supposedly 204). As in Lynch's films, Wallace hints that this lonely dread encompasses the human condition. Schmidt is not, he is coming to realize, special – everyone else his age has similarly (and self-deceptively) “been at the exact center of all they've experienced for the whole 20 years of their conscious lives” (Oblivion 30). Throughout Oblivion, these exact centers – these isolated brains – suffer for their strandedness, for their ability to operate in “total subjective private” (31). Later, we are told that “Mr. B. had absolutely 0% knowledge of what and who Scott R. Laleman really was inside, as an individual” (65) – a state of affairs the story portrays as the basic nature of human life. Neuro-intersubjectivity, that central concern or muted desire of neurofiction, is utterly absent. Wallace confirms what the reader already knows – that Schmidt “had a vivid and complex inner life; he introspected a
great deal” (26). Yet Wallace's careful portrait is such that the reader knows, beyond all doubt, that to everyone who encounters him, Schmidt appears as a faceless corporate drone, as someone incapable of introspection. So total is this disconnect, this isolation of self, that Schmidt is on the verge of “making a dark difference with a hypo and eight cc's of castor bean distillate” (32) – that is, committing mass murder via mass-poisoned commercial confectionary. Neurological loneliness darkly alchemised into violent fantasy is a theme which repeats throughout Oblivion. We might read these reference to acts of cruel violence as nods to the more conventional horror tropes used by an author such as Stephen King.

Schmidt is the most obvious site of neuropessimism in “Mr. Squishy,” but in a wider sense, the whole story and the whole portrait of the Reesemeyer Shannon Belt advertising agency serves to buttress his account. Obvious as it might sound, Wallace could have had Terry Schmidt work anywhere and still suffer his internal isolation, his ambient neurohorror – but he has him work at a vast and complex advertising agency. Advertising as an industry represents nothing if not the attempt to understand and manipulate human psychology, particularly human desire. These aspirations intersect with the condition of human minds, of minds like Schmidt's. He is in a line of work committed to preying upon what a character in The Pale King calls “the delusion that the individual is the center of the universe” (146), the very delusion which is so ruining Schmidt's life. And this all-suffusing neurohorror extends to the whole of the RSB agency. The way the story moves through the brief narrations of other RSB employees – all superior to Schmidt – and outlines their scheming focus-groups-within-focus-groups, is too dense to outline here. However, the focus-group rooms can be read as metaphors for Oblivion's picture of the human skull: hidden from view, stuffy,
psychologically over-burdened, and dense with interior confusion. More broadly, each focus group itself can be read as epitomising *Oblivion*'s neuropessimistic vision of human consciousness: despite an abundance of pained analysis, despite apparent total self-consciousness, they remain essentially unknown to themselves, manipulated by forces they can't see – or what Wallace described in Lynch's work as “environment, possibility, force” (*Supposedly* 204). The new “Full Access” (*Oblivion* 7) approach to informing focus group participants is a total ruse – every participant and every employee in fact has very *limited* access. Like so many of the characters throughout the collection, Schmidt is keenly perceptive – his observations of the members of the focus group, and of his environment, are meticulous – and yet this perception quickly hits a conceptual ceiling, beyond which the intelligent Schmidt is unable to perceive the extent to which he is being controlled and deeply deceived. So too goes *Oblivion*'s account of the brain/mind – recall Wilson's remark that our conscious awareness is a “snowball on top of [the] iceberg” (6) of actual reality. Neuro-introspection cannot save us. In his mornings, Schmidt stares into his mirror and actually perceives his face as morphing into that of Mr. Squishy's, “so that when he thought of himself now it was a something he called *Mister Squishy*” (33-34). Advertising imagery rushes in to fill the vacuum of self. Here, more acutely than anywhere else, the twin deceivers of corporate marketers and the human brain move closer than ever, their tactics overlapping in a moment of surreal horror reminiscent of Lynch.

The same self-consciousness that so anguishes Schmidt (and Wallace) is also reflected in RSB itself: their whole enterprise is predicated not on the value or worth of the products they are pushing, but the public's *perception* of these products. *Felony!*, we might
say, is the ultimate self-conscious commodity. Towards the end of the story – in the cruellest blow to Schmidt's advocating of the inner human life, the need for real human sentiment to be exposed and shared – we learn that the ultimate aim of the deceptively intersecting focus groups is to remove facilitators (that is, human beings) from the process altogether. “No more facilitators to muddy the waters,” head honcho Alan Britton declares, “by impacting the tests in all the infinite ephemeral unnoticeable infinite ways human beings always kept impacting each other and muddying the waters” (64). Not only will this corporate logic cost Schmidt his job; it represents a running out of patience with human complexity, a statement that the inner life should be sacrificed for “modern hard science” (62) and the cold rationale of statistics. This is a parallel epistemological position to that objected to by philosophers such as Raymond Tallis and Mary Midgely. Forget Schmidt's so-called inner life, the hard neuroculturalist might say – if you want to know about him, just scan his brain. He doesn't want to “take off his public mask and open his heart to” (32) Darlene; he wants to further his genes by mating with her. (In the collection's title story, the protagonist refers to his brother-in-law, who wears “the bland, almost affectless or subdued way evidently characteristic of practicing Neurologists everywhere” [195].) Subjectivity is the source of total confusion for Schmidt's private life, RSB's researchers – who “sweep under the rug” the fact that “they had no way of quantifying subjective-identity-awareness” (64) – and so many neuroscientific accounts of human consciousness. All of this too is a judgement on the condition of human consciousness; it isn't good to live with, nor is it good to try and work with.

“Mr. Squishy” is a story about the fraught, helpless, anarchic, and self-deceiving nature of human perception and consciousness. This theme clearly meshes with other ideas
running throughout the collection – the crushing effects of corporate office work and atomised consumerism amidst “a fully ascendant neoliberal culture” (Severs 167) – but it is this atmosphere of psychic despair that infuses the story. The “abundance of cosmic fear” (Asma 193) of Lynch's films lingers similarly against a backdrop whose subtle horror is a horror of inevitable human isolation, and whose atmosphere of doom hints at blossoming fully into a more conventional horror – perhaps Schmidt's mass murder, perhaps a shooting spree on the part of the mystery climber. The overall impression is of consumers – that is, humans – being massively manipulated by large amoral corporations who are themselves incessantly internally manipulating themselves. As in brains, so too in markets.

“The Soul is Not a Smithy” is Oblivion's second story, and continues a number of the themes of “Mr. Squishy”. The story, a ranging recollection of a day in the childhood of an unnamed adult narrator, runs two storylines off against one another: in one, a child (the adult, remembering himself) is attending his fourth grade civics class when a substitute teacher, Mr. Johnson, suffers a psychotic break and takes the narrator and three other children as what a local newspaper calls “Unwitting Hostages” (Oblivion 67). Nested within this scene is a description of the child's complex daydream, projected like a comic-book strip onto the panels of the classroom window. (The daydream itself consists of four separate interlinked storylines, and is contaminated by nightmarish violence as, within the room, just beyond the child's concentration, Mr. Johnson begins to write “KILL THEM ALL” on the chalkboard [87].)

Like “Mr. Squishy”, “The Soul is Not a Smithy” qualifies as a sort of Lynchian horror story for its atmosphere alone: the claustrophobia of an anxious mind, the pitch of
ascending dread and doom, the presence of violent insanity, the lethal culmination (in which Mr. Johnson is shot by police). And once again, these features are modulated through Wallace's learned neuropessimism. As with Schmidt's third-person narration in “Mr. Squishy,” the unnamed child's first-person account – that is, the adult's memory of his childhood experience – is stuffed with the junk of perception, details (to pick a couple of examples) about “where you stored your No. 2 pencils” (*Oblivion* 68) and how one of the other children “now works in Dayton as a quality control inspector of Uniroyal” (87) which the adult understatedly admits is “[not] directly relevant to the story” (69). Once again, Wallace's maximalism serves a purpose: we understand that we are in the hands of a consciousness that (like all consciousnesses) lacks any sort of effective filter. The sense we get, as the story proceeds, is that the adult narrator has only very slightly been able to get his relentlessly digressing child mind under control. It is suggested – in line with Wallace's readings in neuroscience, by nature universalist in their analyses – that such an inability to be present at moments when we most need to be present, such unreliability of phenomenological focus, is a distinctly human phenomenon: “It is true,” the narrator muses, “that the most vivid and enduring occurrences in our lives are often those that occur at the periphery of our awareness” (97).

Another strong parallel with “Mr. Squishy” is the focus of “The Soul is Not a Smithy” on the inaccessibility of other selves, a denial of the possibly redemptive prospect of neuro-intersubjectivity I have already located in Wallace's reading of Nørretranders and Wilson. Like Schmidt, the narrator's father lives a life of crushing corporate mundanity. The “reality of adult life” (*Oblivion* 103) his existence symbolizes has been causing the narrator
nightmares since the age of seven; he recalls how his father's drudging daily routine “cast
shadows deep down in parts of me I could not access on my own” (105). We witness the
father's “soul-level boredom” (105) as a distanced version of the account of Schmidt's life,
and the blankness and anonymity of corporate office life is once again held up as reflecting
the blankness and anonymity of all other minds, from the perspective of the neuro-solipsism
which is the foundational dread of Oblivion. In the story's most poignant turn, we learn how
(ecoing “Mr. Squishy”) “in childhood,” the narrator “had no insight whatsoever into my
father's consciousness, nor any awareness of what it might have felt like, inside, to do what
he had to sit there at his desk and do every day” (89). It pains the narrator to imagine “what
he thought about” (107) on his brief lunch-breaks, “what his internal life might have been
like” (107) or how he might have communicated it. The tragedy is doubled: not only do such
things not matter to one's corporate higher-ups; they might be impossible to transmit anyway,
as with meaningful moments or memories that “will appear at best tangential to someone
else” (97). They are two component parts of the same basic horror. The narrator's nightmare
of men like his father hunched over desks doing soul-crushingly unfulfilling work is also the
simpler nightmare of the silence of souls in non-intersubjective solitude. Both terrors, in the
scheme of Oblivion, represent “some death that awaited me long before I stopped walking
around” (109). This denial of intersubjective relations is evoked by other presences hanging
over the story: the decline of civics under the weight of that “fully ascendant neoliberal
culture” (Severs 167), and the lethal potential of the Vietnam War, which lurks in some of
the students' futures.

Expanding the ordeals of the human mind, the big cruel joke of “The Soul is Not a
Smithy” is that the narrator's consciousness is so capricious and fickle that it has missed absorbing “the most dramatic and exciting event I would ever be involved in in my life” (Oblivion 69). Had he been able to do what Wallace urges in his 2005 commencement speech – choose “how to think, how to pay attention” (This is Water 92) – then presumably he might have elected to not daydream through such a momentous event; might then also have elected to do the sensible thing and flee the classroom like most of the other children. However, he is a child so incapable of directing the flow of his thoughts that “every full-time teacher in the first several grades at R. B. Hayes knew that I was a pupil whose assigned seat should be as far away from windows and other sources of possible distraction as possible” (Oblivion 70). As a result of his distractedness, his total capitulation to the wandering of his mind, he attends his Civics class “in body only” (71) while his “idly wander[ing]” attention “actively construct[s] . . . narrative fantasies” (71). The narrator has the same lack of control over these narrative fantasies as Schmidt has over his sexual fantasies of Darlene. The adult/child tells us that his imaginings were “difficult and concentrated work” which “bore little resemblance . . . to daydreaming” (72) – but we don't believe him. His imaginings evidently have a momentum and direction of their own, against which he is largely helpless. The compulsion to conjure imagery has an air of psychic duress – as with the mating stray dogs he spots from the window, who in their humping resemble one who “feels compulsively driven to do [something] and yet does not understand just why he wants to do it” (74). The entire story is the narrator's attempt to learn about an event he rather ludicrously has no real first-hand knowledge of. Had his consciousness been more tethered, had he (like his classmates) not been “absent in both mind and spirit” (80), he wouldn't be having to piece
together his account from the collected detritus of the memories of others – memories which are similarly rendered flimsy, unreliable, by the slippery frailty of consciousness: “As we age,” the narrator acknowledges, “many people notice a shift in the objects of their memories. We often can remember the details and subjective associations far more vividly than the event itself” (97).

We also see the narrator's brain and awareness operating outside of his control in the way in which, despite his total distraction, his window-paned narrative becomes corrupted by the tension and fear in the classroom (Oblivion 88). As the psychotic Mr. Johnson – whose meltdown represents another, more acutely catastrophic failure of the brain/mind, and a failure that drives the story's plot – goes on furiously writing “KILL THEM ALL” (87), the imagined story of the stray dogs and the Simmons family goes from “upbeat” to “gruesome” (88). As the scene in the classroom turns dire, as Mr. Johnson begins to emit a “strange, highpitched vocal noise that was something like a scream or moan of effort” (91), the narrator reports that he “was not conscious or attentive to any of this” (92) – but the point is that as readers we know that he was conscious to this, just at a level below his capacity for neuro-introspection, within the psychic iceberg rather than the snowball. Somewhere his mind is perceiving things, and importing those things' effect into the daydream. The autonomous pressure of consciousness is thus doubly rendered: it pressures the narrator to drift out of the present into fabulations, and then also have these fabulations corrupted by the present, an awareness of which it continues to rob him of. The narrator is truly (in Wilson's phrase) a stranger to himself, failing to perceive events even as the rest of his physiology does it for him.
Oblivion's second story replays, in new ways, some of the themes of “Mr. Squishy.” At one point, the narrator refers to a dream sequence from The Exorcist – arguably the iconic horror movie, as Wallace was well aware. The sequence has “stayed . . . emphatically with me over the years . . . and has obtruded at odd moments into my mind’s eye ever since” (Oblivion 95). The film's nightmarish aspect obtrudes in turn into the narrator's present account. This reference to The Exorcist serves a double purpose, evoking again Oblivion's debt to the horror genre, while also highlighting the contrast between somewhat hackneyed horror tropes (such as demonic possession) and the more existential, Lynchian horror which animates Wallace's collection. In Wallace's analysis, in Lynch's films “evil . . . moves and shifts, pervades; darkness is in everything, all the time” (204). This same atmospheric force persists here, with the evil and darkness rooted in the dictates of neurology and translating itself unbidden into violent psychosis and alienating distraction.

Another key theme of the story – foreshadowing “The Suffering Channel” – is that of artistic impotence. A sort of author-level rendering of the solipsism that preoccupied Wallace throughout his oeuvre, “The Soul is Not a Smithy” paints a stark picture of communication failing not just within or between brains (neuro-intersubjectivity) but between brains and their artistic representations (neuro-artistry?). The young version of the narrator cannot keep his imagined comic book under control – and the older version of the narrator can't really improve his account of the event in anything like a satisfactory way (“the best of [his] memory” [Oblivion 100] turns out to be pretty poor). The various news clippings the narrator falls back on only superficially pad out the story, and in the end it emerges as basically a failure, petering out into yet another piece of mind-wandering (112-113). The deeper worry
haunting the story is an old one of Wallace's: that while fiction at its best might be about “what it is to be a fucking human” (qtd. in Burn, *Conversations* 26), communicating this is hard, perhaps too hard. (If a father and son can't even know each other, what hope an author and some anonymous reader?) True to *Oblivion*\(^\text{'}\)'s atmosphere of pessimistic biologism, “The Soul Is Not a Smithy” feels rather to have thrown in the artistic towel, with the title itself being a stark rebuke to the “clarion call to the heroic modernist” (Severs 169) laid out by James Joyce in the closing of *A Portrait of the Artist as a Young Man*. We might read this as evoking a general inability to forge anything personally or artistically worthwhile in the smithies of our souls – souls that modern neuroscience has eradicated from our picture of the human. Within Wallace's literary project, the prospect of neuro-intersubjectivity being ultimately impossible is on its own enough to create what Asma calls in Lynch's work “an abundance of cosmic fear” (193). Part of the dread of “The Soul Is Not a Smithy” is that it extends *Oblivion*\(^\text{'}\)'s “somber portrait of souls in isolation” (Boswell, “Constant” 151) to encompass the spectre of artists in isolation.

Perhaps the least smithy-like soul in all of *Oblivion*, though, arrives in the form of Neal, the narrator of “Good Old Neon.” “Good Old Neon” is an initially straightforward account of Neal's pained life, told from beyond the grave to the reader, made complicated in the final pages with the revelation that the account is actually the imagining of a former schoolmate of Neal, a schoolmate named David Wallace. David Wallace is trying to understand why Neal has committed suicide, and the bulk of the story constitutes Neal's explanation. Via an erratic biography, we learn that Neal spent his life riddled with a sort of unshakeable Kantian guilt regarding the integrity of his intentionality, something he terms
“the fraudulence paradox” (*Oblivion* 147). This sense of fraudulent hollowness renders Neal incapable of love, and despite trying a comically long list of remedies (142-143) he fails to improve his lot. Eventually he runs out of patience and “end[s] the whole farce” (168) by killing himself. (Again, this story features an act of terrible violence, the basic currency of mainstream horror writing.)

Self-consciousness, combined with an insatiable desire “to be liked, loved” (*Oblivion* 141), is what haunts Neal. *Oblivion*'s solipsistic horror has apparently metastasised into not only an inability to access others' inner worlds, but a lack of genuine desire to even do so: pursuing women, Neal puts up “a very good front as somebody who . . . really wanted to know and understand who [they were] inside” (142), but doesn't believe himself to actually possess such an interest. Neal is incapable of saying or doing anything without his consciousness autonomically making calculations regarding the perceptions of other people and forcing him to act based on these calculations. (“I knew what my problem was. I just couldn't seem to stop” [143].) In keeping with *Oblivion*'s neurohorror, he reports from beyond the grave that his was a specifically neurological predicament: “I seemed always to have had this fraudulent, calculating part of my brain firing away all the time” (145, emphasis added), he says. Again, then, we have an *Oblivion* narrator ravaged by the uncontrollable movements of his grey matter. Such calculating movements can be understood as an outgrowth of what psychologists call Theory of Mind – an evolutionarily crucial cognitive feature for a mammal as social and communal as *homo sapiens*. However, in Neal's case, whatever ancient usefulness it might have once served, the evolved brain has here pushed him to drive into a bridge abutment at 95mph.
My central point is that all of Neal's extensive and extensively described suffering can be located in the makeup and character of the human brain, not society or culture. Again, the “kind of ambient spiritual antimatter hang[ing] just overhead” (Supposedly 204) in Lynch's horror emerges in Wallace's work as similarly endemic yet elusive, rooted in the universals of our basic physiology. Neal can't be sure if his parents were similarly “frauds,” if they “carried some type of fraud gene or something” (Oblivion 150) – but by the end of the story the strong impression is that Neal's condition is but a particularly acute version of a basic human predicament. As he puts it, it's “not as if this is an incredibly rare or obscure type of personality” (154). Living Neal actually “found the banality” of his condition “unendurable” (173). This is the quiet dread of the story: the suggestion is that Neal's isn't a “personality type” at all, merely a level of awareness; that Neal is just preternaturally tuned in to a malignant self-consciousness so brain-based that one finds it, to quote another Oblivion narrator, “in everything from Genesis 3:7 to the self-devouring Kirttimukha of the Skanda Purana to the Medousa's reflective demise to Gödelian metalogic” (136). And in the modern neuroscientific paradigm, Neal's suspicion that “in reality I actually seemed to have no true inner self” (160) is absolutely correct. This is the predicament that Slavoj Žižek dubs “the unbearable lightness of being no-one” (Parallax 145). There is really nothing outlandish about Neal's fears; within Oblivion's neuropessimism, they are simple truisms. The same goes for Neal's fear that he is “unable to love” (166): from a hard Darwinian-neurocultural viewpoint, we are all unable to love, really – or more accurately, what we think we are doing when we love is actually not loving at all, as most people tend to understand that word. As Janet Radcliffe Richards pithily (and critically) summarises, “sexual love can be explained as
originating in the survival strategies of genes . . . love is an illusion” (180). Neal recognises this himself: “we are all basically just instruments or expressions of our evolutionary drives, which are themselves the expressions of forces that are infinitely larger and more important than we are” (Oblivion 174). Here, Neal is describing the very same neuropessimism that so terrified a young William James. Is Neal, “Good Old Neon” pushes us to ask, not in fact flawed at all, but just very clear-sighted?

Perhaps the truest example of this neurohorror arrives with Neal's pained, pseudo-Wittgensteinian take on the limits of language. Picking up once again Wallace's old bête noire, solipsism, Neal's linguistic digressions are drawn directly from his author's readings in neuroscience. Recall this passage in Nørretranders' The User Illusion: “as far as our conscious linguistic togetherness is concerned, we are all in a state of radical solitude . . . We share a heartrending silence – we can share the experience that through language we are unable to share most of what we experience” (145). Again, in his copy of the book, Wallace has underlined this paragraph, and written, at the top of the page, “Loneliness – Can't Talk About It” (145). Or, as Neal puts it:

it could easily take a whole lifetime just to spell out the contents of one split-second’s flash of thoughts and connections, etc. – and yet we all seem to go around trying to use English (or whatever language our native country happens to use, it goes without saying) to try to convey to other people what we’re thinking and to find out what they’re thinking, when in fact deep down everybody knows it’s a charade and they’re just going through the motions. What goes on inside is just too fast and huge and all interconnected for words to do more than barely sketch the outlines of at most one tiny little part of it at any given instant. (Oblivion 151)
Once again, this bind is not cultural, not unique to Americans; it is endemic to the human condition – that is, the human brain – regardless of “whatever language our native country happens to use” (*Oblivion* 151). “This is what it's like” (179), Neal says, with finality. Neal's other major digressional issue – his quarrel with “chronological time,” which (along with language) creates “total misunderstandings of what's really going on at the most basic level” (151) – is similarly universal. What could be more brain-based, more basically human, than how we perceive time? Part of the story's melancholy is the impression it projects of cognitive constraints around perception, especially in regard to the tension between an imagined instantaneousness and a lived linearity. The apparent prison of linear time is one inescapable in life; only after his suicide does Neal arrive with relief at a place “outside linear time” (163). All of these binds belong to the species: as Neal – sounding for a moment uncannily like card-carrying materialist and neuroculturalist Steven Pinker – remarks, “the German logician Kant was right . . . human beings are all pretty much identical in terms of our hardwiring” (173-174). This is where *Oblivion*'s horror is (on Wallace's own terms) so Lynchian: it is not found in monsters or serial killers – it is everywhere, unavoidable and impassive: “here, right now” (*Supposedly* 204).

Finally, continuing the trend of all the other *Oblivion* protagonists who massively exert their psychological powers to no end, Neal ends up going through with his suicide because he believes that he lacks the “insight or firepower” (*Oblivion* 147), the mental nous, to get out of his psychic bind. However, in the schema of *Oblivion* this belief represents a deep delusion about the capacity of *homo sapiens'* introspective powers. The crux of *Oblivion*'s stranger-to-ourselves pessimistic biologism is that human thought is deeply
limited; that attempting to think our way out of any problem involving ourselves is a futile undertaking.\textsuperscript{45} In essence, Neal's hyper-intelligence means that he fails to realize how stupid he is. Within \textit{Oblivion}, his misreading of consciousness can only take him to an existential dead-end. “The difference between the size and speed of everything that flashes through you and the tiny inadequate bit of it all you can ever let anyone know” is not something that can be escaped through any amount of analysis; all of us “trying to see each other through these tiny keyholes” (178) is a description of \textit{Oblivion}'s dispirited take on neuro-intersubjectivity.

If “Good Old Neon” represents the most straightforward exposition of the neurohorror I posit is \textit{Oblivion}'s true genre, then the collection's closing novella, “The Suffering Channel,” is probably its thorniest. “The Suffering Channel” is a strange tale. Within existing criticism, the novella (which has received considerably more scholarly attention than the rest of \textit{Oblivion}) has most commonly been read as a piece of 9/11 fiction\textsuperscript{46}. In it, Brint Moltke, a cripplingly shy man from Indiana, has an unusual talent: he can defecate “exquisite pieces of art” (\textit{Oblivion} 238). In the summer of 2001, this talent has caught the attention of journalist Virgil “Skip” Atwater. Atwater – who is uncannily similar to Schmidt of “Mr. Squishy”\textsuperscript{47} – writes human interest stories for \textit{Style}, a magazine based, ominously, “on the sixteenth floor of 1 World Trade Center” (241). Atwater spends much of the story attempting to sell his higher-ups at \textit{Style} on the value of Moltke's story while also pursuing a second, also “dubious” (242) lead: that of the story's eponymous Chicago-based cable venture. The Suffering Channel – whose production company's “registered motto” is “CONSCIOUSNESS IS NATURE'S NIGHTMARE”\textsuperscript{48} (sic) (282) – is about to be acquired by Eckleschafft-Böd Medien, the German conglomerate and parent company of \textit{Style}, which
is also on the verge of a merger with AOL Time Warner. The Suffering Channel broadcasts “real life still and moving images of most intense available moments of human anguish” (sic) (Oblivion 291) on a loop. Soon they will progress from video clips to live events. Rather neatly, “the miraculous poo” (294) is reimagined inhouse as a 'TSC' event, giving Atwater a way to do his story; giving the TSC's CEO, R. Vaughn Corliss, a version of his “most tightly held secret vision or dream” (295) for TV; giving Style a way to cover the event without necessarily endorsing it; and giving TSC a way to launch ahead of schedule. The story ends with Brint preparing to produce one of his faecal artworks live on television, as Wallace repeats the company's grim motto, this time in Portuguese: “A consciência é o pesadelo da natureza” (328). We can read a universalising suggestion here: in any country, in any language, the “nightmare” of the human brain which is at the core of Oblivion's Lynchian horror prevails.

In its careful, disconcerting focus on the process of human defecation, “The Suffering Channel” thematises a human biological universal more directly than any other story in Oblivion. The workings of our large intestines are every bit as unconscious, every bit as outside of our conscious control, as – in Oblivion's neuro-pessimistic outlook – the workings of our brains. And the defecation is truly at the centre of the story; as Chad Harbach puts it, “there is shit on every page; few things are spoken of but shit . . . Wallace seems to be shouting a loud obscenity at the critics who call him intractable.” In a sort of metaphorical soup, the novella is also swimming in other examples of physiological exposure: saliva, menstrual blood, farts. One of Atwater's previous assignments, meanwhile, has seen him visit “a little girl . . . born with an unpronounceable neurological condition” (Oblivion 300).
However, I would argue that the frequent appearance of shit is not so much an obscenity as a metaphor for what the whole of *Oblivion* is about: our biology, under whose command we labour, whether shitting or thinking. When the executive intern offers the suggestion that Brint Moltke's peculiar gift might be “subconscious . . . maybe his colon somehow knows things his conscious mind doesn't” (*Oblivion* 320), she is more right than she knows. Our entire biology knows things our conscious mind doesn't; herein lies *Oblivion*’s capitulation to pessimistic biologism and its dreadful atmosphere of psychic alienation. On top of this we have our inner lives, which are caged within this biology, leaving us with nothing but “these tiny keyholes” (178) of self via which we (fail to) connect. And within “The Suffering Channel,” shit comes to function as the ultimate representation of the interior: that which is common to all, but which is very rarely (to contaminate the metaphor) pushed through the keyhole into the realm of neuro-intersubjectivity. The story makes this point explicitly. Atwater argues that Brint Moltke's story is valuable largely because defecating is “common and universal . . . everyone has personal experience with shit” (244). “But personal *private* experience,” is his intern's riposte. Replace shit with consciousness and the formulation still works. Consciousness is at once the most ubiquitous and individually uncommunicable of phenomena. In another parallel, like shit, people's thought-streams, when exposed to the light, often tend not to be too pretty: see, as exhibit A, the cast of *Oblivion*. In this sense we can read “The Suffering Channel”’s odd defence of human waste as dramatising an idea which runs throughout Wallace's oeuvre – that “any possible human redemption requires us first to face what’s dreadful, what we want to deny” (qtd. in Burn, *Conversations* 32). (This willingness to face the negative – the shit – of the
human condition is what links Wallace's admiration of both David Lynch and Fyodor Dostoevsky.) “It's done in private . . . and flushed” (Oblivion 246), says Atwater's skeptical intern, Laurel Manderley. But the whole of Oblivion is about the horror of residing perpetually in a brain-based privacy. The intern herself – who seems as lonely and cut-off as the rest of Oblivion's cast – remarks not two pages later on the “dark parts of her own self concept” (246). “The conflict between Moltke’s extreme personal shyness and need for privacy on the one hand versus his involuntary need to express what lay inside him through some type of personal expression or art” (271) is made hyper-acute by his “art form” being shitting, but this is really just a reductio ad absurdum of a conflict at the heart of Oblivion: “Everyone experienced this conflict on some level” (271).

“The Suffering Channel” is more than what Boswell calls “an elaborate objective correlate for interior shame and the benefits of sharing that shame” (“Constant” 159) – the story is this, but I would say it can be read as more: as a correlate for everything interior, which in most of daily life (and especially for the cast of Oblivion) remains every bit as hidden as our faeces. Our inability to share with one another the deepest workings of our large intestines mirrors our inability to share the deepest workings of our minds. What we have is a scatological representation of the Hard Problem. Thus TSC’s CEO is in a sense right when he suspects that “an advanced alien species” studying the footage of the story's climactic event, the live defecation, could “learn almost everything necessary about planet earth circa 2001” (Oblivion 295). The story's flashes of yearning for human connection (263-264) act as an attempted counterweight to the sense of Lynchian cosmic insignificance, the ideas of ourselves as “organic materials at the mercy of forces that know us not” (Ligotti
The story refers to “the management of insignificance” as “the single great informing conflict of the American psyche” (Oblivion 284), framing this conflict as fuel for our craving “to distinguish [ourselves] from the great huge faceless mass of folks” (283). The desperate need to be noticed, to be recognized, to be significant, tends to be read as a sort of fraught search for meaning in the post-religious age of celebrity and mass media. In Oblivion, the need is partly this, but it intersects deeply with another kind of insignificance: biological insignificance (read by Ligotti as the motivator of all great horror writing). If Andrew Altschul is right that “The Suffering Channel” “equates significance with visibility,” then, in line with my wider reading of Oblivion, a large part of the dread of the story is that, in the view of the universe, of the biosphere, humans are no more visible than bacteria or plankton. And this – as just one more ingredient of the way our brain dupes us – is nearly impossible to healthily process. Wallace brushes up against this notion when he writes of “the deeper, more tragic and universal conflict of which the celebrity paradox was a part. The conflict between the subjective centrality of our own lives versus our awareness of its objective insignificance” (Oblivion 284). Amber Moltke's emotional makeup appears to Atwater as “very close to the core of the American experience he wanted to capture in his journalism” (284) – but it is also very close to the core of the human experience as portrayed by Oblivion. Indeed, Amber's mix of desperation and self-interest is regarded by evolutionary psychology – a close cousin of so much popular neuroscience and biology – as a craving for social recognition that is just one more part of the materialistic Darwinian equation we are destined to act out, whether we like it or not.

“The Suffering Channel” exhibits some of the features of my reading more clearly
than any other story in *Oblivion*. Is it a coincidence that Atwater's only loving relationship has been with “a medical illustrator . . . specializing in intricate exploded views of the human brain and upper spine, as well as in lower order ganglia for neurological comparison” (*Oblivion* 285)? Or that this relationship ended in a storm of physical, biological challenges: Atwater not caring “one bit for the way she had looked at him when he undressed or got out of the shower” (285); his “hallucination or out of body experience in which he’d viewed himself écorché style from her imagined perspective as he ate, his jaw muscles working redly and oesophagus contracting to move bits of bolus down” (285)? In a single heartbreaking montage, this brief aside brings into full view the themes that have been intersecting throughout *Oblivion*: the promise and then failure of the brain to reveal us to ourselves; the haunting knowledge that we are at the mercy of unseen biology; the way (neuro)biology irrevocably cuts us off from others; and the way all of this coalesces to mirror in fiction what Asma calls Lynch's horrified “explorations of the permanently oblique unconscious” (193).

We see this unconscious emerge unsettlingly during the chapter on “high concept mogul” R. Vaughn Corliss (*Oblivion* 272-273), in which he sleeps “terribly . . . crying out that no he wouldn’t go there, not there not again no please” (272). Again, the helplessness of dreams, like the helplessness of defecating, is the helplessness of all our biology. The “creeping evil” (311) of the Moltke house in Lauren Manderley's dream is naught but evil conjured by the brain – which is omnipresent, residing in every human skull.

A final point: “The Suffering Channel”’s stark evocation of its themes achieves a sort of mirror effect in its blunt use of formal tactics and tools from the horror genre. An obvious example is The Suffering Channel itself. The actual contents of its loop of “real life still and
moving images of most intense available moments of human anguish” (sic) (Oblivion 291) is
described in detail – to some readers, I would imagine, needlessly and indulgently graphic
detail (291-292). It is a grisly, unsettling page and a half, reminding one of the ghoulish
atmosphere of so-called “splatter cinema,” or, more contemporaneously, “torture porn.”

Another perhaps heavy-handed moment of horror in “The Suffering Channel” arrives in the
form of a sentence that irked Chad Harbach and other reviewers. A section arriving late in
the story, focussed on “the executive intern,” ends with the simple, 9/11-foreshadowing “she
had ten weeks to live” (326). “By far the most baffling [sentence] in Wallace’s oeuvre” was
Harbach's assessment. Again, I think this line (which I agree stands out within the story)
makes more sense in light of the story's (and the collection's) horror aspirations. At a
climactic moment, Stephen King's Carrie features the single, horror-signalling line: “He and
George and Frieda had less than two hours to live” (220). During the tense final sequence of
Thomas Harris's Black Sunday, with a terrorist bombing of the Super Bowl looming, the
protagonist, we are told, “had almost an hour to wait” (305). This single line of “The
Suffering Channel” bears the marks of Wallace's fondness for horror writing, his willingness
to make use of its more heavy-handed or even hackneyed formal tools. Additionally, the
line's anticipatory edge carries a note of determinism, of cruel fate – apropos to neurohorror's
denial of free will.

Facing “what’s dreadful, what we want to deny”: Oblivion and The Pale King

Oblivion and Wallace's final, tortuously produced, unfinished novel The Pale King were
heavily intertwined. The (attempted) writing of the novel “overlapped with the writing and
publication of *Oblivion*” (Boswell, “Constant” 156), and the eight short stories “came from the notebooks Wallace was using to write portions of *The Pale King*, and probably began as sections of it” (Max 276). In October of 2001, in a letter to his editor, Wallace referred to the stories in *Oblivion* as “the best of the stuff I've been doing while playing hooky from a certain Larger Thing” (qtd. in Max 276).

Some critics are of the opinion that the “unrelenting pessimism” (Boswell, “Constant” 168) of *Oblivion* was supposed to find its relief and counterpoint in its novelistic partner. *Oblivion*, Boswell argues, represents “the dark but insistent tug of nihilism that is the dialectical obverse of [Wallace]'s otherwise hopeful posthumanism” (Boswell, “Constant” 162). The collection, goes this argument, was meant to illustrate the damnation from which the offerings of *The Pale King* would then suggest a salvation. As Max puts it, “while *Oblivion* was descriptive, *The Pale King* was supposed to be prescriptive. It had to convince the reader that there was a way out of the bind. It had to have a commitment to a solution that *Oblivion* lacked” (280). Wyatt Mason was one of the popular reviewers of *Oblivion* who called for a commitment to this solution, writing that “it might not be the worst thing in the world, next time out, when big novel number three thumps into the world, were [Wallace] to dig deeper, search longer, and find a more generous way to make his feelings known” (19). It might be possible that Wallace was striving to do just this, and that his next work was indeed intended as an antidote to his picture of neurohorror. Properly answering this question would require a full reading of *The Pale King*, which is impossible here. But it is possible that the stories examined in this chapter represented a flexing of Wallace's pessimist muscles, in advance of an attempt to overpower them. To repeat the quote, Wallace said that “any
possible human redemption requires us first to face what’s dreadful, what we want to deny” (qtd in Burn, Conversations 32). Oblivion was intended to make us face the dreadful; perhaps this accounts in part for its horrors.

Indeed, in the very same books which I drew on in establishing the roots of Wallace's neuropessimism lingers the possible evidence of something like a solution to Oblivion's nightmare of consciousness. On page 129 of Nørretranders, Wallace underlined “You can direct your attention where you like.” On 133, he has underlined “the headiness of attaining high, clear awareness,” and under a section explaining the cortex he wrote “change in attention cause activity change in cortex” (sic) (198). The brain might be the problem, but it appears that within these books Wallace was searching for a way for the brain to also become part of the solution. Underneath a quoted passage from William James, he wrote “Able to Choose Focus of Attention” (177). The mention of James is pertinent. I agree with Evans' remark that “James was a crucial figure for Wallace, a figure with whom he could recognize remarkable parallels” (172). As Evans writes, James was panicked and perturbed by the influence of a culture and historical moment “dominated by scientific and naturalistic assumptions” (173) and the picture of “a world of inhuman mechanical processes, in which individual free will was a mere sentimental chimera” (173). This same dismay, updated with a century of neuroscience, is essentially Wallace's own.

In turn, just as James' fears run through Oblivion, we can read his consolations as animating Wallace's 2005 commencement speech (This is Water), and perhaps also The Pale King. James put “activity rather than passivity at the core of our relation to the world” (Evans 175) by affirming the subjective power of “the possibility of choice” (Evans 174) – choice in
terms of a sort of cognitive creative freedom, or to quote *This is Water* again, “some control over how and what you think” over “what you pay attention to . . . how you construct meaning from experience” (54). James' basic answer to the problem of human suffering – the ability to decide *how* one experiences life, if not *what* – is similar to that of other thought systems which run counter to the neurohorror of *Oblivion*. Andrew Bennett explores how increasingly through his work, Wallace was seeking to counter the Schopenhauerian torments of idle consciousness (boredom) with ideas borrowed from the positive psychology of Mihaly Csikszentmihalyi – coiner of the famous and now mainstream concept of “flow,” and a “profound influence” (75) upon Wallace. We can expand Bennett's reading out to encompass the philosophy of Buddhism, a body of thought to which Csikszentmihalyi's *Flow* owes a large debt, and that Wallace became deeply interested in towards the end of his life.49 As Krzysztof Piekaroski (I think rightly) concludes, in his study of Buddhist philosophy in Wallace's work,

in his life and in his writing . . . Wallace searched for a way of life that was a path out of the perpetual cycle of indulgence, addiction, and suffering. To that end, Mario Incandenza's Holy Fool was his prequel to Chris Fogle's dramatization of the power of paying attention to the literal occurrences of day-to-day life. Which . . . is the Buddhist traditions' specialty; how to pay attention to our life as it is, rather than our fantasy of how it ought to be is likewise precisely the purview of meditation practice in general. (271)

Amidst an oeuvre packed full of people suffering deep mental and existential anguish, probably the happiest character Wallace ever wrote was Shane Drinion, *The Pale King's* levitating IRS worker – a fact acknowledged by Hubert Dreyfus and Sean Dorrance Kelly

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(31-42). A character it is impossible to imagine inhabiting the world of Oblivion, Drinion has found a way to counter the deceptions, contortions, and painful dictates of consciousness via simple awareness and concentration. The potential for some form of subjective, interior escape from the crushing weight of pessimistic biologism sees Wallace express that “deep metaphysical ache” (Burn, “Mapping” 45) so common in neurofiction. Wallace's work is shot through with the word soul. The texts' pushback against determinism is subtle, hesitating, fragile: we might read this in line with John McClure's conception of postsecular literary works in which a “turn to the religious is little more than a cautious probing, and the process of ontological opening is extremely subtle” (3).

Ultimately, though, these possible attempts at a literary counterpoint only throw the character of Oblivion into sharper relief. As with Lynch's cinematic output, the horror of Oblivion is “not about monsters . . . but about hauntings, about evil as environment, possibility, force” (Supposedly 204). Wallace discovers the traces of these hauntings in the pessimistic suggestibility of modern popular neuroscience, and converts them into fiction using the stylistic tools of the horror genre. The evil is especially intimidating for its essential indifference. The evil is the evil done to us by our own cognition, by Nature's Nightmare. Facing this nightmare is part of what animates Richard Powers' The Echo Maker (2006), which goes to great lengths to find a way out of the maw.
3. “Signals cascading through the fragile ecosystem”: The Environment, the Self(less) and the Emersonian in Richard Powers' *The Echo Maker*

Every one of Richard Powers' eleven novels has been deeply involved with specialized topics of one kind or another. The first seven alone “give his reader the opportunity to learn about topics that have included game theory, genetic recombination, saponification, corporate economic theory, computer programming, photographic reproduction, polyphonic music, paediatric medicine, tropical botany, and oncology” (Dewey 2). To that list, the most recent four can add more musical theory, theoretical physics, the science of happiness, biochemistry and bacteriology.

Thus it is no surprise that cognitive neuroscience has captured the attention of Powers – described by Mark C. Taylor as “the most scientifically literate novelist in the history of American literature” (74), and by John D. Lantos as the primary practitioner of “bioliterature” (qtd. in Sielke 239). Although his interest reaches a thematic pitch with *The Echo Maker*, Powers has been fascinated by the sciences of brain and mind for almost as long as he has been producing fiction. Jon Adams writes that Powers had “internalized the materialist theory of mind” (140) and experimented with describing mental events in a physical register as far back as 1991's *The Gold Bug Variations* (a point on which other critics concur). *Galatea 2.2* (1995) is an advanced exploration of the roots of psychological functioning, and the novel can be seen in certain senses as a prelude to 2006's *The Echo Maker*, the focus of the present chapter. As Charles B. Harris has extensively documented, in researching *The Echo Maker,* Powers read extensively within both popular and academic
neuroscience and consciousness studies – readings which become amalgamated and fictionalised as the bestselling work of the novel's cognitive neurologist, Gerald Weber.\textsuperscript{50} Alongside this reading, Powers was a committed member of the Beckman Institute's Cognitive Neuroscience group at the University of Illinois.

Powers, then, is an author which no study of Anglo-American neurofiction could possibly omit, and \textit{The Echo Maker} is a text whose concerns and themes are ripe for examination in the wake of my analysis of the neurohorror of Wallace's \textit{Oblivion}. Powers and Wallace knew each other personally, and admired one another's work.\textsuperscript{51} \textit{The Echo Maker} asks some of the same questions as \textit{Oblivion}, and expresses some of the same fears. In my reading, Power's novel is motivated by the tension (and possible reconciliation) between two primary forces: the human/selfed, and non-human/selfless. \textit{The Echo Maker} brings together the fluidly structural nature of embodied “improvising consciousness” (301), the constant revisionism of the brain's irrepressible will-to-self – and the alien ontology of the non-human ecosphere, embodied by Nebraksa's sandhill cranes. The (non-)relationship between these two species and ontologies animates the novel's profound ecological themes, and its critique of human selfhood. Though it has been overlooked in previous criticism, I argue here that Powers' novel takes seriously the spectre of pessimistic biologism to which \textit{Oblivion} so gloomily acquiesces, and flirts with a deeply negative view of \textit{Homo sapiens} and their unique neurology. Ultimately, though, the novel locates in the echo-making of neuro-intersubjectivity – in the cognitively networked nature of human phenomenology – a redemptive power whose mystic, almost pantheistic flavour owes a great deal to Ralph Waldo Emerson (previously identified by Joseph Dewey as a key influence on Powers'
writing). The novel's Emersonian optimism evokes that “yearning to achieve some transcendent spiritual meaning presumed to be absent from the postmodern world” (Burn, “Mapping” 45) which is so frequently found in neurofiction. The Echo Maker manages to locate this meaning – but it is hard-won.

“Consciousness works by telling a story”: The Echo Maker and the Will-to-Self

The Echo Maker is set in and around Kearney, Nebraska, in 2002. A listless local man named Mark Schluter crashes his truck on an isolated stretch of road and is rushed to hospital, where he falls into a coma. His semi-estranged sister, Karin, returns to Kearney in the wake of the accident, and the plot properly begins when Mark awakes and insists that Karin is not his real sister, but an impostor, a “Pseudo-Sister” (Echo 202). Mark, it transpires, is suffering from a condition called Capgras Syndrome, a rare delusional misidentification syndrome in which a person holds that someone very close to them has been replaced by an impostor. Explaining Capgras Syndrome, the neurologist Dr. Hayes tells Karin that “the part of his brain that recognizes faces is intact. So is his memory. But the part that processes emotional associations has somehow disconnected from them . . . he sees what he always sees. He just doesn't . . . feel you sufficiently to believe you” (61). Karin later explains Mark's disorder to herself thus: “his amygdala can't talk with his cortex” (80). Having met Mark, cognitive neurologist Gerald Weber – the novel's third main character, alongside the Schluter siblings – explains to his wife how in Capgras a “lack of emotional ratification overrides the rational assembly of memory. Reason invents elaborately unreasonable explanations to explain deficit in emotion. Logic depends upon feeling” (106).
This “separation of affect from perception” (Tabbi, “Afterthoughts” 227), central to Capgras Syndrome, serves a metaphorical function in relation to The Echo Maker's key theme of the relationship between humans and the non-human biosphere. More obviously, though, it serves as a nexus for an exploration of the novel's central focus: selfhood, and the nature and experience thereof. Early in the narrative, shortly after his near-fatal accident, we are presented with a first-person rendering of Mark's comatose perspective. In these sections, Mark is drifting listlessly on seas of broken syntactic thought while (as a neurologist explains to Karin) “his prefrontal cortex is struggling to synchronize into consciousness” (Powers, Echo 17). These sections of prose – “Body flat water, falling an inch a mile. Torso long as the world” (10) – constitute some of the most surrealist lines Powers has ever written, reading more like William Burroughs than the realists with whom Powers is often compared. The placement of these passages at the outset of a novel centrally concerned with how selfhood is constructed and maintained is fitting, affording an imagined glimpse into the nature of the totally dis- or pre-embodied mind – a reference point whose “grammar and syntax bear no trace of personhood” (Bieger 206). When Mark recovers himself (and his self), he does so in the process of recalling his physical form:

His parts come back to him, so slowly he can't know. He lies in the shrinking bed, taking stock. Ribs: yes. Belly: check. Arms: two. Legs: too. Fingers: many. Toes: maybe . . . Makes a list of himself . . . The hairs on his limbs are oars, beating the current. His body, countless microscopic creatures banded together in need. (42-43)

Mark becomes coherent both to himself and the reader at the very moment when “at last notions climb out his throat” (sic) (43) – that is, in direct correlation with his recovered
powers of storytelling and narrativizing. As he listens to Karin read, he “listened, his eyes like half-dollars, as if words were a new life form” (35). With Mark's re-awakening, both the narration and plot of *The Echo Maker* can then proceed. Nested in this framing is a metafictional comment on the novel's own wider themes: only once Mark can narrate a self into existence can he remember himself; only once the self that is 'Mark' is (re-)established can it participate in the rest of the (human) plot.

The nature and process of Mark's return to human consciousness is reminiscent of Powers' earlier novel, *Galatea 2.2* (1995) – one of the earliest works of American neurofiction. *Galatea 2.2* centres on an artificial intelligence who can't ascend to full human consciousness because her attempts at human cognition lack an instantiated human physical form. *Galatea 2.2* essentially enacts what is known as the embodied mind thesis, described by N. Katherine Hayles thus: “for humans individually and as a race, incarnation precedes language: first comes embodied materiality; then concepts evolve through interactions with the environment and other humans; and finally, fully articulated language arrives” (250). The central lesson of *Galatea 2.2*, as Jon Adams puts it, is that

however much we feel like we are ethereal, floating free of the hardware that we lug around with us, we are utterly dependant upon its continued physical integrity . . .

Even if we are just programs, we can run on only one token of one type of computer – this one . . . you don't just need a body; you need a human body. (146)

*The Echo Maker* invokes the embodied mind thesis (and recalls *Galatea 2.2*) by thematising the inextricability of human physiology, human language, and human consciousness. One of *The Echo Maker*'s animating concerns is the way in which a
neurologically-rooted narrativizing impulse, partner of the capacity for language, drives the emergence of subjective selfhood. Echoing Wallace's *Oblivion*, this brain-based impulse is presented as automatic, involuntary, inevitable. The novel's plot turns on the ever-evolving self-images of each of the central three characters, and the ways in which each of them deals with their personal crises of identity.

Powers has stated explicitly that *The Echo Maker* is “a story of how the brain cobbles up a highly provisional and improvised sense of self” (“Brain”), regardless of the shifting nature of exterior reality. Weber's appearance in *The Echo Maker* is triggered when a distraught Karin phones him asking for help. Weber is initially reluctant, then sucked in by the chance to see up close “one of the most bizarre aberrations the self could suffer” (Powers, *Echo* 160). Weber's career has been focused on brain injuries that have “called into question the solidity of the self” (171), and he is obsessed with the notion that “of selves as the self describes itself, no-one had one” (382). The novel itself is rife with Weber's comments on the essentially deluded, fluid, self-generating nature of our inner identity: the neurologist refers to “improvising consciousness,” and observes how “the self's whole end was self-continuation” (301). As Weber tells his students in a lecture, “the self was a mob, a drifting, improvised posse . . . No self without self-delusion” (358). He goes on:

We think we access our own states; everything in neurology tells us we do not. We think of ourselves as a unified, sovereign nation. Neurology suggests that we are a blind head of state, barricaded in the presidential suite, listening only to handpicked advisors as the country reels through ad hoc mobilizations. (363)

The alignment of selfhood with narrative runs throughout the novel. In the wake of
his accident, Mark attempts (and fails) to “tell himself back into a continuous story” (143) while Weber and Karin “learn who he has become” (121). Mark's impulse for self-continuation survives amidst the ravages of Capgras: even housed in a horribly misfiring brain, his self would rather construct a coherent story about reality – my sister is an impostor, my dog is an impostor, my whole town is a carefully constructed facsimile – than collapse into selflessness. Better an “unthinking trust in his shattered self” (167) than a trust in selflessness, which the brain cannot abide.

Mark's paranoia is the most glaring instance of a crisis of ontology within The Echo Maker – a scenario where a consciousness is faced with its elusive, dynamic nature – but, in line with the way Capgras syndrome serves a more general metaphorical function throughout the novel, we see that Mark's crisis is only an acute version of what all the other characters also suffer. Weber arrives in Kearney as a celebrity neuroscientist and bestselling author – and departs his final visit as a man who has fled home, cheated on his wife, and come to deeply question his life and career. The slipperiness of his self becomes visceral as nighttimes become perilous limbos where his dreams are beset with visions of a sort of identity-less void where any given entity multiplies “beyond anyone's ability to simplify into names” (Powers, Echo 150). Waking semi-delirious, Weber senses his habitual “illusion of solidity” (258) as he struggles to come back to his body. Near the novel's end, he sees himself as one of his pseudonymous case studies in the process of “unravel[ling]” (414). His obsession with his writing career makes him realize that he has “worked his entire life to efface his past, no biography except what would fit on the flaps of a book” (310). We are only what we have rendered in narrative, suggests The Echo Maker, whether on the page or
within our skulls. Very late in the novel, a man mistakes Weber for “the brain guy . . . The Man Who Mistook His Life for a . . .” (449). This is a multi-pronged joke. Firstly, Weber isn't Sacks, as in Weber's universe, one presumes Sack doesn't exist, or else how could Weber? Secondly, the title of the Sacks book mentioning mistaking one's wife (not life) for a hat – and Weber has just cheated on his wife, and briefly mistook another woman for a new life. Finally, this late-stage Weber has totally lost a sense of what his life is: hence he denies he is the person he is recognised as, and the both comic and weighty implication is that he has “mistaken” his life (and the self who has lived that life) for a whole host of things down the years.

As much of the criticism has noted, as The Echo Maker proceeds, “radical disclaimers of selfhood” (Bieger 203) proliferate. The first line of the mysterious note Mark finds next to his hospital bed echoes Odysseys facing the Cyclops with the line “I Am No-One” (Powers, Echo 1) (this is also the title of the novel's Part One). We can read this as a stark statement of a proposition whose possible veracity comes to terrify every other major character in the novel. Over the months of suffering her brother's bizarre condition, Karin finds that despite “her years-long rise to self-sufficiency” she is “ready to submit” (45) to chaos. Over the course of the novel, she abandons a career, regresses to adolescent lovers, questions her qualities as a sibling in both the past and present, and loses all sense of purpose. Karin refers to her life prior to Mark's accident – a life that in the early portion of the novel she hopes to resurrect – as being centred on “the she that she had made, out of nothing” (91). As the novel proceeds, we see her tumble back toward that nothing, carve out attempts at a new she, and struggle desperately to preserve a conception of her and Mark's selves prior to the onset of
his Capgras syndrome (237). Mark's suffering makes her think “I'm invisible, a virus, a nothing” (290). Six months into Mark's suffering, she starts to wonder “what she might become . . . who she might still be, if she could no longer be the other” (291) now that Mark has “decided I'm never going to be me again” (293). Karin eventually exclaims to her former boyfriend Robert Karsh that “Mark is exactly right about me. I'm a stand-in . . . Nothing, at the core . . . He says I'm an impostor? He's right” (327). Later, she sees that “She is nothing. No one. Worse than no one. Blank at the core” (407), and after admitting her betrayal to Daniel, she reiterates it once again: “I'm nowhere. Nothing” (413). At the very end of the novel, meanwhile, the less prominent character of Barbara is revealed as an actual impostor, and after admitting her role in Mark's accident, Barbara tells Mark that “she's finished . . . she's nothing, now” (446). Arriving late, Barbara's fake identity functions as an externalised mirror of the internal improvisations and impostures of the self we have been witnessing throughout the novel.

These “radical disclaimers of selfhood” (Bieger 203) are scattered throughout a dense, long novel, but they mount up, and examined together they are telling. When Weber is on television reading from his newly released *The Country of Surprise*, he recites what could almost be Powers' own thesis statement for the novel: “Consciousness works by telling a story, one that is whole, continuous, and stable. When that story breaks, consciousness rewrites it. Each revised draft claims to be the original” (Powers, *Echo* 185). It is a telling moment, Weber reciting this notion while both Mark and Karin watch and listen, as all three characters negotiate this dynamic. Weber is drawn back to Nebraska to tell the story of Mark's “scared struggle to build a theory big enough for wetware to live in” (274). However,
within *The Echo Maker*, this is everyone's preordained, automatic struggle.

Joseph Tabbi writes that the concept of memory is *The Echo Maker*'s “design-governing concept” (“Afterthoughts” 224). Perhaps so, but memory is an important theme only insofar as it represents a secondary function of the novel's larger focus on the brain's perpetual will-to-self. *The Echo Maker* portrays and enacts the ways in which the accounts of selfhood our brains generate depend upon a (perceived) continuity: in generating self, narrating ourself is closely followed by *remembering* that narration; without a properly functioning memory, identity as we know it disappears. One recent bestseller of popular neuroscience, *Patient H.M.* (2016), focusses on “the most studied individual in the history of neuroscience” (Dittrich 8). What was discovered through these studies was that the hippocampus – which in H.M. was completely removed, as an experimental and tragically misguided epilepsy treatment – is required not only to form memories, but also to imagine the future. Weber refers to H.M. in one of his lectures (359-360). The common neurodegenerative disorder Alzheimer's disease is another case in point. As the neurologist Martyn Bracewell writes, Alzheimer's sufferers undergo a marked loss of memory, and “as their memory worsens, their sense of self dissolves”; “memory, and the ways in which memories are processed,” are revealed by the effects of their dysfunction to in part constitute “the very essence of the human condition” (167). In *The Echo Maker*, Weber's mother – “with advanced Alzheimer's, in a Catholic assisted-care facility in Dayton where he visited once a season” (*Echo* 305) – has suffered such a deterioration of self that Weber tells Mark she is “gone” (305). It is as Weber comes to question his memory of his life and career, and as Karin comes to question her memory of both her and Mark's pre-injury character, that their
sense of ontological rootedness dissolves.

Despite its being sub- or un-conscious, existing beyond our capacity for neuro-introspection, the insatiable human drive toward self-making is revealed as universal. The novel facilitates the grounding realisation that, as Harris puts it, “Mark's Capgras-driven compulsion to confabulate and fill in the blanks is merely a revved-up version of the normal brain's need to maintain the illusion of a whole, continuous and stable self” (C. Harris 236). We see this stressed further when Karin reads in an online encyclopedia that Capgras and “all misidentification delusions may exist along a spectrum of familiar anomalies shared by ordinary, nonpathological consciousness” (Powers, *Echo* 261) – and even more acutely later, when an exasperated Weber remarks “Capgras truer than this constant smoothing-out of consciousness” (448). The incessant and essentially confabulated self-making of the novel's characters is invoked in its narrative form, as well. There is a unique sort of ironic distance achieved by what Powers calls the novel's “close limited third-person focalization”, its “hybridized inside/outside voice” (“Richard”). The way the narrative only “partially participate[s] in the consciousness of the protagonist” (“Richard”) means that, as readers, we witness the process of both generating and encountering the same self. We see furthest behind the cognitive curtain with Mark, whose frenzied processes of self-making are revealed as being subjectively coherent. (Allowing for the subconscious certainty that Karin is not his real sister, Mark's paranoid theories make sense; despite its absurdity, his account of reality is internally consistent.) But we simultaneously see Mark from without, and we witness the irrational single-mindedness of his brain's will-to-selfhood and witness the absurd and devastating external effects of a brain-based “separation of affect from
perception” (Tabbi, “Afterthoughts” 227). We see the self doing its best – in the case of Mark, but also in the case of those characters not suffering from brain damage – to act as a “defense mechanism to protect us from conscious awareness of implosive incoherence” (Echo 239). This is one function of the novel's concept of echo-making – the constant calibrating of our inner self-construct in relation to outer reality, in a form of non-stop cognitive-ontological sonar.

The brain's indomitable will-to-self – and the damaging internal illusion that the self is something possessing some ontological solidity – is the area in which The Echo Maker most directly echoes the neurohorror of Wallace's Oblivion. Like those in Wallace's collection, the characters of The Echo Maker are frequently trapped in their own cognition – cognition which, recalling Galatea 2.2 and the embodied mind thesis, is an inevitable outcome of our wider physiological instantiation. (Powers' novel references Benjamin Libet's famous experiments [Potter 133-134].) Here is a fact which I haven't seen a single critic of The Echo Maker mention: In the end, Weber's quest of humanistic healing fails. He arrives in Nebraska as an author who has “built a reputation on exposing the inadequacy of all neural theory in the face of the great humbler, observation” (Powers, Echo 145). He is convinced that altering Mark's subjective account can rescue him, that “we owe him more than a simple, one-way, functionalist, causal model” (133). Weber doesn't “[want] Capgras to be treatable with yet one more newly marketed miracle pill” (311), viewing “the pharmacology onslaught” (190) as a blunt, heavy-handed phenomenon. In the end, though, what saves Mark? Not Weber's Sacks-esque empathic powers, or his careful personal explorations, but a thienobenzodiazepine called olanzapine and a course of electroshock therapy. He is aided by
forceful physical manipulation of neurotransmitters and brain tissue – a course of action which the one-dimensional, hyper-materialist Dr. Hayes has advocated all along (333). After Mark's failed non-physicalist treatment and subsequent suicide attempt (404), Weber receives the news “like a verdict, the fruit of his long, self-serving ambition . . . Tried to kill himself; because of me” (404).

Nor is Mark the only character whose wellbeing depends upon not storytelling but the physicalist tools of medical science. When Karin tells Robert she is worried about starting Mark on a course of olanzapine, he tells her she's “behind the times . . . Half the people in the U.S. are on something psychoactive . . . Forty-five percent of America, on something . . . I'm on a couple of things myself, in fact” (Echo 326). Following a breakdown in the wake of 9/11, Barbara “see[s] a pill peddler, who put me on the same stuff the rest of the nation is already taking” (435). We also learn that the Schluter siblings' father died of fatal familial insomnia (138). An extremely rare condition, “FFI” (138) represents yet another cruel dictate of biology: if it is written in your genes, no amount of talk therapy can alleviate the lethal mutation of a PrPSc protein.

As with the doubled narrative view of consciousness which serves to expose the self-making process, the unconscious power of the brain is manifest at the level of The Echo Maker's formal aspects. Harris writes that with the novel, Powers “recontextualizes the conventions of psychological realism” (C. Harris 242). The mental states of the characters in the novel, Harris writes, “reflect the inner workings of the human brain,” and the narrative “foregrounds the effects of largely unconscious neurological activities” (243) to produce the “first fully realized novel of neurological realism” (243). Other critics have disagreed:
Sabine Sielke argues that not only is it impossible for a 'character-driven' novel to perform the loops of the brain's neural 'network' and still be legible; rather than displacing the paradigms of psychology with those of neurology, many neuroscientists, including Oliver Sacks . . . emphasise how important it is that these two fields cooperate. (Sielke 257)

Harris and Sielke's critical disagreement frames in another fashion *The Echo Maker*'s broad tension between the internal human self-story and its material (selfless) situatedness – a tension at the core of how the novel functions. What Sielke fails to acknowledge is that the “paradigms of psychology” (257) – narrative, internal story, mind – are the subjective manifestations of the “the inner workings of the human brain” (243), even as they appear as something else. Weber's whole quest is an attempt to wrestle one into influencing the other. The novel doesn't perform the actual loops of the brain because neither does consciousness – via which, as *The Echo Maker* recalls *Oblivion* in lamenting, we can access only a tiny fraction of said loops. In a sense, Sielke doesn't take her critique of Harris far enough: it is precisely by reflecting the inner workings of the human brain that *The Echo Maker* reflects a conscious awareness of nothing of the sort.

“Feathered dinosaurs, a last great reminder of life before the self”: Selflessness and the Non-Human in *The Echo Maker*

Within *The Echo Maker*, the thematising of pessimistic biologism and limited picture of neuro-intersubjectivity runs far deeper than the inner experience of its characters, and this
deeper expression affords the novel its larger framing. Like so many neurofictions, *The Echo Maker* is deeply concerned with the constraints of the brain, and the central human experience of the brain's struggle to “maintain the illusion of a whole, continuous and stable self” (C. Harris 236). What has been generally overlooked in the criticism is the way this theme dovetails with another central concern: the non-human, and the selfless. As has been well-noted, *The Echo Maker* was inspired by Powers' voracious reading in the popular and academic neurosciences. But it was also inspired by a more visceral catalyst – Powers' “stumbling across” the Nebraskan migration of the sandhill cranes in 2000, which saw the author pull over and spend the night in Kearney, where he observed the birds' sunrise foraging, an experience he described as “as spiritual as anything I’ve ever felt” (Powers, “Brain”). Without ever intervening directly in its plot, Nebraska's sandhill cranes deeply influence *The Echo Maker* – known by a native American tribe, the Anishinaabe, as *echo makers*, for their sonorous call. The cranes persist in the textual background but the atmospheric foreground of the *The Echo Maker*. Unlike with the anthropocentric style of most neurofictions, one could make a strong case that *The Echo Maker* is at least as concerned with the natural world as it is with *Homo sapiens* – an idea which has been picked up in the ecocritical readings of Heather Houser, Sabine Sielke, and others.56 In a somewhat unorthodox fashion, *The Echo Maker* is a deeply ecological novel.

Mark's (non-)recovery from his accident (and the effects it has upon the other main characters of the novel) aside, the primary events of *The Echo Maker* are the migration of the sandhill cranes through Kearney and the contest between conservationists and developers for control of the Buffalo County Crane Refuge. Powers is publicly outspoken about
environmental issues – in June of 2017, he wrote with horror of how President Donald Trump had “set his developer’s eye” on the “public treasure” that is the Katahdin Woods and Waters National Monument, in northern Maine (“Keep”) – and *The Echo Maker* is shot through with ecological concern. This concern is embodied in the character of Daniel Riegel, Karin's erstwhile and once-again boyfriend. Daniel is a lifelong naturalist, bird-lover and “untiring idealist” (*Echo* 47) who has “sacrificed his life to protecting a river tens of thousands of years old” (71) and knows “all 446 Nebraska species” of bird by name (74). He lives in spartan simplicity, hates landfills, is a committed vegan and pacifist, and works for the Buffalo County Crane Refuge, a “confrontational” (47) group aimed at protecting the Platte and cranes. (“If you want to save something that's been around for millions of years, you can't be moderate” [47], Daniel tells Karin.) He is acutely aware of the ravages mankind has perpetrated (is perpetrating) against the biosphere – of the increasingly frequent instances in which we can “say goodbye to something that's been around since the Eocene” (57).

Under Daniel's influence, Karin learns these things as well: learns about how the task is “bigger than anyone” (329), about “extinction at a thousand times the normal background rate” (377). Karin even wonders if “this river might need her, more than her brother ever had” (342).

These ecological anxieties centre within *The Echo Maker* upon the sandhill cranes, which in the wider schema of the novel represent two things: the unfathomable age of the biosphere, and the utter strangeness (to humans) of non-human cognition. To the first point: *The Echo Maker* is a novel that wants its readers to realize how old they are – to be made viscerally aware of their biological inheritance, and their infinitesimal position within the
spectacularly long timeline of life on earth. The novel's first epigraph, taken from Loren Eiseley's *The Immense Journey* (1957), reads “we are all potential fossils still carrying within our bodies the crudities of former existences, the marks of a world in which living creatures flow with little more consistency than clouds from age to age” (Powers, *Echo* 1). This theme runs right through *The Echo Maker*. The anti-reductionist Weber disagrees with much of what evolutionary psychologists have to say, but, watching a crowd of people go through ape-like gesticulations as they meet and greet one another, he acknowledges that “older creatures inhabited us, and would never vacate” (231). Other little hints pepper the text: waking at dawn, Weber reflects on the “ancient physiological cycles linked to the earth's spin” (164). When Karin asks quizzically what a neurologist means by Mark's reptilian brain, the neurologist smiles and says this is something we all have, “a record of the long way here” (17). (In another parallel with Wallace's work, Powers has spoken explicitly of his interest in Paul D. MacLean's triune brain theory.) The sense of the vastness of time stretching away into the future is present as well: Weber at one point refers to how the crops growing in the fields will one day dissolve into wild grass, “no memory at all of this brief human interlude” (316). *The Echo Maker* reminds its readers again and again of how embedded they are within the long timelines of the natural world. In the novel's closing pages, Weber is sat on a plane waiting to take off and feels how “even the sealed cabin around him” is “septic with life” (448). His hands are home to “rainforests of bacteria”; “insects burrow deep inside this plane's wiring”; seeds abide in the cargo hold”; “fungus under the cabin's vinyl lining” (448). Every living “code that has stayed alive until now is more brilliant than his subtlest thought” (449).
Nebraska's threatened sandhill cranes become the nexus around which this multi-layered awareness is gathered. The cranes appear at the beginning of each of the novel's five sections, though their most sustained appearance comes at the start of the third. The narrative slips fully into its grand, lyrical register, and through a melange of Native American and Aztec mythic symbols and etymologies from across the globe the crane is portrayed as a sort of primordial, archetypal symbol of ancient time and the deep history of the biosphere (Echo 181-183). Central to the cranes' narrative function is the novel's swinging between presenting the birds as our cousins, our biological and spiritual kin – and as bizarre beings, almost extraterrestrial in their oddness. At times, the novel gestures toward what – in terms of our physiology, our neurology – we as humans share with the cranes. When a semi-delirious Mark suggests to Weber that they help him by transplanting a crane brain into his own, Weber finds that “something in him wants to say: no need to swap. Already there, inherited. Ancient structures, still in ours” (416). The Echo Maker's consistent, lyrical references to water also point to a basic commonality in which the birds represent “older kin still perching on [our] brain stem, circling back always, down along the bending water” (451). At one point, Weber dreams of a small boy, perhaps Mark, “watching birds taller than he” and, in seeing them “beat their wings,” “beat his” (384). Here, filtered through dreamlike vagueness, is where the novel gets closest to presenting humans and birds as in some sense a continuous species. The image evokes prehistoric human artwork, which frequently and cross-culturally featured therianthropes or animal-human hybrids – as in the case of the well-known 35,000-year old Löwenmensch figurine.

However, contra to this hinted-at primordial familiarity, even kinship, runs the deep
strangeness of the cranes, and – most crucially – their non-human cognition. Throughout the
novel, for every moment of familiarity, there emerges an equal measure of estrangement
(often within the same sentence). At every turn, Powers skilfully portrays the cranes as both
uncannily familiar and entirely foreign: “cranes are souls that once were humans and might
be again, many lives from now. Or humans are souls that once were cranes and will be again,
when the flock is rejoined” (Echo 182). This dual-aspect perception of cranes – as kin in one
moment, utter strangers in the next – speaks to the way The Echo Maker extends a
metaphorized version of a stubborn (yet potentially beatable) Capgras syndrome to describe
the nature of the human gaze towards the wider biosphere.

The crucial difference – the schism between the two halves of “the flock” – has to do
with The Echo Maker’s first concern: the self. The novel is dominated by our view into the
ceaseless self-making of its human subjects, whose images of themselves drive the plot.
However, cranes don’t possess selves, at least not in anything like a human sense – a fact The
Echo Maker makes abundantly clear. That we have a self, even if we are deluded about the
real nature of that self, is, as Weber points out, the result of evolutionary pressures which are
unique to Homo sapiens – “the work of mirror neurons, empathy circuits, selected for and
preserved through many species for their obscure survival value” (Powers, Echo 383).
(Mirror neurons, a compelling neuroscientific concept, receive much attention from
Hustvedt, as I discuss in chapter 4.) Cranes have not undergone the same evolutionary
trajectory. Their “prehistoric” (98; 422) chorus stretches “back into the Pleistocene” (422)
and reminds us that they are “feathered dinosaurs, a last great reminder of life before the self”
(277). The human, meanwhile, encompasses the entirety of life after (and with) the self. The
human is “an animal perpendicular to all the others” (447) precisely because of its unique capacity for selfhood. The internal and incessant self-making processes that dominate so many hundreds of pages of The Echo Maker are an aberration within nature.

“Yet humans wave them off: impostors”: Cognitive Exceptionalism, Ecological Destruction

Humans, then, are alienated from their non-human cousins. But The Echo Maker goes further, and within the schema of the novel this ontological difference – the grounds for what Jean-Paul Sartre called “the strange reciprocal mystification which is the relationship between man and animal” (qtd. in Bakewell 223) – is presented as being at the root of humankind's tendency to ecological destruction. The novel's deepest metaphorisation of Capgras syndrome arrives with the novel's suggestion that its human characters are suffering from a collective Capgras syndrome – not toward other faces, but toward the rest of the natural world. Just as Mark doesn't recognise Karin as a relation, within the novel, humans can't recognise cranes – symbols of the biosphere at large – as our kin.

This isn't to say such a stance is inherently impossible: By invoking Native American traditions – and recalling explicitly the travesty of the Indian Removal Act of 1830 (Echo 392) – the novel calls back to human cultures and communities who didn't suffer from this collective Capgras. The novel implicitly recalls those who, prior to their “removal,” could recognise the wider biosphere as their kin, did regard themselves as (to quote Standing Bear) “of the soil” (qtd. in Porter 17) and drew on what we might call anti-Capgras, animist traditions (Descola). However, while human consciousness isn't necessarily presented as a
sufficient condition for biospheric Capgras syndrome, it is presented as a necessary one. And the capacity for ecological harm is intensely potentiated by the industrialised modernity of 21st-century America from which Powers' novel emerges. As Yuval Noah Harari puts it, “prehistoric humans . . . were insignificant animals with no more impact on their environment than gorillas, fireflies or jellyfish” (2) – but no more. Tellingly, a couple in Generosity (2008) – the Powers novel following The Echo Maker – concur that “the human race would have been better off if the agricultural revolution had never happened” (90). (The agricultural revolution being the process that ended millennia of hunter-gathering and catapulted the species into the position of dominant species.) However, what The Echo Maker suggests is that the real casualties of the agricultural revolution were all the other species on earth. As Elizabeth Kolbert writes,

there is every reason to believe that if humans had not arrived on the scene, the Neanderthals would be there still, along with the wild horses and the woolly rhinos. With the capacity to represent the world in signs and symbols comes the capacity to change it, which, as it happens, is also the capacity to destroy it. (250)

When Daniel states that what the ecological movement needs is “something to wake sleepwalkers . . . to make the world strange and real again” (Powers, Echo 339), he is essentially asking for an alleviation of our species-wide Capgras – a turn toward those familiarising passages of Powers' descriptions of crane-human relations and away from the alienating ones. We have stopped noticing the world, the novel suggests, and need to discover it anew, in all of its attention-grabbing strangeness. (The outlook recalls that of the famous conservationist Rachel Carson, who declared that “the more clearly we can focus our
attention on the wonders and realities of the universe about us, the less taste we shall have for
destruction” [94].) We need, suggests the novel, to perceive that the natural world is real in
the sense that it is made of the same stuff as us – and that it is, or should be, a loved one.
There is a moment where Powers makes this explicit. Karin, listening to a town hall debate
over the construction on the Platte river of “a sprawling tourist village for crane peepers”
(Echo 346), has something of an epiphany:

A wave moved through her, a thought on a scale she'd never felt. No-one had a clue
what our brains were after, or how they meant to get it. If we could detach for a
moment, break free of all doubling, look upon water itself and not some brain-made
mirror . . . For an instant . . . it hit her: the whole race suffered from Capgras. Those
birds danced like our next of kin, looked like our next of kin, called and willed and
parented and taught and navigated all just like our blood relations. Half their parts
were still ours. Yet humans wave them off: impostors. (348)

The “separation of affect from perception” (Tabbi, “Afterthoughts” 227) at the heart
of Mark's Capgras extends into the book's wider setting, with eco-critical implications.
Humans can (with effort) perceive that birds resemble something to do with them, but for the
most part they can't feel that they are in fact family. If Mark's Capgras syndrome is – as
Weber describes it, within a longer paraphrasing of Antonio Damasio's work – rooted in the
way a “lack of emotional ratification overrides the rational assembly of memory” (Echo
106), then so is the human species, particularly when acculturated by 21st century America.
The novel knows that we are of the biosphere just as much as the cranes are (the creationist
stance of the Schluter siblings' hyper-religious parents is given no credit) – but there is that
same lack of emotional ratification. Only Daniel appears consistently capable of
acknowledging “everything outside us that must be recognized” (408). Tellingly, Karin herself even fails. Despite acknowledging the race's “collective Capgras” (348), she soon after declares “birds don't even have a self! Nothing like us. No relation” (424).

“A need to be no-one”: Desiring Self-Annihilation

Laura Bieger has noted *The Echo Maker*'s “idealization of 'selfless'/crane existence” (213), and the novel's general atmosphere of “disillusionment with the self” (215). Central to my argument here is that these currents are more acute than Bieger suggests. The presentation of non-human life in the novel adds up to more than a vague, wistful veneration. *The Echo Maker* – like Wallace's *Oblivion* before it – expresses a deep ambivalence about the ultimate worth of human selfhood. As mentioned in Chapter 1, it is a mainstay of philosophical systems as diverse as Stoicism, Buddhism, Schopenhauerian pessimism, and modern Flow psychology that what the biologist Theodosius Dobzhansky called the “evolutionary novelty” (qtd. in Leary 3) that is human selfhood is essentially a problem. Mark R. Leary's *The Curse of the Self* skilfully lays out the ways in which possessing “the mental apparatus that allows people . . . to think consciously about themselves” (5) causes a host of problems. Capgras syndrome – for Mark personally, and in a metaphorical sense, as the cause of suffering felt by the wider ecology at the hands of humans *en masse* – is rooted in “the dread that only consciousness allows” (*Echo* 450). Within the novel, cranes are really a stand-in for the animal kingdom in general, which knows nothing of the suffering of the self as we understand it.  

By contrast, throughout the novel, there is a consistently admiring characterisation of
the cranes, who recall “yesterday, last year, the sixty million years before that” (*Echo* 278) in a way that humans – cut off from their raw biological roots by the incessant movements of the cortex – cannot. The birds recall their past in their biology, in their cells, even as any given crane's “past flows into the now of all living things” (443). What we feel as the exceptionalism of selfhood is actually a sort of cosmic isolation – something Weber comes to feel acutely. As Michael Wood puts it in a review of *The Echo Maker*, “those birds know what they are doing, even if they don’t have a story about it. Our problem is that we can scarcely imagine a form of knowing that doesn’t have a story attached to it” (8). Mark's comatose, pre-linguistic psychic sojourn leads him to declare of human language that we “make such sounds, just to say what silence says better” (*Echo* 49), while animals and rocks “say only what they are” (49). Cranes recall the river in a language and alphabet “sixty million years older than speech” (443), while humans are condemned to “live in unclear echoes” (183). It is in his return to the embodied mind of the human that Mark is once again mired in these unclear echoes. Our linguistic dislocation is mirrored by a geographical one: cranes have been making the same stretches of land their home for millennia. The humans of *The Echo Maker*, meanwhile, all seem rather lacking in somewhere to call home: Mark believes his home is like a stage set on *The Truman Show*; Karen is adrift between two half-homes; the siblings' visit to their family home rattles them with feelings of alienation; Barbara has fled her home and made a fake new one; Gerald's departures and returns to his nominal home estrange and unmoor him. In a sense, the cruel joke at the heart of *The Echo Maker* is that the cranes have a very serious depopulation problem, but no issue with managing the burden of consciousness – and humans have the reverse. Both these
predicaments hint at some coming disaster. Cranes cannot “compete with consciousness” (378); but neither, in their own way, can humans. Our brain's will-to-self cuts us off from the environment, in an estrangement we feel as an almost spiritual wound – and then, in a cruel irony, this same neurological setting allows us to mistake the natural world for a stranger, and destroy it.

One possible solution to this predicament explored by *The Echo Maker* is a simple but drastic one: escape the self. Another underappreciated feature of the novel is the way it dramatises Weber's quiet but intense quest for a sort of self-annihilation, or an ascension to a more crane-like form of cognition. On his repeat visits to Nebraska – increasingly unjustifiable, professionally or financially, even though he tries to persuade himself otherwise – Weber undergoes a series of pseudo-mystical moments, all involving a communion with various sorts of nature, and he becomes more and more estranged from the public Weber we see in the novel. Weber perceives vast, “stark, minimal” (*Echo* 316) Nebraska as “one of the last places left in the country where you would have to face down the contents of your own soul, stripped of all packaging” (316). Barbara, who also harbours a strange, secret longed-for “vanishing” (325), becomes a sort of psychological enabler; Weber falls for her at least partly because in her he “recognized the vanishing that he, too, was after” (325). Part of Weber's adulterous attraction to Barbara is that around her he has “fabricated an entire hypothetical life” (352), and he perceives her as ethereal, possessing “an aura of having evaded life” (353). Barbara is a “totally unreadable story” (354), in stark opposition to his own over-determined and frenziedly improvising story of self. Feeling the total burden of selfhoods he cannot believe in or continue to perpetuate, Weber looks at
Barbara and sees that she “already lived in the void he was entering” (363).

This 'void', of course, is the void cranes already live in, have lived in for sixty million years. Weber remarks at one point of the word unconscious (un-conscious) that it is “wrong, that the negation should stand for something so many billions of years older than the negated” (Echo 421). Crucially, the moments in the book when the imperfect echoes of human communication and incessant, deluding self-making cease are when they are overridden by a simplicity that is distinctly animalistic. Midway through the novel, foreshadowing their forthcoming adultery, Weber and Barbara dance together. Convincing him to take to the dance floor, Barbara insists that “everything alive dances” and tells him to simply move “like you're catching bugs” (324) – an activity which cranes actually do partake in. Once he gets moving, Weber senses that she “was right: everything alive shook itself under the pull of the moon,” and feels like an “autumn-honking fledgling” (324). Recall that Karin's epiphany about “the whole race suffer[ing] from Capgras” (347) acknowledges that “those birds danced like our next of kin” (347). Later, watching a pair of cranes courting, Weber is reminded of himself “in the roadside dance house, alongside Barbara Gillespie, wrestling his body into joy” (423).

At the height of his identity crisis (and adultery), Weber “wills himself downward,” and finds that “there is a need to be no-one, one that will forever hide its precise location from neuroscience's probes” (Echo 426). What Weber craves is a sort of cognitive revision of the Freudian death drive; a desire to escape the burdensome acrobatics of the human mind. It's no coincidence that this feeling intensifies in Weber in direct proportion to the amount of time he spends observing the cranes, who possess “pure wildness, all the hard intelligence of
simply being that Weber has forgotten” (424). When Karin tells Weber that “something's happened” to him, Weber “sees that something, thousands of it, combing the fields, a whisper away” (424). As with the John Donne poem he vaguely recollects, a part of Weber wants to become his “own Executioner” (427) and join the cranes in selfless simplicity. He finds glimpses of this in the self-destructive tumble into a romance with Barbara: dancing together, but also while making love. As she embraces his weeping frame, Weber finds that he has “precipitated out. Nothing left but sensation” (428). When they kiss, “thinking goes. Everything goes except this first need” (429). This first need, of course, is one shared by all species, not least cranes, who Weber has earlier watched go through their own mating rituals. As “they flood each other,” in the dawn presence of the Platte and the birds themselves, Weber tastes a “release” (430). Try as he might, however, the sense of “vanishing in mid-prairie, lift[ing] free of everything . . . hovers just out of his reach” (430). A crane-esque, selfless existence might be acquirable in glimpses. But human neurology is inescapable, dragging Weber back from this “release” into selflessness into the business of being – that is, possessing the self-making brain of – Gerald Weber.

Weber's drive toward a sort of selflessness finds a broader expression in the naturalistic expansiveness of *The Echo Maker*'s narrative, which at times verges on a sort of quiet misanthropy, an expression of utter indifference towards the unique sort of subjectivity which is at the root of all human exceptionalism, is the source of our species-wide Capgras towards the rest of the natural world. There are consistent references to the notion that the biosphere has no need of us, and that should we ever perish, it will gladly persist without us – just as it did already, for hundreds of millions of years. Humans are “a species that won't be
rehabilitated and can't be beaten” (Echo 409) – except that in the fullness of the march of
time, all species will be beaten. In the final section of The Echo Maker, the narrative slips
into an objective, grandiose tone for the final time and portrays the essential futility of all
human striving, its meaninglessness when viewed against the fullest backdrop of time and
place:

Extinction is short; migration is long. Nature and its maps will use the worst that man
can throw at it. The outcome of owls will orchestrate the night, millions of years after
people work their own end. Nothing will miss us. Hawks' offspring will circle above
the overgrown fields. Skimmers and plovers and sandpipers will nest in the thousand
girdered islands of Manhattan. Cranes or something like them will trace rivers again.
When all else goes, birds will find water. (443)

“Nothing will miss us.” The same disembodied, oracular narrative voice – serving
always to demote human concerns and human life – appears in Generosity: “Down the hill
on the rock-scattered coast, a stand of spruce bends out over the contesting water, as they
have for longer than people have been here to see them” (231); and later, “the air smells of
sap, as it must have smelled for millions of years before the first flicker of awareness” (285).

Sielke writes that at times The Echo Maker “playfully simulates what a radical
ecological and evolutionary perspective feels like” (255). However, I don't think this
simulation is all that playful. In Karin's contemplative vision of “the scale of life . . . a nature
so swarmingly wasteful that no single experiment mattered” (Echo 75), the experiment is any
given human life. Karin comes to find that “everything human and personal horrifies her”
(408) – and she isn't being playful. Harris rightly describes Karin's dream – in which she is
floating above the Platte, the land is lacking “large life of any sort” (C. Harris 418), and all of biology is “microscopic, vegetative” (418) – as evoking “the post-apocalyptic vision that haunts the novel” (247). The difference is that, contrary to the usual implications of that phrase, in *The Echo Maker*, the apocalypse of human selfhood is one Weber has already been craving, and which in the ecological scheme of the novel is no tragedy.

“Signals cascading through the fragile ecosystem”: Echo-making as Redemption

If this was where *The Echo Maker* ended – the determinism of human brains condemns them to incessant but cognitively closed processes of self-making; the knock-on effect of this is to blind them to their relationship to the rest of the biosphere, alienate them from the rest of creation, and facilitate their destruction of the planet, however much they try and escape such tendencies – then Powers' novel would be a work of neurohorror to stand alongside Wallace's *Oblivion*. Despite all this, though, *The Echo Maker* emerges as a quietly optimistic work of fiction, ultimately rejecting pessimistic biologism. How?

The novel's clearest critique of human exceptionalism (and even occasional misanthropy) is embodied by Daniel – who on first reading can seem to represent the highest philosophical hopes of *The Echo Maker*, but is ultimately revealed as a limited and limiting figure. As discussed, Daniel is the vehicle for the novel's honest environmental lamentations – and if the species is suffering from Capgras syndrome, then he wants to be its therapist. In a quieter yet fiercer sense, Daniel, like Weber, perceives a vanquishing of the self as one solution to the predicament(s) of the novel – and he pursues this vanquishing through a dedicated meditative practice. (In Buddhist traditions, the goal of meditation is *anattā*, a
release from worldly suffering that follows the eliding or erasing of the self.) Daniel (Karin observes) “simply wanted people to be as selfless as they should be, humbled by the million supporting links that kept them alive, as generous with others as nature was with them” (Echo 54). He “needed humans to rise to their station: conscious and godlike, nature's one shot at knowing and preserving itself” (57). At times Daniel even seems to embody a sort of Platonic naturalistic altruism; Karin remarks that he “seemed to need nothing but the chance to give” (94), and that this “care” (94) was more strange and otherworldly than any of the damaged brain states documented by Weber. Daniel believes that “drawing even one more cup of water out of an already breaking biome was unconscionable” (346). His genuine ecological consciousness is contrasted with the half-hearted aspirations of the local motels, in the bathrooms of which Weber reads signs imploring nameless customers to “save the earth” (299) by re-using a towel.

Despite his admirable regard for the environment, however – and this is at the heart of The Echo Maker's complex environmental and philosophical outlook – Daniel is a curiously opaque character. He might initially seem to represent the novel's ethical high water mark, but in important ways he is not really in the novel at all. Crucially, Powers never affords us a view of reality from his viewpoint. Just as Mark represents a halfway house between selfless matter and human until he awakes from his coma (Echo 43), Daniel represents a mid-station between involvement in the human and embeddedness in the non-human (eventually ditching the former). Karin calls him “the most mystical person I know . . . always proclaiming some living essence we can't even . . .” (72) – but Daniel's mysticism is zealously pantheistic. The “forces bigger than us” (73) he appears to bow to feel
decidedly non-anthropocentric. Karin suspects that “our paths mean nothing” to the forces Daniel perceives (73). She is right, and Daniel's refusal to engage in the human network of echo-making selves is finally revealed – like Weber's desperate attempts to achieve a crane-like purity of cognition – as a misguided project.

Where *The Echo Maker* finds its optimism is not in Daniel's monasticism, retreat, and committed self-abnegation, but in a belief, contra Wallace's *Oblivion*, in our ability to absorb narratives from beyond the confines of our own subjectivity. *The Echo Maker* is shot through with examples of the powerful influence of collective narratives. On the fourth of July, Karin, Mark, and Mark's friends gather to celebrate the 1776 adoption of the Declaration of Independence by watching fireworks and “listening to the Mormon Tabernacle Choir singing patriotic lyrics” (*Echo* 214) and “deeply affirmative Christian country rock” (216). The town “could no longer afford” this “barrage of light” – but it “couldn't do without” (217) it. Mark's girlfriend works at an Interstate archway monument that stages, for the benefit of tourists, a mock-up of the old West. Bonnie dresses up as “a pioneer woman” (39), there are “tepees lining the exit ramp” (39), a “simulated buffalo stampede” (39) – all for $8.25 a head. When she arrives at the fourth of July celebrations in full getup, Mark says “I miss all that shit” (215). The impetus for Barbara's fleeing New York for remote Nebraska, meanwhile – the 9/11 terrorist attacks – has already been instituted as a milestone in the American cultural memory and collective calendar.

For Powers, what is crucial to identity is not only personal memory, but *shared* memory, interpersonal memory. *The Echo Maker* is committed to the notion that, as Ian Hacking puts it, “memory . . . is more relational than solipsistically individual . . . more in
the realm of ‘human social behaviour’ than merely personal recall” (“Get” 21). What we discover over the course of the novel is that the echo-making of selfhood (of which memory is a crucial feature) is anything but a solo task. Just as maintaining a collective past involves constantly recalling it and acknowledging the echoes it sends back, the self is not just “a mob, a drifting, improvised posse” (Powers, *Echo* 358) – it is a drifting, improvised mob which relies continuously on other drifting, improvised posses for direction and validation. In *The Echo Maker*, with its reference to Donne (427), no man or woman is an island. All of the characters, as they tumble into crises of self-definition, reach out keenly and desperately to other people – Karin to her ex-boyfriends, Weber to Barbara, Barbara to Weber, Mark to Barbara and his friends – and discover (whether they realize it or not) that they can only be understood through these people. When an exhausted Karin laments to Daniel “I'm not her. I'm just a simulation. Something you invented in your head” (290), she is reacting to the bizarre pressure of her brother’s injury, but she is actually speaking to the ontological stance of the whole novel. *Everyone* else is only something we invent in our heads. At the height of his crisis, ignoring a call from his wife so that he can go on kissing another woman, Weber declares that he is suffering the “first case ever of contagious Capgras” (430). (When the spell is broken, he declares of Barbara that “she is someone else” [433].) Our perceptions of other people and how the echoes of those perceptions alter our self-images are flexible, always serving that current moment's drive towards self-assembly. When Weber says that “there was no story *itself* . . . just part of the distrusted network, signals cascading through the fragile ecosystem” (221), he is talking about his writing – but we have witnessed him equate his own flesh-and-blood identity with his written identity, and his remark can just as
well apply to the social aspect of selfhood. All of personality is a processing of echoes.

Humans do not learn to speak if they are not spoken to, and can’t survive without parenting.

A surefire way to shatter someone's psyche is to commit them to solitary confinement.

*The Echo Maker*'s resistance to the pessimistic biologism of *Oblivion* is rooted in this commitment to the basic distributedness of identity, a belief that we are (neuro-)

“intersubjectively connected to other selves” (C. Harris 237) in a way that is not complementary or secondary to our ontology but central. To possess a self, *The Echo Maker* makes clear, is to engage in a sort of subjective mapping in which multiple other narratives are implicated. Selfhood is both map and territory. (Here is an example of Powers' often-occluded indebtedness to postmodernism: there is no outside to the network of signs, in mind or in art.) This is where Daniel fails as a model for how to remedy the various ills of the novel. He has ideals, but he is deeply cut off from other humans, “liv[ing] like an anchorite and meditat[ing] four times a day” (Powers, *Echo* 71). He is devoted to Karin, but otherwise his human echoes are almost non-existent. When he retreats from bickering to meditate, he strikes Karin as “tranquil and removed” (73) in a way that leaves her feeling “abandoned” (73). Daniel states that his meditation “makes me more . . . an object to myself. Dis-identified” (73). This is a significant remark in a novel centred on people struggling to identify as *subjects*. Daniel's impatience with the human race – “natural selection's brief experiment with awareness” (432) – eventually sees him abandon the novel's other human characters altogether, heading for Alaska and the crane's breeding grounds. Within the schema of the novel, this equates to a sort of failure. As Harris points out, “each of the characters learns to perform acts of care, bringing back someone, including improved
versions of themselves, except for Daniel” (C. Harris 249).

By contrast, Weber, despite his brief, desperate, adulterous quest for selflessness, returns to the world, and returns a wiser man, more in tune with the slipperiness of his sense of self. In the novel's closing paragraph, a guilty Weber hopes his wife will be there to greet him at the airport with a sign bearing his name. He “needs her to be there,” and the card needs to be “printed cleanly so he can read it” (Echo 451). “She will be the one holding it, and that is how he must find her” (451). This closing scene represents a stark example of the collective echo-making venture of building a self. Having fallen apart, having actually craved dissolution, Weber needs to find himself once more. He can only do this if another consciousness is present, transmitting echoes in the readable signs that are the raw currency of the language with which embodied human selfhood is so deeply entangled. Daniel has vanished, and Weber has returned to the world and its network of selves; in The Echo Maker, only the latter is the viable ethical decision.

“I was not it”: The Emersonian Optimism of The Echo Maker

Ultimately, despite taking the challenge of pessimistic biologism very seriously, The Echo Maker reveals the self to be redeemable in ways unavailable to Oblivion's “souls in isolation” (Boswell, “Constant” 151), with their impermeable inner worlds. Instructive here is Powers' debt to the Transcendentalist thinking of Ralph Waldo Emerson, as explored by Dewey (in what remains the only book-length critical study of Powers). Dewey's study maps how Powers centres all of his work on “the conflicting visions of Emerson and Dickinson, bold affirmation and the drive to connect on the one hand and the anxious questioning and the
need to withdraw on the other” (5). His novels, Dewey states, feature characters who shift
together “the Emersonian impulse to connect . . . [and] embrace the difficult ad-lib of the
world” and a Dickinsonesque “need to recoil from its evident bruising into the supple
sanctuary of the aesthetic enterprise” (6).

By these standards – Dewey's book was published prior to *The Echo Maker* – one
might offer *The Echo Maker* as one of Powers’ most engaged, Emersonian works. There is no
simple celebration of *Homo sapiens* here. At times the novel really does seem to be disgusted
with “the poison of personality” (*Echo* 408), it idealizes the selfless purity of non-human life,
and Karin's epiphany that “the whole race suffered from Capgras” (348) represents the great
metaphorical gesture of the novel. However, in keeping with the project of many
neurofictions, *The Echo Maker* ultimately defends the privileged role of human
consciousness. Following Dewey's reading, this defence takes the form of a celebration of
the Emersonian “drive to connect” (5). Via the narrative living experiment of the characters
of Weber and Daniel, *The Echo Maker* discovers that, ultimately, there is no escaping the
self. But an escape from pessimistic biologism is made available by the novel's discovery
that human cognition and human selfhood is flexible, permeable, and intersubjectively
connectable – capable of the adoption of narratives exterior to the confines of the individual
skull.

In keeping with the notion – covered at length in my introduction – that contemporary
neurofiction often displays an obliquely spiritual impulse to go beyond forms of scientific
nihilism, *The Echo Maker* evokes a sort of mysticism that feels distinctly Transcendentalist.
Emerson himself wrote that “the disease with which the human mind now labors is the want
of faith” (410), but what he referred to as God (or the Universal Soul) was not a deity but an abstract numinous power, a vast connective tissue of material realities. So it is with *The Echo Maker*. The novel combats pessimistic biologism (and pessimistic environmentalism) via a belief in the transformative flexibility of human consciousness, a belief that equates to a form of what has been called spiritual ecology. In an interview, Powers remarked that

meaning always depends on our feeling connected to something larger than us. But if our fundamental sense of what it means to be human is predicated on the belief that it's something qualitatively different than anything else that exists, it's hard to know what that bigger thing is supposed to be. (“Richard”)

Herein lies the danger of that species-wide Capgras syndrome: by forgetting our embeddedness within the rest of existence, we shut ourselves off to the potential for meaning, the nebulous substance that *The Echo Maker*, like so many other works of neurofiction, is attempting to recover from a neuroculturally updated picture of what Max Weber called the disenchantment of the world. *The Echo Maker* is shot through with a mysticism evocative of Emerson's belief that “every chemical substance, every plant, every animal . . . teaches the unity of cause” (118). Witness one of Weber's late monologues, too long to quote in full here, which invokes the long evolution of the human mind, its slow development to the point where

some billions of years and hundreds of billions of neurons later . . . these webbed cells wired up a grammar . . . Those recording synapses, bent back onto themselves – brain piggy-backing and reading itself as it read the world – exploded into . . . microscopic electro-etched worlds within the world, a shape for every shape out
there, with infinite shapes left over: all dimensions springing from this thing the universe floats in. (Powers, *Echo* 364)

This passage and others combine a vision of the sublime in which the object of terrified awe is our own evolved biology with what Dewey describes in Powers' earlier novel *Prisoner's Dilemma* (1988) as a “glowing Emersonian appreciation of the great cycles of biological life that wheel so furiously and unacknowledged all about” (44). *The Echo Maker* arrives at the same conclusion as Joe, in Ian McEwan's *Enduring Love*, who states “we were no longer in the great chain. It was our own complexity that had expelled us from the Garden” (207). Yet *The Echo Maker* seeks to stay in touch with the great chain – that great chain in which cranes have been unwaveringly embedded for sixty-million years – by advocating a humbling of ourselves. That is, our selves. In the context of *The Echo Maker*, McEwan's use of capital-G Garden is instructive. Powers himself has said that he wants to find some degree of recognition of the tenuousness of the process of self-narrating, and some degree of acceptance of the improvisatory nature of the self. . . . It's that vulnerability, that giving-up of narrative, that allows you to be more fluidly part of narratives that go beyond you. (“Richard”).

This “vulnerability” evokes the humility and submission of many spiritual traditions. *The Echo Maker* goes to great lengths to expose to readers – via both subtle subjective representation, and either thinly veiled or entirely unveiled examples of real-life (neuro)scientific experimentation – the true nature of the self: as a fluid and improvising process of mind, reliant on intersecting processes of narrativizing, recalling and forgetting, whose chief job is to “protect us from conscious awareness of implosive incoherence” (*Echo* 127).
Insofar as the novel has an edifying denouement, it is because at its close, each of the characters has come more to terms with their ontological slipperiness, and – as per the final line of the mystery note, which it fittingly turns out Mark unknowingly wrote himself – they have proved themselves able to bring back someone else: that is, a new *them*. This relaxing of the myopic clinging to a deludedly fixed idea of one's self – an Emersonian impulse to “embrace the difficult ad-lib of the world” (Dewey 6) – is at the root of all the positive character developments in *The Echo Maker*. It is in letting go of rigid ideas about his writing and his public identity that Weber can begin to move beyond his crisis. Karin's realization that she is a malleable, fluid person – that there is no need to reconcile who she was in high school with who she was before Mark's accident and who she might be next week – prefigures her coping with Mark's condition. Even Mark, at the end, is able to say of his ontological situation: “Whatever you call all this. Just as good as the real thing” (Powers, *Echo* 431).

The giving-up of an overly self-centred narrative is in turn proposed as the route by which we might reconfigure our relationship to the environment – a sort of diluting of the incessant self-making of human consciousness with the no-self of non-human ecology. This is the truly profound moral proposal of *The Echo Maker*. In Powers' *Operation Wandering Soul* (1993), Dewey locates a “vibrant Emersonian conviction, bolstered by the luminous testimony of life sciences, of a sacramental dimension to organic phenomena” (74). In *The Echo Maker*, the transcendentalist imperative is to allow the narratives of this sacramental dimension to flood the foundations of the self, to bring both elements together in a unified view of the Oversoul. Joseph Tabbi has described how Powers' writing (in works which
precede *The Echo Maker*) “produces the literary equivalent of an ecosystem” (61). We might perceive a connection here to Donna J. Haraway's argument that “multispecies flourishing on earth” will require combining “human and other-than-human beings in kinship” (2) through a form of “material semiotics” (4).

In *The Echo Maker*, the spectre of pessimistic biologism is resisted through a vision of the narrative imagination as almost literally world-making, and deeply embedded within the Emersonian numinosity of the biosphere. It is for this reason that *The Echo Maker* – often read within an ecocritical framework – is such a nontraditional piece of environmental fiction. I am in agreement with Houser when she concludes that Powers doesn't fit with a lineage of writers who more straightforwardly hope to “increase readers’ awareness of their surroundings as a way to promote ecological protection” (383). The novel's unique manoeuvre is to “anchor environmental representation to cognitive processes” (404), and suggest that the only way to move human concerns beyond the human is by moving them through the human. As Rachel Greenwald Smith puts it, *The Echo Maker* is

a novel that provides a human-centered narrative but places it in relation to other narratives with other centers, other temporalities, and other forms of motivation. The result is a form that produces enough identification to pull readers in and enough recognition to unmoor those readers’ expectations, placing readerly emotions and nonhuman affects in relation to one another, articulating their connections, and, the novel seems to hope, instigating a sense of affective connection that reaches beyond the concerns of the narrowly human in the process. (122)

What the novel ultimately suggests is that the cosmic split between human/self and non-human/no-self might just be overcome by envisioning the ways in which the two realms
are indelibly interdependent – by the acknowledgement that, as Emerson put it, “nature [is] the circumstance which dwarfs every other circumstance” (364). Herein lies the mystic holism that *The Echo Maker* subtly, obliquely invokes. As Heinz Ickstadt puts it, *The Echo Maker* displays an “awareness of an infinite network of relations: of mind and nature, of mind in nature – a unity pervading all particularities that constantly unfolds in an open-ended process of creation in which fiction and the fiction-making brain take part” (40). The novel's scientific mysticism is almost pre-religious in its flavour, reminiscent of Emerson's belief that – when one is engaged in a correct relationship with the cosmos – “no history, or church, or state is interpolated on the divine sky and the immortal year” (365). Indeed, if anyone in the novel represents what Dewey characterises as Dickinsonesque withdrawal (the reverse of Emersonian engagement), it is the figure of the ascetically altruistic Daniel – who appears briefly to embody the novel's ethical vision, before being ultimately undercut. Our relationship to the world-at-large, *The Echo Maker* suggests, will only be repaired not by removing ourselves from its processes but by engaging with them more deeply and more profoundly.

To use two of Emerson's phrases, *The Echo Maker* could be seen as attempting to reconcile what he called the infinitude of the private man with the idea that nature “is the organ through which the universal spirit speaks to the individual and strives to lead back the individual to it” (32) – a blending we can read as a uniquely (neo-)Transcendentalist attempt to repair the explanatory gap so central to neurofiction. That Dewey can trace this impulse right back to Powers' earliest novels tallies nicely with Sielke's notion that for Powers “the alarmist 'surprise' at how neurophysiology cancels out established notions of self and soul
itself comes as a surprise” (253). “The Echo Maker rather credits literature with having complicated cognition all along” (253), writes Sielke, already finding the non-unified self expressed within “an American transcendentalist tradition” (253-254) for whom Emerson is a major touchstone.

The essential, transcendental networkedness of human consciousness, its reliance on the making of echoes, offers a way to go beyond ourselves in redemptive ways. Examining the “curse” (Echo 384) of consciousness, Weber resolves that the “one consolation” is that some part of us could model some other modeller. And out of that simple loop came all love and culture, the ridiculous overflow of gifts, each one a frantic proof that I was not it . . . We had no home, no whole to come back to. The self spread thin on everything it looked at, changed by every ray of the changing light. But if nothing inside was ever fully us, at least some part of us was loose, in the run of others, trading in all else. Someone else's circuits circled through ours. (384)

This notion, Weber tells himself, constitutes “all the insight that he ought ever to have needed” (Echo 384). That notion that “some part of us could model some other modeller” speaks to a form of neuro-intersubjectivity that is entirely unavailable to the cast of Wallace's Oblivion, and profound in its potential for resisting the shadow of pessimistic biologism. Later, near the end of the book, Weber remarks that “yes, life is a fiction. But whatever it might mean, the fiction is steerable” (433). The fiction is steerable; in this lies all the hope of The Echo Maker, a hope absent from the existential landscape of Wallace's neurohorror. The Echo Maker is every bit as clear-eyed as Oblivion in its assessment of the limitations of the human animal, and Powers is acutely aware that he writes in an era, as Dewey puts it, “bent
on diminishing the individual amid a colossus of forces whirring about a universe far bigger and emptier than the mind can conceive” (14). But “like Emerson and Whitman more than a century ago, Powers understands that readers come to literature for affirmation” – the affirmation that follows the comprehension that “every individual is part nevertheless of a vast, intricately patterned whole” (Dewey 149). The Echo Maker’s exploration of how one can elide pessimistic biologism via an appeal to neuro-intersubjectivity – and its mapping of the difficulties and contradictions of such a process – persist as the framing for the subsequent chapter, focussed on the most notable British author of neurofiction: Ian McEwan.
4. “But in general, the human disposition is to believe”: Atheism, (Ir)rationalism, and the (Im)moral Neurofiction of Ian McEwan

Like Richard Powers – who felt “destined to be a scientist” (qtd. in Dewey 7) and majored in physics for a year before switching to English – the adolescent McEwan “thought seriously about studying science” and was only deterred by “a very effective English teacher” (“Ian”). Though as an adolescent McEwan enjoyed the fiction of “Iris Murdoch and others,” he “was also reading popular science,” including “Penguin Specials on the brain” (“Ian”), sparking his “lifelong” interest in science (“Journeys” 148). Perhaps it shouldn't come as a surprise, then, that McEwan is the British novelist most shaped by, and most reactive to, the boom in popular science writing of the last two or three decades. In McEwan's 1987 novel, *The Child in Time*, a theoretical physicist named Thelma is talking to the protagonist, a children's author named Stephen, and complains:

> A scientific revolution, no, an intellectual revolution . . . and you and your kind won't give it a serious minute of your time . . . Shakespeare would have grasped wave functions, Donne would have understood complementarity and relative time . . . And they would have educated their audiences too. But you 'arts' people, you're not only ignorant of these magnificent things, you're rather proud of knowing nothing. (44-45)

From a critical perspective, Thelma's words are significant: in addition to establishing for the first time in his oeuvre the Two Cultures clash that will animate McEwan's novels for the next three decades (and come to form a central theme of neurofiction), this section is
prophetic. Thelma's impassioned argument in support of the imaginative possibilities of science – against what she sees as the myopia of arty types – is framed in terms that mimic almost verbatim McEwan's later public pronouncements. From this point onwards, McEwan's work consistently reacts to the major public (neuro)science topics of the moment, and the broader epistemological questions posed by the concept of the scientific method emerge as one of the dominating themes in his work. In retrospect, we might view this section of *The Child in Time* as the moment where McEwan begins his evolution into “an intellectual who has contributed to shaping the discussion of scientific public culture, and the contemporary novelist that scientific intellectuals like to lionize” (Amigoni 157).

This intellectual evolution evolves into a theory of his craft. In November of 1994, McEwan gave an interview to a group of French critics, the contents of which are central to understanding how his unique conception of literary neuro-intersubjectivity relates to his work. Asked by one of the interviewers about whether he intends to provoke a moral response in his readers, McEwan replied

slowly, I've come to the view that what underlies morality is the imagination itself. We are innately moral beings, at the most basic, wired-in neurological level . . . Our imagination permits us to understand what it is like to be someone else. I don't think you could have even the beginnings of a morality unless you had the imaginative capacity to understand what it would be like to be the person whom you're considering beating round the head with a stick. An act of cruelty is ultimately a failure of the imagination. Fiction is a deeply moral form in that it is the perfect medium for entering the mind of another. I think it is at the level of empathy that moral questions begin in fiction. (McEwan, “Interview” 4)
In a 2005 interview with Zadie Smith, McEwan said that the idea of there being “something very entwined about imagination and morals,” and the notion that “one of the great values of fiction” is “exactly this process of being able to enter other people’s minds,” has been with him “at least since the early ’80s” (McEwan, “Making”). His first reference to these ideas in a neurological context appears in the 1994 interview quoted above – but it has been the philosophical backbone to his whole career.

I argue here that, in the hands of McEwan, neurofiction resists pessimistic biologism by developing and advocating a form of neuro-intersubjectivity based upon what Rachel Greenwald Smith (critically) calls “the affective hypothesis, or the belief that literature is at its most meaningful when it represents and transmits the emotional specificity of personal experience” (1). However, McEwan's commitment to a moral-neuroscientific vision for his work produces some deep tensions. His belief that the novel is an inherently moral vehicle due to its capacity to facilitate neuro-intersubjectivity exists in a constant friction with his acknowledgement of the equally brain-based capacity for imagination and fabulation. McEwan has stressed repeatedly how – in the tradition of George Eliot, Iris Murdoch and others – the novel can be a force for social good. However, moments in his oeuvre repeatedly gesture towards the possibility that “belief in the saving power of art is potentially just as infantile, solipsistic and dangerous as any other belief” (Bradley and Tate 27-28).

My study will focus on three novels – *Enduring Love* (1997), *Atonement* (2001) and *Saturday* (2005) – covering an eight-year span. My thesis is that McEwan's neurofiction frames the human brain as capable of facilitating literature's highest moral influence via processes of neuro-intersubjectivity – even as his work repeatedly acknowledges the ways in
which that same brain's endemic narrativizing impulse (so heavily thematised in *The Echo Maker*) can see it pervert literary forms of engagement with the world in pursuit of potentially immoral ends. As explored in my introduction, neurofiction often runs up against questions of belief, and thematises the persistence of a concept of something approximating a soul. C.P Snow’s Two Cultures are of such concern for McEwan because he is a self-proclaimed atheist-rationalist who cannot escape a fear that his craft might share more with religious belief than the scientific method. Between *Enduring Love* and *Saturday*, we see his belief in the novel and its neuro-intersubjective potential undergo a severe trial of faith, before it is (just about) redeemed.

“I believed in nothing”: Coming to Literary (Non)Belief

Examining the fledgling phase of McEwan's career, one finds a writer groping after a wider vision. Despite the success of his early work, McEwan has described how he has never been able to “satisfactorily explain” where his first four publications came from. Their style and approach, in his account, meant that “ultimately, they led to a loss of faith in fiction, an impasse, in the early eighties” (McEwan, “Journeys” 151). In McEwan's own regretful words, the grim, Gothic tales which earned him the soubriquet 'Ian Macabre' are “cleansed of all reference to place . . . with no connection to time or historical context” (152). His “restricted aesthetic of the novel” – insular, culturally unengaged – saw McEwan abandon the form altogether for a few years (152).

McEwan's return to the novel, with the “watershed” (Malcolm 90) work *The Child in Time*, marked the start of what is widely regarded as McEwan's 'mature' period. What
distinguishes the novel is McEwan's overturning of his former restricted aesthetic. The binding theme upon which McEwan's conception of his work comes to settle – the lens through which it finds itself able to both comment on subjective states and the world-at-large – is philosophical rationalism, along with what he views as rationalism's apogee: contemporary science. In *Enduring Love* and then *Saturday*, neuroscience frames his engagement with these themes.

To understand how neurofiction functions in the hands of McEwan, then, requires understanding the evolution of his relationship to rationalism and modern science. Though McEwan has spoken frequently of his “lifelong” interest in science (McEwan, “Journeys” 148), it is interesting to note that he was once far from a vocal advocate of scientific rationalism. As a young man he dabbled in the New Age – “I thought writers ought to be hippies” (McEwan, “Making”), he said in 2005 – and his early stories are steeped in Freudianism. Indeed, reading the 1982 introduction to his oratorio, *Or Shall We Die?*, one finds pronouncements of precisely the kind McEwan's later hyper-rationalist characters would openly ridicule, such as a mention of “that deep intuitive sense . . . that there is a spiritual dimension to our existence” (14).

A mystically-tinged interest in quantum physics animates *The Child in Time*, in which the protagonist, Stephen, undergoes a sort of dimensional time-travel allowing his mother to see an apparition of his infant face and decide against aborting him. Many years later, McEwan described this plot device as “my toe in the water of magical realism. I thought I could do it behind the fig leaf of a rather loose interpretation of quantum mechanics” (qtd. in Zalewski). In subsequent interviews, McEwan has been rather dismissive of the formal
innovation of *The Child in Time*, and it is hard not to see his subsequent abandonment of such experimentation as an admission of not just technical failure, but a sort of authorial bad faith. The increasingly rationalist McEwan will never again allow his toe anywhere near the waters of magical realism, seeming – as we will see extrapolated in *Saturday* – to equate rationalism with a clean-cut literary realism.

McEwan's abiding interest in scientific rationalism reaches its first full expression with 1992's *Black Dogs*. The novel is driven by a philosophical clash between the parents-in-law of the protagonist, Jeremy: Bernard Tremaine is committed to an “invincible atheism” (*Black Dogs* 19) and believes that there is “no direction, no patterning in human affairs” (20); June Tremaine, following a traumatising attack by a gang of black dogs, finds God, and she is resolved that “life has a purpose” (20). In an interview coinciding with the novel's publication, McEwan said of his own beliefs that “I’ve always had a great love of science, and yet I’ve never been convinced that rational explanations are enough . . . the material visible world is not either quite all or all that it seems” (qtd. in Zalewski). In the novel, McEwan's vacillations are dramatised in the life of Jeremy, for whom “Bernard and June are the extremities, the twin poles along whose slippery axis my own unbelief slithers and never comes to rest” (*Black Dogs* 19). Jeremy is rather disgusted with himself for his lack of conviction: “I had no attachments, I believed in nothing” (18). This is the last time in McEwan's oeuvre that any of his protagonists won't hold strong and vocal beliefs regarding rationalism and its philosophical rivals.

In *Black Dogs*, McEwan first performs the thematic sidestep which produces one of the philosophical anxieties animating his later handling of neurofiction. With this novel,
McEwan first catches sight of the question of how believing in the value of the literary imagination differs from believing in the value of the religious imagination. *The Child in Time* is absent of any discussion of God; *Black Dogs* is overflowing with it. Throughout *Black Dogs*, Jeremy's memoir-writing powers are presented as ontologically shaping, limitless, manipulative – God-like, we might say. As Kiernan Ryan puts it, the novel suggests that “the true art of narrative” might be “to spin pattern and transcendence out of the blank indifference of biology, to disguise the nature of life from itself” (67). The notion of this “true art” will come to vex McEwan more and more, as he moves towards his neurofiction phase.

“Narrative – my gut tightened at the word”: *Enduring Love*

In 1994 – while the idea for his next novel, *Enduring Love*, was beginning to germinate – McEwan explicitly expressed his vision of morality and the novel (“Interview” 4). This conception of his craft in firmly neurological terms occurs as part of a shift, whereby McEwan's earlier skepticism towards the notion that “rational explanations are enough” appears to entirely evaporate. While writing *Enduring Love*, McEwan began exchanging e-mails with arch-atheist Richard Dawkins, and the former's journey from semi-mystic to self-proclaimed rationalist – a transition which, in the words of McEwan's close friend Christopher Hitchens, had “something of the zeal of the convert” (qtd. in Zalewski) – sees the philosophical ambivalence of *Black Dogs* swept away for good. As late as 1994, Ryan's study (the most enduring of the earlier criticism) was able to survey McEwan's oeuvre without discussing science, rationalism, or atheism as major themes in the author's work.
This would never again be the case. In 2002, McEwan told the Paris Review that he wrote Enduring Love in celebration of the rational. Since Blake, Keats, and Mary Shelley, the rational impulse has become associated with the loveless, the coldly destructive . . . And yet our capacity for rational thought is a wonderful aspect of our natures, and often is all we have to put against social chaos, injustice, and the worst excesses of religious conviction. In writing Enduring Love, I was responding to an old friend who once said to me that he thought that Bernard, the rationalist in Black Dogs, never gets a proper crack of the whip. (“Ian”)

Enduring Love marks McEwan's coming-out as a card-carrying atheist-rationalist, and it is the first novel penned in the wake of his expression of his novelistic vision of neurointersubjectivity. In Enduring Love, McEwan first engages explicitly with neuroscience (and neuroscientific conceptions of mental illness). Indeed, in his influential article, Marco Roth writes that Enduring Love “effectively inaugurates the genre of the neuronovel,” and Andrew Gaedtke calls the novel “the most formally ambitious examples of contemporary literature’s engagement with cognitive science” (“Cognitive” 187).

However, Enduring Love is far from as straightforward as some of McEwan's public pronouncements might suggest. Certainly, the novel does self-consciously celebrate scientific rationalism, and the philosophical flavour of McEwan's thinking is made clear in the acknowledgements section, where he writes of being indebted to the work of prominent rationalists such as E. O. Wilson, Stephen Weinberg, and Steven Pinker. Nonetheless, I cannot entirely agree with David Malcolm when he describes Enduring Love as “virtually a didactic novel” (17). For all its celebrations of rationalism, its recourses to the apparent
epistemological security of neuroscience, at its heart, it is a novel about the complex role – in
science, in consciousness, in McEwan's own moral vision for his fiction – played by that
phenomenon whose very mention sees the novel's protagonist's “gut tighten” (56): narrative.

Building on the Two Cultures clash foreshadowed by Thelma's complaints in *The Child in Time, Enduring Love* partly reframes the philosophical clash between rationalist and
mystic that dominates *Black Dogs* as a philosophical clash between rationalist and humanist
(or perhaps more accurately, humanities-ist). The setup is the same, with a couple at the
centre of the novel: Joe, an outspoken rationalist and science writer, and Clarissa, a Keats
scholar for whom Joe's neo-Darwinism is “rationalism gone berserk” (*Enduring 70)*. The
central plot is driven by the novel's third major character, an obsessed stalker named Jed
Parry. Disturbed psychological states are a long-running theme in McEwan's fiction,
stretching back to his early Gothic phase. However, with *Enduring Love*, the “preoccupation
with neurological conditions” (Lustig and Peacock 1) which many critics cite as the central
defining feature of neurofiction turns from the vaguer psychopathology of earlier McEwan
– to a classifiable disorder: de Clérambault's syndrome. The syndrome sees Jed become
convinced that he and Joe are bound by a nebulous but potent religious-romantic connection.
His stalking culminates in a failed murder attempt and Clarissa's abduction. Until the very
end, neither the police nor Clarissa believe Joe's account of Jed's obsession, or the threat he
poses – Joe's eventual vindication is regarded by many reviewers and critics as the feature of
the novel which sees rationalism win the day.

At its heart, *Enduring Love* examines the nature of narrative and storytelling, and
investigates how an irrationalism potentially endemic to both is fundamentally at odds with the rationalism central to reason and thus (brain) science. The novel thematises the gulf between reason (embodied by Joe) and emotion (embodied by Clarissa). Equating reason with science, and emotion with narration, the novel picks up and runs with the theme gestured toward in Black Dogs, where Jeremy's highly manipulative memoir-writing powers come to suggest that “the true art of narrative” might be “to spin pattern and transcendence out of the blank indifference of biology, to disguise the nature of life from itself” (Ryan 67). The hyper-rationalist Joe believes that a proper and true life of the mind should be aimed at precisely the opposite of what Ryan describes: to reveal the nature of life to itself. In McEwan's own words, Joe is – or attempts to be – “almost pathologically rational” (“Journeys” 126). Fittingly, the novel obliquely endorses the materialist account of consciousness, and Joe appears smugly comfortable with (and entirely unvexed by) the idea that it is purely “matter” that gives rise to “our selves and all our thoughts” (McEwan, Enduring 3). Upon viewing a horribly shattered corpse, Joe begins to abstractly muse on how death is really just “the closing down of countless interrelated neural and bio-chemical exchanges” (23).

Enduring Love establishes a bind, though, wherein Joe is a devotee of science, yet his work centres on not doing science, but writing it, “deliver[ing] it up to the general reader” (Enduring 75). A lapsed quantum electrodynamics graduate student, Joe pines constantly after his “laboratory days” (122), conceiving schemes by which he might return to “pure science” (106). “All the ideas I deal in are other people’s,” Joe remarks, self-pityingly. He sees himself as “an outsider to my own profession” (77) and is plagued by the idea that he is a
“parasite” (75). Joe perceives a deep conflict between narrative and “pure” science (which in the schema of *Enduring Love* is synonymous with “pure” rationalism).

This suspicion of narrative feeds *Enduring Love*’s Two Cultures theme. Clarissa, Joe’s wife, is a Keats scholar who, Joe claims, “thought that her emotions were the appropriate guide, that she could feel her way to the truth” (*Enduring* 150). Early in the novel, as he sits down to work on his article on narrative in science, Joe is angered at the “derisory” science collection at the London Library, asking himself “did the scientific illiterates who ran this place, and who dared call themselves educated people, really believe that literature was the greatest intellectual achievement of our civilization?” (42). Despite being married to a Keats scholar, Joe is a “skeptic about the value of the humanities” (Malcolm 169), largely because from his point of view they are essentially unempirical, closer to religious belief than scientific proof. Joe's disillusionment, even self-loathing towards his position as a science *writer*, rather than an actual scientist, stems in large part from a belief that such a position sees him on the wrong side of the Two Cultures divide.

The central element of the plot – Jed's stalking of Joe – is a microcosmic of this rationalism/narrative binary. If Joe embodies pure science, pure rationalism, then his tormentor is the opposite. Jed is pure irrationalism; “emotions, feelings, and inspiration are all to him; material facts are nothing” (Malcolm 176). In turn, Jed is not only pure irrationalism – he is pure narrative. He is driven by a version of events that mimics a thousand romantic plot-lines: he and Joe have shared a secret loving glance and are now destined to be together. (The sub-plot involving Jean Logan wrongly believing her husband to be an adulterer is similarly driven by the irresistible power of narrative.) Furthermore,
McEwan's presentation of Jed's rather ill-defined religious beliefs represent a hermetically-sealed narrative account – the religious text, it is suggested, is but a more dogmatic fictional text.

This atmosphere, in which the events of *Enduring Love* are governed not by the rationalistic principles Joe continually pontificates upon, but by people's capacity for irrationally derived hypothetical narratives, seeps into Joe's own narration. As his life becomes more fraught, Joe is increasingly drawn towards the explanations and consolations of narrative, and in trying to remain supremely rational he develops a deep mistrust of his own phenomenological life. His narrative is intensely self-scrutinising, and Joe's constant interior watchfulness occasionally makes for almost neurotic reading. His attempts to maintain a detached perspective on himself function as attempts to straddle that “explanatory gap” (Levine 354) which all works of neurofiction explore.

Here, *Enduring Love* thematises the concept and challenge of neuro-introspection, an overarching theme of all neurofiction. The novel implicitly gestures towards the ironic tension by which all of our knowledge about the brain is potentially powerless against the functioning of our minds; in which objective, detached insight wilts in the face of subjective experience. Put dualistically: the mind cannot change the brain. After the horror of the opening balloon accident, Joe finds himself “like a self in a dream . . . both first and third person” (*Enduring* 21). Such attempts to “accomplish . . . a double perspective by recasting [his] own subjective experiences as objective neurological processes through the discourses of cognitive science” (Gaedtke, “Cognitive” 191) occur when Joe's attempts to act in a spirit of objectivity towards his own subjectivity are strained. The emotional reaction is always out
of the psychic blocks quicker than the rational scrutiny. “No-one could agree on anything,” bemoans Joe. “We lived in a mist of half-shared, unreliable perception, and our sense data came warped by a prism of desire and belief . . . We saw and remembered in our own favour and we persuaded ourselves along the way” (Enduring 180).

Gaedtke has explored how Joe's narration, at times of high anxiety, conducts a “temporary withdrawal from the immediate, disturbing qualia of his present anxiety into the neutral, objective style of scientific writing,” and comments that “this withdrawal into scientific discourse serves as an emotional prophylactic” (“Cognitive” 190). A crucial point missing from Gaedtke's account is that these linguistic withdrawals serve not only as an “emotional prophylactic,” but also as a stark denial of the narrative (or storytelling) impulse. Joe's tonal segues almost always occur at points of narrative tension, jarringly interrupting the reading flow. It is when the reader witnesses Joe, already spooked by Jed's behaviour, feel “the creak of a floorboard behind me” and notice that “there was someone at my back,” that Joe launches into his explanation (too long to share in full) of how “the primitive, so-called sympathetic nervous system is a wondrous thing we share with all other species” (McEwan Enduring 51). Other examples are rife: when Joe is being tailed by Jed in the middle of the night (90); when it is dawning on him that the police don't believe his account and that he will have to resort to drastic vigilante measures (182) – at these and various other junctures, Joe's retreat into neuroscientific language functions as a sort of (doomed) epistemological protest against the rhythm and demands of narrative. Only at the moment when – having learnt of Clarissa's abduction, and while learning on the fly how to fire a pistol – he is so nervewracked that it is “a constant and conscious effort . . . to keep my anal
sphincter tight” (206), is Joe unable to retreat into narrative-stymying scientific analysis: “At another time I might have been drawn to elaborate the evolutionary perspective, drawn from game theory, that for any social animal, always, cheating was a sure route to extinction. But now I felt sick” (206). Here, finally, we see Joe's objectifying reflex fails him.

Ultimately, in a sort of epistemological return of the repressed, for all Joe's efforts, he remains, like his stalker, a “prisoner of [his] own narrative constructions” (Greenberg 95). At crucial moments throughout Enduring Love, however much he ruminates or analyses, Joe's rationalism fails to yield the truth about an event. The incident that opens the novel (arguably the most famous scene in McEwan's oeuvre) turns into a fatal tragedy because one of the men hanging onto the balloons' ropes, fearing for his own safety, lets go first. “I didn't know, nor have I ever discovered,” Joe tells us, “who let go first. I'm not prepared to accept that it was me. But everyone claims not to have been first” (McEwan, Enduring 14). Later, Clarissa tells Joe in a letter that on the evening of the accident “it was quite clear from the things you were saying then that you were very troubled by the thought that it might have been you who let go of the rope first” (217). This is one of many moments where Joe emerges as “a highly unreliable first-person narrator overtly manipulating the construction of the narrative” (Wells 19). For one, his worry that he might have let go of the rope first is information he has been withholding from the reader. On top of this, Joe reports that he “glimped a body fall away” (15) – but if Clarissa is telling the truth in her letter, and we've no reason to believe that she isn't, where does that leave Joe's glimpse? Is it a lie? A hallucination? A constructed memory? There are two possibilities: Either Joe doesn't trust the truth of this glimpse enough for it to assuage his guilt, or he is deluding himself with the thought that it wasn't him who
let go. Either way, attempts at neuro-introspection have failed him – and once again, spying the hole left by rationalism's failure to provide answers, narrative moves in. As Jonathan Greenberg puts it: “Out of Joe's rational, neo-Darwinist account of self-deception emerges the very grounds for suspecting Joe's rational neo-Darwinism” (107).

Hovering above all of this is McEwan's unique contribution to neurofiction: his moral conception of the novel as facilitating a redemptive form of neuro-intersubjectivity. His realisation that fiction “is a deeply moral form in that it is the perfect medium for entering the mind of another” (“Interview” 4) was arrived at in the years he was writing *Enduring Love*. However, in a trend that we will see repeated with *Atonement* – and in a doubling of Joe's watertight rational theories being corrupted by the tendrils of narrative – McEwan's neuro-moral vision doesn't appear nearly as straightforward in his novels as it does in his interviews. Despite *Enduring Love*’s consistent problematising of Joe's rationalism – despite the way his “grand narrative of ultra-Darwinism . . . is undone again and again” (Waugh, “Science” 66) – I think critics who read the book as ultimately vindicating Clarissa are mistaken. There is no simple suggestion that by being more of a humanist Joe might have avoided trouble. In the end, Clarissa the humanist is by her own admission “completely wrong” (McEwan, *Enduring* 216) about Jed, and Joe is right – and not because he sat down and read a stack of novels, or the complete poetry of Keats. It is Joe's “powers of rationality and deduction” (216) that save them, even if they occasionally become scattered. Even if Joe's “being right is not a simple matter” (216), as Clarissa says, it still protects her from a knife-wielding Jed. Put another way: Jed's problem does not seem to be that no-one is empathising with him.
Enduring Love does deny a state of subjective ultra-rationalism, but it appears to do so on the grounds of (evolved) human frailty and a limited scope for neuro-introspection – not ethical or philosophical preference. In the scheme of the novel, Joe's attempted mindset fails not because it isn't desirable, but because it isn't sustainable. Greenberg and others might conclude rather cheerfully that the novel mediates between the Two Cultures by offering “a common ground for fiction and science in their joint reliance on narrative” (Greenberg 116), but this is to sell the great anxieties of Enduring Love short. This joint reliance is fragile, even as it carries the seed of McEwan's moral vision. McEwan said that in creating Clarissa he “wanted someone both sympathetic and wrong,” whereas in creating Joe he wanted “someone who was slightly repellent, but right” (qtd. in Head 134). I posit that Joe is right, but not thanks to novels, nor indeed empathy – and so where does this leave the moral role of the novel, in which Joe is entirely uninterested?

I am in broad agreement with Waugh's argument that, with Enduring Love, “McEwan presents a picture of human existence which demonstrates the final inadequacy of any reductionist evolutionary account but without therefore capitulating to the postmodern evacuation of knowledge and judgement” (“Science” 66). I would add that in McEwan's formulation this inadequacy only exists in light of Joe's failure to subjectively occupy such an account, to muster the requisite powers of neuro-introspection. At no point in the novel is a rationalist-Darwinian account of reality presented as anything other than basically, objectively correct – it is just rather hard to live by. This dynamic will be reiterated in Saturday. Characters (and characters' brains) helplessly trade public logic for private stories – a process which underlies McEwan's hope for a more empathetic mankind, but is also
capable of driving Jed to attempted murder. Looked at properly, *Enduring Love* is the story of a man whose meticulous understanding of how the brain works can only partly save him from how the brain works. The novel may fulfil Waugh's definition of the skilled “syndrome novel” as reaching “beyond postmodern self-reflexivity and neurological reductionism” ("Naturalistic” 23) – but this middle ground is far from secure. This interplay between the good, the bad and the ugly of human neurological potential is central to the continuing evolution of McEwan's neurocultural project.

“Who couldn't tell real life from the stories in her head”: *Atonement*, 9/11 and The New Atheism

In the four years between *Enduring Love* and the his bestselling *Atonement*, McEwan published more and more pieces celebrating various practitioners and popularizers of science. However, despite continuing to describe his neuro-moral vision for the novel in interviews, with *Atonement*, a lack of faith in said vision comes into stark view. *Atonement* is disqualified as modern neurofiction by its setting – the plot takes place largely in 1935 and 1941, long before the ascendancy of contemporary neuroscience. However, many of the concerns of this study are present in the novel. In the opening section, Briony – a precocious, self-absorbed girl who “couldn't tell real life from the stories in her head” (*Atonement* 37) – is discovering the creative powers of prose. She realises that in her stories there

did not have to be a moral. She need only show separate minds, as alive as her own, struggling with the idea that other minds were equally alive. It wasn’t only wickedness and scheming that made people unhappy, it was confusion and
misunderstanding; above all, it was the failure to grasp the simple truth that other people are as real as you. And only in a story could you enter these different minds and show how they had an equal value. (40)

This description, of course, chimes with McEwan's own artistic vision, first expressed in 1994. Briony's words sound an awful lot like a pre-adolescent translation of “fiction is a deeply moral form in that it is the perfect medium for entering the mind of another” (McEwan, “Interview” 4). Echoing Briony, her older sister Clarissa (who is reading English at Cambridge) later muses on how “great literature” has served to “modify her sensibilities” (Atonement 47). The young Robbie, thinking he is headed for medical school, muses on how he will be “a better doctor for having read literature” (93).

However, within Atonement, even more so than with Enduring Love, McEwan's artistic vision does bitter – and perhaps ultimately failed – battle with narrative's less positive, less constructive potentialities. In Briony, McEwan depicts the egoism and megalomania that the imagination can engender. He suggests that one need not be, like Jed, clinically insane; one can simply be drunk on storytelling. Briony's power of invention is her “godly power of creation” (Atonement 76), and when she accuses Robbie of the rape, setting in motion the tragedy at the core of the novel, she does so in a spirit of total imaginative certainty: “She had no doubt. She could describe him. There was nothing she could not describe” (165). There is an essential, terrible selfishness to literary creation as portrayed by Atonement. Ryan describes the earlier Black Dogs as a “sinister portrait of the artist as vampire” (64) – but Briony's dishonest, exploitative actions, revealing “the ghoulish and shameful aspects of the novelist's vocation” (Head 162), make Jeremy's actions in Black
Dogs pale into insignificance. McEwan's theme has matured and sharpened.

The heartrending twist that concludes Atonement – Dominic Head calls it “McEwan's most empathetic refusal of consolation” (160) – gives the entire novel its actual shape. With a simple-sign off – “BT” (Briony's initials) and “London 1999” (Atonement 349) – the most audacious metafictional move in McEwan's entire oeuvre is revealed: The preceding three-hundred-plus pages have all been the novelistic imagining of an elderly Briony, writing decades after the events portrayed – and decades after, it is revealed, the wartime deaths of the very much un-reunited Robbie and Cecilia. Briony calls her writing of the account “an atonement” (349) and tries to convince herself that she is performing a kindness by throwing away her “pitiless” earlier drafts, settling on one in which Robbie and Cecilia survive – but the closing three pages of Atonement border on self-delusion. Continuing the trend of Enduring Love, the literary urge is positioned next to the religious one: Briony remarks on how the novelist is “also God . . . there is nothing outside her” (317). Casting the novelist in a sort of ecclesiastical role, her consolations and reasonings can be allowed to dissipate into vague cosmic musing. The cast of Atonement will eventually exist “only as [her] inventions” (371), Briony consoles herself. Her descent into imaginative moral corrective is presented as an extreme version of the narrative mindset that represents a sort of megalomaniacal deconstructionism that is the cousin of theological apologia.

As Frank Kermode put it in his review of Atonement, “the title of the book seems to suggest that Briony will do something by way of atonement, but nothing quite fitting that description seems to occur” (9) – even though Briony appears to think it does. One senses that the resulting frustration is McEwan's desired effect: we too, as readers, have been
deceived and hurt by Briony's lies, we too have been duped for 300 pages, and we are annoyed by her self-serving musings on the part of both the wronged couple and ourselves. “I gave them happiness” (*Enduring* 372), Briony tells herself, at the very close of the novel – but as readers we are acutely aware that she didn't; that she gave them suffering, and then gave *herself* an imagined and narrated versions of their happiness. Hers are the delusions of the professional imaginer. Alistair Cormack perceives this message clearly:

> Whether they are fairytale fabulists, scrupulous modernists, or self-conscious modernists, novelists are here to lie . . . *Atonement*'s metafiction is not there to present the reader with the inevitable penetration of the real with the fictive. Instead the novel serves to show that the two worlds are entirely distinct: there is the world of the real and the world of literature, and woe betide those who confuse the two. (82)

Woe betide, in other words, Briony – whose final act of novelistic wish fulfilment comes off “not as penitential, but as a further sign of her narcissism” (Wells 20). Once again, as with *Enduring Love*, McEwan's neuro-moral vision for the novel is problematised by the other potential influences of narrative. Within *Atonement*, Briony explicitly expresses McEwan's public position on the value of the novel – “only in a story could you enter these different minds and show how they had an equal value” (40) – literally hours before her narrative imagination sees her commit a crime whose tragedy forms the centrepiece of the novel. Even as Briony is made the mouthpiece of McEwan's moral aims, her position in *Atonement* can be seen as “simultaneously and paradoxically casting doubt on the novel as an inherently moral medium” (Head 163).

These tensions at the heart of *Atonement*, and McEwan's neuro-moral vision, will be
profoundly influenced, most of all in his neurofiction *Saturday* (2005), by a global event that took place mere months after the publication of *Atonement*: the terrorist attacks of September 11th. Four days after the Twin Towers came down, McEwan published a widely-read front-page reaction piece in the *Guardian*. In reaction to the tragedy, he described the nature of empathy (“to think oneself into the minds of others”) and declared that “if the hijackers had been able to imagine themselves into the thoughts and feelings of the passengers, they would have been unable to proceed . . . Imagining what it is like to be someone other than yourself is at the core of our humanity” (“Only Love”). At the source of the hijackers' crimes, McEwan writes, “was a failure of the imagination” (“Only Love”). Though he isn't explicit about it, the parallels between his understanding of the source of immorality and his neurologically-grounded vision for the novel is clear.

In the wake of 9/11, as well as taking on the role of “a kind of global moralist” (Head 161), McEwan becomes arguably the world's most outspoken atheist novelist, the writer who best corroborates Georg Lukács' famous description of the novel as “the epic of a world that has been abandoned by God” (qtd. in Lee 11). It would appear that McEwan had considered himself a nonbeliever for some years; however, after 9/11, his vocal public criticism of religion ramps up considerably. Bradley and Tate, in their 2010 study of “The New Atheist Novel,” write “it is tempting to say that – if [McEwan's] fiction did not exist – Dawkins and company would have had to invent it, so completely does it vindicate their worldview” (16). Theirs is a polemical account with which I only partly agree, but certainly McEwan's passionate beliefs around religion and atheism become live issues that intersect with the other themes of this chapter in his post-9/11 writing.
“From lord of terror to amazed admirer”: Saturday

In contrast to the tragic and morally-conflicted Atonement, Head calls Saturday McEwan's “most consoling fiction yet” (174). Similarly, Swantje Möller writes that “Saturday provides the most affirmative ending of McEwan's novels” (190). Here, I will qualify these claims with the argument that Saturday is consoling only in a very tentative fashion – of a piece with McEwan's generally fragile faith in literature.

Along with David Lodge's Thinks... (2001), Saturday is probably the most deliberate and self-conscious Two Cultures novel in all of contemporary British writing. This time, the Cultures are embodied by neurosurgeon Henry Perowne and his daughter and poet, Daisy (as well as, to a lesser extent, Perowne's grandfather, the poet John Grammaticus). Henry Perowne is a highly skilled neurosurgeon with a spookily idyllic family life for whom the “neurosurgical suite” is a “home from home” (Saturday 246) and to whom operating on brains brings “profound happiness” (258). In researching Saturday, McEwan spent two years shadowing the accomplished neurosurgeon Neil Kitchen, and his protagonist views the world by default through the lens of his medical and (neuro)scientific learning. References to neuroscience pepper Perowne's intensely inward-facing narrative, with the result being that, in a twist on other famous 24-hour big-city narratives such as Ulysses (1922) and Mrs Dalloway (1925), Head describes Saturday (McEwan’s only attempt at writing entirely in the present tense) as attempting “to produce, perhaps, a diagnostic ‘slice-of-mind’ novel – working towards the literary equivalent of a CT scan – rather than a modernist ‘slice-of-life’ novel” (198).
In the clearest formal rendering of a novel seeking full powers of neuro-introspection, Perowne's narrative is dominated by self-consciously non-Cartesian movements of consciousness (he “knows it for a quotidian fact, the mind is what the brain, mere matter, performs” [McEwan, *Saturday* 67]), filtered through his reading in popular evolutionary science. When a phrase drifts into his mind, Henry muses that “a modest rise in his adrenaline levels is making him unusually associative” (90). He refers to a pair of nurses crossing the street as “hot little biological engines with bipedal skills.” As with *Enduring Love's* Joe, Perowne's retreats into such musings serve at times as an “emotional prophylactic” (or at least an attempt at one) (Gaedtke, “Cognitive” 190). When he is on the verge of being beaten up, Perowne fills us in on “some of the current literature on violence” (*Saturday* 88). As with Joe, there is a note of self-consciousness to these tangents of consciousness: Perowne refers to himself as “a droning, pedestrian diagnostician” when faced with the threat of Baxter he notes that his “emotional lability” is “suggestive of reduced levels of GABA among the appropriate binding sites on striatal neurons” (91).

However, despite his mastery of neuroscientific knowledge, Henry is a “complete philistine” (Möller 170) when it comes to literary matters. He has never heard of Matthew Arnold (*Saturday* 230), a rather obvious allusion to Shakespeare's St. Crispin's Day speech on the radio is “lost on him” (125), and despite his daughter being a poet, he has “read no poetry in adult life” (128) and is “not absolutely certain what a stanza” (136) is. (John Banville, in a rare negative review of *Saturday*, commented that Henry's “ignorance of literature is frankly incredible.”) Perowne's poet daughter, Daisy – who thinks her father is “a coarse, unredeemable materialist” (*Saturday* 134) – is attempting, with mixed results, to
guide his “literary education” (6) by sending him “reading lists” (6). Henry has a vague wish to “understand what's meant . . . by literary genius” (66), but “half doubts its existence” (66). Perowne has been largely “unmoved” by *What Maisie Knew*, *Anna Karenina*, and *Madame Bovary* – “sophisticated fairy stories” (67) – and reserves particular ire for the “irksome confections” (67) of magical realism. “It interests [Henry] less to have the world reinvented; he wants it explained” (66). He is astonished when his daughter is moved to tears by *Jane Eyre*, “all the creation of a woman she would never meet” (133). The flipside of this is Henry's suspicion that his poet father-in-law regards him as “one more tradesman, an uncultured and tedious medic” (195); that when he raises a toast to poetry, his daughter and her grandfather regard his words as ones “a mere bonesetter has no right to utter” (198).

McEwan pushes his critique of the literary mode to breaking point. A novel Perowne particularly detests is one in which “a visionary saw through a pub window his parents as they had been some weeks after his conception, discussing the possibility of aborting him” (67). This scene is taken from McEwan's novel of 18 years prior, *The Child in Time* (67). There is an almost unsettling quality here, in part because in so many ways Perowne appears as a stand-in for McEwan. Almost every one of his opinions resemble those McEwan has publicly expressed. Perowne sharing so closely his creators's views on various subjects again raises the odd feeling that at times McEwan is rather enjoying hanging out on the science side of the Two Cultures divide. The neurosurgeon's carefully-worded takedowns of literature take the tensions of *Enduring Love* and apply even greater pressure.

The counterpoint to all this, the relaxing of the paradox, is that Henry's views on the value of literature are contested by the novel in which he stars. For one, in an echoing of
Enduring Love's Joe, the reader is made privy to the blind spots in Henry's scientistic outlook – the ways in which he suffers a mild version of what he describes as “anosognosia . . . a lack of awareness of one's own condition” (Saturday 74), and what we can also describe as failed neuro-introspection. Despite what he tells himself, Perowne can't escape the pull of narrative, nor the insertion of narrative shape into his own internal life. He sees himself as “living proof” (68) that people can live “without stories” (68) – but as so richly explored in Powers' The Echo Maker, this is pure self-delusion. We read that, upon falling in love with his wife, Rosalind, he inserts himself into “the story of her existence” (45). Throughout the entire book is woven Perowne's narrativizing of the downing plane – he is “only too happy to let the story and every little nervous shift of the daily news process colour his emotional state” (180) – and he consumes the news of and debates surrounding the Iraq invasion like a voracious reader of fiction, obsessed with big characters (Saddam versus Blair) and lurid details (torture, massacres). Like Joe before him, Henry is vaguely aware of the all-too-human “folly of overinterpretation” (39), wondering “how can we trust ourselves?” (39) – even as he (wrongly) believes himself to be the exception to the rule.

The central means by which Saturday painfully reconciles the Two Cultures, however, is the arc of its plot, and particularly its climactic scene. Midway through the novel, Henry has a run-in with a working class petty criminal named Baxter. When Baxter and his sidekicks are about to beat Henry up, Baxter's “persistent tremors” and other symptoms draw Perowne's “professional attention” (Saturday 87), and on the spot he diagnoses Baxter with Huntington's Disease (96). Henry, revealed to Baxter as a neurosurgeon, lies about new treatments as a way of stalling the beating, and then escapes the violence when Baxter's back
is turned. Later, a knife-wielding Baxter intrudes upon the Perownes' family reunion. Daisy – home from Paris to celebrate the publication of her Newdigate Prize-winning debut poetry collection – is made to stand up and strip naked. Baxter and his sidekick, Nigel, appear to be considering raping Daisy in front of her parents, grandfather and younger brother, Theo. The ever-more-unstable Baxter, hesitating, demands that Daisy read from her poetry collection. On the subtle prompting of her father-in-law, Daisy reads not a poem of her own, but, from memory, Matthew Arnold's “Dover Beach.”

What follows is Saturday's central scene, and the moment in the novel that has received the most attention from reviewers and critics. Baxter makes Daisy read the poem twice, and gradually softens as he listens. Contrary to W. H. Auden’s famous assertion that “poetry makes nothing happen” (246), via Daisy's readings, violent tragedy is averted. Hearing “Dover Beach”, Baxter says, “you wrote that. You wrote that . . . It's beautiful” (Saturday 222). Having lost his nerve, Baxter tells Daisy to get dressed, and pockets her poetry collection for himself. Daisy is out of harm's way, and Perowne manages to lure Baxter upstairs. Nigel, disgusted by Baxter's poetic conversion and failure to rape Daisy, leaves the house, and Theo bounds up the stairs, whereupon the father and son hurl the intruder down the steep staircase, where he cracks his head on the “hard stone” (228).

Following the salvation-by-poetry moment comes the penultimate scene, which concludes Saturday's central plot. Having been hurled down the stairs and cracked his head, Baxter is in need of emergency brain surgery. In the novel's penultimate scene, Henry follows Baxter to the hospital and operates to repair his “midline depressed fracture, both extradural and subdural” (Saturday 249) – alleviating, at least for a time, his Huntington's
Disease. Aside from being a slightly tiresome excuse for McEwan to showcase all the technical neuroscientific language he has learnt, this scene neatly wraps up Saturday's themes. “I'm responsible” (239), says Henry, believing that his humiliating Baxter earlier in the day triggered his violent reaction.

The “Dover Beach” reading, and Perowne's subsequent repair work on Baxter's brain, represent the climax of the novel. They are the moments in McEwan's oeuvre that best encapsulate the ideas, contradictions, tensions and fragile hopes of his engagement with neuroscience, neurofiction and neuro-intersubjectivity. As I noted above, with notable exceptions, most popular reviewers and critics have read the “Dover Beach” scene and the one that follows as offering a conciliatory image of the Two Cultures coming together to stoke empathy and compassion amongst the characters present, with positive results. This reading, which I argue is a simplified one, goes like this: within the scene, we see literature forcing Baxter to humanize his potential rape victim – get a glimpse of her inner life – following which he finds himself unable to violate her as he had been planning. In turn, we see Perowne, who has “read no poetry in adult life” (Saturday 128), learning what it means to inhabit the poetic imagination. He glimpses Baxter in his full consciousness, with a history and a capacity for nostalgia and suffering. Perowne's moment of empathy triggers his actions in the operation scene; where “Dover Beach” touched the empathy circuits in Baxter and Perowne's brains, Perowne now pays this empathy forward when he quite literally “places his finger on the surface of Baxter's cortex” (255) and alleviates his suffering. Echoing Jason Tougaw's argument that in neurofiction “touching another person's brain to find that person's self is a fantasy of connecting” (“Touching” 353), the physicality of the natural sciences –
the touch of a fingertip – is contrasted with the psychology of the literary arts – the
subjective impression of a poem. One uses a scalpel, and the other a pen. But the result is the
same: both neurosurgeons and literature can act upon our grey matter for the better.

With this sanguine reading of the “Dover Beach” scene – which I contest – we can
see the novel's final act as expressing the apogee of McEwan's neuro-moral vision. A crucial
point here is that McEwan could have had Daisy read Baxter any poem – she is able to recite
various pieces of classic verse “non-stop for more than two hours” (*Saturday* 134). Arnold's
“Dover Beach” is a highly deliberate choice. Arnold is the most famous advocate of literary
culture taking on the mantle of religion. “Dover Beach” is an acknowledgement of the
“melancholy, long, withdrawing roar” of “The Sea of Faith,” and a humanist call for
mankind to “be true / To one another!” upon the new “darkling plain” of a Godless world
(qtd. in *Saturday* 281). Though he viewed the phenomenon with a wistful melancholy that
McEwan doesn't share, Arnold's prescription for the spiritually unmoored following the loss
of faith is certainly one McEwan can get behind: literature. As Terry Eagleton outlines,
Arnold proposed that “culture may wrest the baton from religion” (*Culture* 205). He
“emptied religion of its doctrinal content” (206) and offered “a poeticised version of the
Christian doctrine” which privileged moral and aesthetic feeling by replacing the gospel with
the canon. In this sense, we can read Baxter's conversion via “Dover Beach” as a narrative
enactment of Arnold’s poetic thesis – converted here, a century and a half later, into
McEwan's novelistic thesis – that we are the means of our own salvation, and that those
means can be augmented by the literary imagination. Furthermore, as Möller puts it,
“Baxter's intrusion into [Henry's] life on a private scale mirrors the threat constituted by
terrorism and war on a global scale” (17). There is a possible suggestion here (as McEwan alluded to in the wake of 9/11) that literature might do battle with even the “failure of the imagination” at the heart of terrorist violence. As Bradley and Tate (somewhat snidely) put it, “Baxter's transformation from potential rapist to poetry lover is unlikely – one is tempted to say miraculous – but in the context of McEwan's neo-Victorian faith in literature, empathy and the moral imagination it makes perfect sense” (32). The novel appears to have found what Perowne at one point explicitly doubts: “a morality, an ethics down among the enzymes and amino acids” (*Saturday* 92).

However, I want to problematize this popular reading of *Saturday*. I think that with the “Dover Beach” scene, McEwan, whether intentionally or not, hedges his bets. Just as a reading of Joe as an untainted hero of rationalism is limited, I think that a reading of the “Dover Beach” scene as straightforwardly consoling, hopeful, and celebratory of the empathic powers of the written word is equally shortsighted. For one, there is the obvious point that “Dover Beach” is not a total panacea. Baxter's sidekick, Nigel, isn't moved in the slightest by the poem, continuing, after Daisy's reading, to urge Baxter to “do the business” (*Saturday* 222) (that is, rape Daisy). Also, there is a deception here; the poem isn't by Daisy, and if either man knew that, we suspect that it would not have the impact it does. One can make a good case that what saves Daisy is not so much “Dover Beach” as the so-called biographical fallacy. Baxter doesn't praise the poem's language or tone, he says “you wrote that. You *wrote* that” (222) – which isn't true.68

Most crucially, though, within the scene, the text leaves just enough of a suggestion that Baxter's change of heart might be not a poetic epiphany, but a neurodegenerative mood-
swing. By this stage in the narrative, Baxter is verging on the manic: he is “twitching” (Saturday 222), “licking his lips” (224), “making frenetic little dips with his body” (223), “shifting weight rapidly from one foot to the other” (223). He has also downed a large quantity of neat gin. Watching the scene, Perowne comments on Baxter’s “degenerating mind” (223). Later, he remarks, “who knows what spooky uncontrollable emotions were driving him” (267). It isn't made explicit, but there is more than a hint that Baxter's “transformation from lord of terror to amazed admirer” (222) might have less to do with Matthew Arnold's poetic brilliance, and more to do with the fact that “the wasting in his caudate nucleus” (225) means “his emotions are wild and his judgement is going” (225). At the heart of Saturday's climactic scene is the fact that, as Head writes, it “is not a simple celebration of poetry . . . the scene also emphasises the unpredictability and subjectivity of the aesthetic response” (189). The poetry doesn't act upon the listeners with the rational predictability of a knife to the cortex: Baxter and Perowne both insert their own meanings. The “elated” Baxter finds that the “beautiful” poem “makes [him] think about where [he] grew up” (Saturday 222); for Perowne, the poem makes him picture “Daisy on a terrace overlooking a beach” and “call[ing] to her lover” (220). Upon Daisy's second reading, Perowne then sees Baxter, not Daisy, “standing alone . . . listening to the waves” (221) and hears the sea's waves “through Baxter's ears” (221). There is none of the clarity of a brain scan here. As Möller puts it, echoing Head: “This experience of Henry’s stresses the transformative power of art . . . it is in the subjective character of the aesthetic response that art’s ethical potential lies” (171). However, what Möller and others miss – what so often worries McEwan and his characters – is that this subjective character of the aesthetic
response is also where the imagination's unethical potential lies. The point is that “Dover Beach” works its magic despite the fact that both men basically misread it.

Ultimately, *Saturday* tentatively flips the scheme of *Enduring Love* on its head, this time with the narrative, intuitive, even irrationalist mode just about being the one which prevents violent disaster. I am in agreement with Thom Dancer – who calls the position adopted by *Saturday* “Material Humanism” (214) – when he says that “McEwan does not wish to demolish [biological determinism] completely . . . Certainly the novel says that there is something to physiological determinants; however, it is hubris to imagine that the purely materialistic solves the problem” (214). That said, the determinants are still there, and the revelatory power of the written word still relies on the unpredictability and fickleness of human brains. Poetry's power in *Saturday* appears as less a powerful Arnoldian hymn and more a lucky cry in the dark. While *Saturday* does represent a counterpoint to *Enduring Love*, and proposes a faith in literature's privileged and unique access to neuro-intersubjectivity, it is a delicate faith, a faith that still can't quite forgive itself for relying on untruths for fuel. The doubts and second-guessings of *Atonement* die hard.

“*With success came our defect*”: God, Postmodernism, and the Unreliable Novel

On the whole, as with Powers, judging McEwan's work is made difficult by the sheer volume of his public pronouncements. The critic is left wishing that both authors shared Umberto Eco's belief that “a narrator should not supply interpretations of his work; otherwise he would have not written a novel, which is a machine for generating interpretations” (541). What is especially difficult is that in his public life – not least via his association with the
self-assured bombast of the New Atheist crowd – McEwan has often been forced into proclaiming certainties in a way that sell his work short. Head comments on how in Enduring Love McEwan faces up to the “moral question” of innate human goodness “in a more complex way than McEwan manages in his non-fictional ruminations on evolutionary psychology” (10). I would say that this dichotomy extends to much of his oeuvre. Dancer writes of McEwan's concern with “the problem of epistemological immodesty” (202).

McEwan is constantly setting up competing claims to knowledge, and his fictional works are the artefacts of a more subtle, conflicted and pluralistic observer than his public declarations. McEwan believes stories (novels) can promote moral behaviour, but he isn't so naïve that he believes the process works all – or, crucially, perhaps even most – of the time.

Without the human appetite for narrative explanations, we couldn't read novels; but this appetite can't be trusted. McEwan is a committed Darwinist. However, he can't bring himself to fully swallow the idea, oft-propagated by those of a 'literary Darwinist' leaning, that fiction “is, on the whole, intensely moralistic,” and that storytelling formed a positive evolutionary adaptation because “stories makes societies work better by encouraging us to behave ethically” (Gottschall 134). McEwan certainly believes that this can be the case, and he tells interviewers repeatedly that this is the case. But his writing demonstrates a deep ambiguity about the reliability of such a claim. The Darwinist is forced to concede that human consciousness has cleaved us from simple evolutionary logic – as Joe remarks in Enduring Love, “we were no longer in the great chain. It was our own complexity that had expelled us from the Garden. We were in a mess of our own unmaking” (207). However artful a neuroscientific framing McEwan gives it, literature – including Arnold's “Dover Beach” –
will always take off from “those realms of feeling that defy the responsibility of logic” *(Enduring* 102).

This conflicted outlook means that McEwan's position within the New Atheist movement is a curious one. When one examines McEwan's oeuvre in the terms I have here, his atheistic bromides reveal once again a gulf (albeit a subtler one) between what he says and what he writes. For all his belief in the moral force of the novel – and for all that, with other New Atheists such as Christopher Hitchens, the novel might “represent a kind of secular object of devotion” (Bradley and Tate 14) – McEwan's work constantly flirts nervously with the idea that literature shares at least as much with religion as it does with science. In *Black Dogs*, the biography-writing Jeremy, reacting to his subject ascribing an epiphany-like significance to the attack she has suffered, muses that “turning-points are the inventions of story-tellers and dramatists . . . Seeing the light, the moment of truth, the turning point, surely we borrow these from Hollywood or the Bible?” (50). Jeremy's question appears at the precise moment that McEwan is about to reveal the turning-point from which *Black Dogs* derives its title and central plot. In *Enduring Love*, a spectrum is established whereby the religiously unhinged Jed's worldview is far closer to that of Clarissa – the Keats scholar for whom Joe's neo-Darwinism is “rationalism gone berserk” (*Enduring* 70) – than it is to Joe's. Jed rails against Joe's “little cage of reason” (133), but we can just as easily imagine Clarissa doing so. Equally, it is clear that, for Joe, the “obscurantist” Keats (71) shares far more with a priest than a quantum electrodynamics expert. In *Saturday*, while bickering good-naturedly with her atheist father, Daisy – literature's representative – reveals herself as no simple atheist (*Saturday* 56). In *Atonement*, the relationship is made explicitly,
tragically clear: the self-deluding Briony wonders how might a “novelist achieve atonement when, with her absolute power of deciding outcomes, she is also God?” (317). Briony's reverie arrives moments after Atonement's revelatory twist – the sort of drastic fictional gesture for which McEwan is famous. Indeed, if authors are Gods, then McEwan – described by Wood as a “compellingly manipulative novelist” (J. Wood, “Manipulations” 16) – is without doubt the hands-on meddler of the Old Testament. “A beginning is an artifice” (17), remarks Enduring Love's hyper-rationalist Joe – shortly after the most contrived and deliberately gripping opening chapter in McEwan's entire oeuvre.

McEwan's problem is his suspicion that the capacities of the human brain allow for both Anna Karenina – and violently apocalyptic narrative interpretations of the Qur'an. In 2013, McEwan wrote of periods when his “faith in fiction” is rattled; when he is deserted by “the god of fiction” and commits the “apostasy” of reading non-fiction before eventually returning to “the one true faith” (“Faith”). McEwan's tongue is firmly in cheek here, but as we have seen, the line between religious and literary belief is a real vexation for him. This explains the sense, beneath even McEwan's most finely-tuned rationalist diatribes, that the atheist doth protest too much. With Joe Rose and Henry Perowne, one is reminded of the “ascetic millionaire and free-thinker” in Jorge Luis Borges's “Tlön, Uqbar, Orbis Tertius,” who “did not believe in God, but wanted to prove to the nonexistent God that mortals could conceive and shape a world” (40). McEwan is always arguing with a God who doesn't exist, yet whose world-making powers feel uncannily similar to those of his own; thus he is arguing with himself, and his novels acquire part of their tension from this authorial conflict. We can be fairly sure that Clarissa's remark regarding a Keats anecdote – that “it isn't true,
but it tells the truth” (McEwan, *Enduring* 169) – sounds, to Joe, like oxymoronic obfuscation. However, Clarissa's phrase is an effective summation of how we might describe all literature – and also how many modern-day believers regard their holy texts.

McEwan’s worry about narrative's power – and its fraught relationship to good hard rationality – also relates to neurofiction's doubled relationship with postmodernism. The public, New Atheist McEwan is sympathetic to what Stephen LeDrew (echoing John Gray) calls “a modern utopian ideology” which is “only manifestly a critique of religion” and is actually advocating for “the universalization of the ideology of scientism and the establishment of its cultural authority” (2). This defense of modernity, in LeDrew's analysis, involves vehemently attacking, amongst other things, “epistemic relativism” (59). Here, once again, the fascinating gap between McEwan's public pronouncements and the fruits of his novelistic labours opens up. In a 2008 interview, McEwan declared “I don’t hold with the sort of postmodern relativist view that the only truth is the one an individual asserts,” and rejected the “intellectually repellent [. . .] anti-rationalist” style of Derrida, Lacan, and Baudrillard (Roberts, *Conversations* 189). And yet, for all McEwan's commitment to a sort of idealised objectivity, his neurofictions problematize this public position via their constant recourse to narrativizing, not rationalising, as the real source of human identity. McEwan can write the most rationalist protagonist in modern fiction, but the protagonist still reliably ends up falling back on the conceptual tools of a novelist rather than an evolutionary biologist. McEwan's presentation of how selfhood functions is far more immune to the enlightening effects of scientific theory, and far more evocative of “a postmodern relativist view” (Roberts, *Conversations* 189) than he would like. The “deflationary reductionist positions”
(Gaedtke, “Cognitive” 186) so in vogue today might represent what Michael Sayeau calls an “enlightened alienation” – but it is still alienation. Attempts at any totalising neuro-introspection still leave us stranded. And the net effect is a situation in which the relevance and nature of selfhood, its capacity to present anything to us other than subjective truth, is highly troubling for the pure rationalist that McEwan describes himself as being.

In essence, it might rankle McEwan to hear people talk about anything other than purely objective truth, but it is subjective realities upon which we see his characters base their real-life decisions. McEwan might not like it, but as Waugh notes, “postmodernist self-reflexivity seems – like the naturalistic account of behaviour – to have no need of mind, authorship or selfhood” (“Naturalistic” 20). In other words, the very scientific accounts which McEwan is committed to, and which he presents as in opposition to the epistemological uncertainties of postmodernism, at bottom offer up these same epistemological uncertainties. Möller's description of the postmodern view of the self as “under constant revision and reconstruction” (29) sounds a lot like Antonio Damasio in *Self Comes to Mind*, or the narrators of *Enduring Love* and *Saturday*.

McEwan is a formally conservative writer who one cannot imagine writing anything featuring (or advocating) a truly fractured, de-centred consciousness, in the manner of a B. S. Johnson, or a William Burroughs. One senses that his meticulously realist writing is a way for him to inject his writing with at least one part straightforward rationalism. And yet – just as G. K. Chesterton said of Nietzsche's “death of God” that it meant not that people would believe in nothing, but that they would believe in anything – lingering throughout McEwan's oeuvre is the fear that the illusory self of popular neuroscience allows for characters who
aren't at their core no-one, but anyone they like. This dynamic of a self bounded by the predictable (though alienating) boundaries of neurology, and at the mercy of the infinitely unpredictable whims of narrative, goes some way to explaining why, throughout McEwan's work, the disintegration of the self precipitated by various forms of brain deterioration is possibly the single strongest and most consistent source of pathos. There is a subtle but constant panic regarding the whole conception of healthy selfhood being so perilously rooted in three pounds of fragile grey matter. Nested in the quiet tragedy of Baxter's “neurodegenerative disorder” (Saturday 111) is the recognition that there is something both radically egalitarian and deeply tragic about all selves sharing a source: the evolved Homo sapiens brain. Instructive here is Lisa Zunshine's comment that “literary artists may show special interest in the failures of cognitive systems, because such breakdowns can prove instructive, because they ring true to our sense of human fallibility” (Introduction 77). “Who could ever reckon up the damage done to love and friendship and all hopes of happiness by a surfeit or depletion of this or that neurotransmitter?” (Saturday 91), wonders Perowne. There is more than professional fascination to this; there is a note of melancholy, of fear. The triumphalism of such much popular neuroscience is converted into an acknowledgment of our fragile physical dependence. Our brain is deteriorating with every second. Which is another way of saying: we are dying every second.

What McEwan's neurofiction reluctantly admits is that the narrative impulse, a deep feature of human consciousness, gives us both the religious mindset and a distinctly postmodern phenomenological experience. This is why McEwan's alignment with a naïvely simple, New Atheist vision of rationality sounds an odd note. Despite what he might tell
interviewers, his works of (neuro)fiction are anxious documents, full of tensions and gaps. I am in general agreement with Malcolm's assessment of McEwan's “career trajectory from quite extreme moral relativism toward a rather clear moral focus” (15). However, this focus is deeply blurred by the multivalent tension that exists between our (brain-based) capacity to act rationally and our (brain-based) capacity to be swept along on the less-rational winds of narrative imagination. McEwan knows that neuro-intersubjectivity isn't the simple, unalloyed good he (and most of us) would like it to be, and empathy isn't the only thing the narrative arts can foster. (Not for nothing did Plato exile the poets from his Republic.) However, in the end, with *Saturday*, McEwan chooses to nail his literary colours to the mast of a project running from Matthew Arnold through George Eliot through Iris Murdoch. In the four years separating *Atonement* and *Saturday*, his belief in the novel undergoes a severe trial of faith, before being redeemed – fragilely, daringly – with the latter novel. In the end, McEwan allows that we are not rational beings, and that we have to let narrative fiction do its mercurial work, hoping and believing that, brain by brain, what will emerge is a form of secular salvation: from cruelty, from loneliness, even from terrorism. A related probing of the potential *and* limits of neuro-intersubjectivity informs the neurofiction of the author featured in my final chapter: Siri Hustvedt.
5. “He called it 'a device by which the dead act upon the living’”: Neuropsychoanalytic Intersubjectivity in Siri Hustvedt's The Sorrows of an American

Although her writing career dates back to the early nineties, scholars have been slow to pay Siri Hustvedt's work serious attention. Leading Hustvedt scholar Hubert Zapf is surely on to something when he suggests that one reason for this is Hustvedt's intellectual omnivorousness. Hustvedt has published as many works of non-fiction as she has novels, and regarding the the central concepts, ideas, and tensions of the present study, she is intimidatingly well-informed. Her two most recent essay collections are both meaty affairs exhibiting a high degree of neuroscientific expertise, and her recent “essay” – it runs to two-hundred pages, and contains 380 footnotes – “The Delusions of Certainty” (Woman 137-340) is one of the most lucid and thought-provoking discussions of neuroculture and the mind-body problem to appear in recent years.

Hustvedt is especially well-informed when it comes to psychoanalysis, neuroscience, and the intersections between the two fields. In 2010, she published a piece in the journal Contemporary Psychoanalysis exploring how the novel that is the focus of this chapter – The Sorrows of an American (2008) – “was generated from the discipline's particular form of dialogue” (“Analyst” 234). A year later, Hustvedt published another essay, this time with the journal Neuropsychoanalysis, integrating complex research on the neurobiology of memory, imagination and “self-processing versus other-processing” (“Three” 184). These intersecting interests – mind and brain, Freud and the fMRI scanner – animate Sorrows. Hustvedt's interdisciplinary flexibility is mirrored in the thematic makeup of her novel, and in the career
of its protagonist, Erik.

Building upon Hustvedt's remark that *Sorrows* “was generated from [psychoanalysis]'s particular form of dialogue” (“Analyst” 234) I explore the way *Sorrows* sheds light on the intersections between psychoanalysis, neuroscience, and neurofictional conceptions of authorship in Hustvedt's writing. I establish that the concept uniting these various intersections is that of (neuro-)intersubjectivity, in which Hustvedt has been invested for her whole career. *Sorrows* explores the boundaries of intersubjectivity – its potential and its limits – conceived as a process that (following Martin Buber) is deeply phenomenological, and (following Maurice Merleau-Ponty) is deeply rooted in the human body. The model of intermingling minds which *Sorrows* presents is dramatised by its plot, and offered metafictionally as a model for authorship in the age of neurofiction.

To an extent, this chapter builds on Klaus Lösch and Paul Heike's argument that Hustvedt's novel “offers the method of psychoanalysis as its poetological model” (143) and “evokes an analogy between psychoanalysis and art/literature as two discourses of explication and presentification” (149). To this analysis, I add the crucial component of Hustvedt's preoccupation with *embodied* theories of mind, and her expansion of this “poetological model” to include a conception of her own craft. By examining *Sorrows* in its widest context, we can see its important and unique place in the genre of neurofiction. *Sorrows* is a novel whose genesis, thematic focus, and self-conscious stance vis-à-vis the production of literary fiction in the neurocultural age are rooted in a neuropsychoanalytic interrogation of the full nature of intersubjectivity. The result is the only existing example of what we might call a *neuro-psychoanalytic-fiction*.
Hustvedt's intellectual depth is one of the things that makes her such an important practitioner of neurofiction. It is fitting that she concludes the present study, because *Sorrows* carries traces of the perspectives of my previous three authors. The neurohorror and failed neuro-introspection of Wallace's *Oblivion*; Powers' attempts in *The Echo Maker* to counter a misanthropic image of insular human selfhood with an Emersonian openness to exterior narratives; McEwan's conflicted and even paradoxical belief in the novel as a moral vehicle – all of these are echoed and partly synthesized in *Sorrows*. The novel is also notable for the way it manifests a key feature of the literary age of the brain – the fine lines between fictional and nonfictional treatments of neuroculture. At the level of both theme and argumentation, there is a rich and constant interplay between Hustvedt's fictional and non-fictional output. In building a foundation for the present analysis, I draw heavily on *Sorrows'* non-fictional “companion piece” (Hornung 69), *The Shaking Woman* (2010), a sort of intellectual memoir from which the novel cannot be untangled.

**Climates of Opinion: (Neuro)Psychoanalysis**

In McEwan's *Enduring Love*, hyper-rationalist protagonist and science writer Joe refers to psychoanalysis as “fabulation run riot” and the product of Freud's “pseudo-scientific mind” (50). Joe's view is shared by much of present-day wider culture and certainly by the scientific establishment. It is a truism that Freud was one of the most influential minds of the 20th century; following his death in 1939, W. H. Auden was able to declare that the father of psychoanalysis had in his lifetime represented “a whole climate of opinion” (275). Since its cultural heyday in the 1950s, however, psychoanalysis's stock has fallen sharply. It has been
largely banished from mainstream medicine, and survives primarily as a hermeneutic framework in sections of the academic humanities.

The decline of psychoanalysis coincides roughly with the rise of the pervasive neuroculture which is this study's cultural setting. Despite Freud spending twenty years working in neurology as a young man, he eventually abandoned any aspirations of developing a material theory of mind, and ever since its first emergence psychoanalysis has been “virtually 'brainless'” in its approach (Bezerra 252). Thus it was that, as Tom Wolfe wrote in 1996, the “the demise of Freudianism can be summed up in a single word: lithium.” Wolfe described how in the early fifties, after years of psychoanalytic ineffectiveness, rapid physical relief for sufferers of bipolar disorder arrived in the form of a pill. This local example is microcosmic of a much wider state of affairs. The primary cause for psychoanalysis's transition from dominant model of mind to object of bemused mockery was the rise of psychiatry and its parent discipline, neuroscience. Slavoj Žižek stressed this in 2006, when he described the widely-held perception that “new advances in the brain sciences have finally put [psychoanalysis] where it belongs, alongside religious confessors and dream-readers in the lumber-room of pre-scientific obscurantist searches for hidden meaning” (“Freud” 32). As Hustvedt herself puts it, Freud is now seen by many people (academic and otherwise) as “a kind of monster of mirage who derailed modernity by feeding all kinds of nonsense to a gullible public until his thought was finally shattered by a new scientific psychiatry founded on the wonders of pharmacology” (Shaking 18).

Wherefore this epistemological gulf and culture clash between neuroscience and psychoanalysis? Both psychoanalysis and neuroculture offer two things at once: a model of
mind – Freud's *metapsychology*; the brain scanner's physical mapping – and a program for how to soothe or improve that mind – talk therapy; or, as a starkest oppositional example, neurochemical intervention. On both counts, the tension between the two disciplines exists in parallel with the various other apparently binary conceptual tensions that animate neurofiction – such as the Two Cultures, or the clash between biologism and constructivism which fuelled the so-called Science Wars. All of these conflicts, in my framing, are rooted in the so-called Hard Problem, or explanatory gap. At its purest, psychoanalysis is pure subjectivity, obsessed with qualia and mental impression and the inner world; by contrast, neuroscience is pure objectivity, uninterested in phenomena that elude a third-person viewpoint. Psychoanalysis builds its theories on the shifting vicissitudes of subjective self-reporting, neuroscience on the empirical evidence gleaned by the scalpel and the fMRI scanner. Central to psychoanalysis is what is called *psychic determinism* – the notion that all subjectively-perceived mental events and all behaviours carry meaning. By contrast, as outlined in my introduction, many neurocultural perspectives on the mind see thinking as at bottom an ephemeral offshoot of entirely inaccessible brain activity, the meaningless emissions of which coalesce to produce an illusory self with an illusory sense of free will. Psychoanalysis holds that – with the help of the right therapist, and on a long enough timeline – the unconscious is *accessible*, at least to some degree. Hard neuro-determinism, meanwhile, holds that we are condemned to live as strangers to ourselves and that any insight into the mind will come by way of external access.73 To the brain sciences, urges and instincts are better explained by Darwinism than they are by internal Oedipal conflicts.

So it is that psychoanalysis is a psychological system that neurocultural psychiatry,
“its biomedical successor,” now regards for the most part “like a cigarette to an ex-smoker – as the despised reminder of a former way of life” (Waugh, “Naturalistic” 27). However, as with other philosophical and epistemological frictions of the neurocultural age, acts of attempted consilience – or at least conciliatory investigation – are underway. Over the last two decades or so, a discipline named neuropsychoanalysis has emerged. This field is keen to remind us that Freud himself was “a neuroscientist and a neurologist for the first two decades of his professional life” (Solms and Turnbull 134), and strove for a while to tie his theories to neurology, as demonstrated in his *A Project for Scientific Psychology* (1895) – a fact “generally left out of popular references to him” (Hustvedt, *Woman* 249). Adherents to the new research program (or what its founder calls “interdiscipline” [Solms and Turnbull 139]) aim to wed psychoanalytic theories (and the insights offered by an analysand's verbal reports) with the pioneering neuroscience research of the past decades.  

Though there are forerunners – Hustvedt points to the work of the psychologist Karl Pribram (Hustvedt, *Woman* 253-254) – neuropsychoanalysis emerged in earnest around the turn of the millennium. In the late nineties, prominent neuroscientist Eric Kandel published two landmark papers that followed earlier contributions in helping to give the fledgling field impetus and direction. Increasing numbers of psychoanalysts began to engage with the brain sciences. In 1999, neuropsychoanalysis held its first international conference and founded the journal, *Neuropsychoanalysis*, in which, eleven years later, Siri Hustvedt would publish an essay. A 2012 special issue of *The Psychoanalytic Review* dedicated to the new brain-inspired field demonstrated how it had consolidated itself, and further examples of conciliatory research continue to appear. In 2013, Kandel wrote that “although the
desirability of a partnership with brain science is still a minority view in the psychoanalytic community, it is a view that is gaining strength” (qtd. in Laufer 7).

The question of whether “neuroscience and the Freudian legacy [should] be brought together,” writes Benilton Bezerra, a practicing psychoanalyst, is “a major issue that divides psychoanalysts” (250). What for some is “an opportunity for setting psychoanalysis on scientific ground and opening its future to a promising horizon” is for others “just a misleading project, if not a threat to its very existence” (251-252). As with other instances of the variously Two-Cultured debates that animate this study, many offer a mediating voice (Costa). Within the discipline(s), the arguments about neuropsychoanalysis's validity and usefulness continue to rage. A full response to this debate lies outside the bounds of the present study. However, the basic aspirations of neuropsychoanalysis – to honour and include the subjective, witnessing minds in accounts of reality and wellbeing, while attempting to incorporate evidence from the brain sciences – are reflected in my interpretation of Hustvedt's The Sorrows of an American.

“It has unleashed me to my art”: Hustvedt and (Neuro)Psychoanalysis

It borders on being a truism that there is an affinity between literature and psychoanalysis. In its heyday, psychoanalysis grabbed the attention of countless writers. In a 1936 letter to The Spectator on Freud's 80th birthday praising “the stimulus he gave to creative thought” (Mann et. al) was signed by Thomas Mann, Virginia Woolf, H. G. Wells, Stefan Zweig, and others; Lionel Trilling remarked in 1940 that “Freudian psychology . . . makes poetry indigenous to the very constitution of the mind” (52). One could go on. Psychoanalysis is broadly
Amenable to literature for precisely the reasons it *isn't* amenable to a hard neurocultural stance. Psychoanalysis cares deeply about subjective life. Both literature and psychoanalysis are resistant to evidential evaluation; both are resistant to the scientistic notion that “neurons are more eloquent and convincing than self-reports or other non-biological ways of evaluation” (Bezerra 260); both are invested in what psychoanalytic language calls *symbolic otherness*. Freud himself was struck by the literary quality of his case studies, which appeared to “read like novellas and lack, so to speak, the serious stamp of science” (Freud and Breuer 164). Just as *The Echo Maker*'s anti-reductionist Gerald Weber wants to illuminate his students' understanding of the brain/mind by assigning “Proust and Carroll . . . Borges's 'Funes'” (365), Freud's touchstones were Shakespeare, Dickens, Dostoevsky, Milton. Hans W. Loewald and latterly Shoshana Felman have developed the parallels between art and psychoanalysis (qtd in Lösch and Paul 141). Felman argues that the two are “enfolded within' each other” (qtd in Lösch and Paul 141).

The relationship between psychoanalysis and literature endures to this day with Hustvedt. Psychoanalysis, wrote Hustvedt in 2010, is “a discipline I've been fascinated by since I was sixteen and first read Freud” (*Shaking* 17). Hustvedt drew on Freud in her dissertation (an analysis of Dickens's *Our Mutual Friend*), and after earning her Ph.D. in 1986, she began “training to earn my living as a psychoanalyst, but I was too poor for more schooling” (*Living* 39). Psychoanalysis lingers in the margins of all of the works published earlier than those I focus on here. Freud is mentioned briefly in *The Enchantment of Lily Dahl* (1996), and in *What I Loved* (2003), Violet's references to psychoanalytic concepts of hysteria are erudite and well-informed. None of Hustvedt's post-2000 non-fiction touching
on anything in the realm of human psychology neglects to refer to Freud, usually at some length. So significant is his influence on Hustvedt's writing that the only scholarly essay collection dedicated to her work features a whole section centred on psychoanalysis (Hartman et al 81-184).

As hinted at by her earlier aspirations to train as an analyst, Hustvedt's engagement with psychoanalysis is not only intellectual, but also personal. At the outset of her memoir, *The Shaking Woman* (published in 2010), Hustvedt writes, “I've never been in psychoanalysis” (19). However, within the course of the book, she briefly sees a Dr. C., and more recent publications reveal that from roughly this point forward, Hustvedt has been “in psychoanalytically based psychotherapy twice a week” (*Woman* 118). Her 2011 novel *The Summer Without Men*, is dedicated to Hustvedt's own psychoanalyst (Freeman), and in May of that year, Hustvedt delivered the thirty-ninth annual Sigmund Freud Lecture in Vienna. The psychoanalyst Dr. Rachel Briefman is a prominent character in *The Blazing World* (2014), possibly the wisest voice in the whole novel. Psychoanalysis “unleashes” (23) the protagonist Harriet Burden in a way that fuels the whole plot. Towards the end of her life she declares that her analyst, Dr. F., “has known me better than anyone. Strange, but true” (338). Harriet's enthusiasm would appear to be partly the author's own: By the time of her 2016 essay collection, Hustvedt is able to declare that psychoanalysis has been “central to what I now think of as an internal revolution wrought in therapy” (*Woman* 118), and contrary to any worry that it may have “robbed me of creativity . . . it has unleashed me to my art” (132). “I have written what I could not have written before,” she declares, “I dance, romp, howl, whimper, rage, lecture, and spit on the page now. All of this is of the room, from the room,
inside the room. It is where I found liberty in that strange place between me and you” (134). The *between me and you* of psychoanalysis is the central idea Hustvedt imports into her conception of neurofiction.

Alongside this heartfelt enthusiasm for psychoanalysis has been Hustvedt's more recent engagement with neuroscience. Around 2005, Hustvedt wrote that she “knew next to nothing about the physiology of the brain” (*Living* 124). This would change starkly in the intervening decade or so. It is now hard to imagine a Hustvedt who doesn't draw on a vast amount of neuroscientific learning; we might even suggest there are two halves of her career: the approximately fifteen years (and three novels) prior to her becoming interested in the brain, and the approximately fifteen years (and three novels) after. Hustvedt's interest in the brain ramps up significantly in the five years between her novels *What I Loved* and my focus text, *Sorrows*. Like so many practitioners of neurofiction, Hustvedt's enquiries began not with simply the brain, but the malfunctioning brain: *Shaking* is a memoir-cum-intellectual detective story, an exploration of Hustvedt's being afflicted with an ill-defined shaking. Driven to understand her affliction, Hustvedt “threw [her]self into the convolutions of psychiatric diagnoses and the innumerable mental disorders that afflict human beings” (*Shaking* 5). In investigating (à la Ian Hacking) “the ambiguities of diagnosis and how illnesses are framed in various disciplines” (*Living* 137) and examining the “the mind-body question . . . from multiple perspectives” (*Woman* 11), she was led into the world of neuroscience and neuroculture. The essay collection *A Woman Looking at Men Looking at Women* (2016) consolidates these explorations, and displays a familiarity with the modern brain sciences unique among her literary peers.
In sum, one can make a strong case that Hustvedt is the contemporary Anglo-American novelist most knowledgable about both psychoanalysis and neuroscience. Little surprise, then, that despite the field being fairly niche, she was moved to engage with neuropsychoanalysis and its attempts to synthesize and mediate between the two disciplines. Starting around 2004, as Hustvedt notes, “through Mark Solms, a psychoanalyst and brain researcher who has spearheaded a dialogue between neuroscience and psychoanalysis, I became a member of a study group” (Living 124). Witnessing the “dissonant vocabularies” (Living 124) of the two disciplines and their attempts to connect, Hustvedt began to combine her “lifelong curiosity about psychoanalytic theory” (Woman 118) with a voracious interest in the brain. By Hustvedt's own admission, by the time she was writing her 2008 novel, she “had been steeped in the world of the brain/mind for years” (Shaking 6), her interest in the subject becoming an “overriding passion” (6). This passion animates Sorrows. Indeed, a review of the novel in the American Journal of Psychiatry questioned its “neuropsychoanalytic name dropping,” even suggesting that its direct engagement with the topics of psychoanalysis and neuroscience could mean that “psychiatrists hoping to relax with a book placed outside of specialty journals or case conferences may be disappointed” (Seritan 1618).

Hustvedt's interest in neuropsychoanalysis persists: as recently as 2016, she highlights the works of various researchers in neuropsychoanalysis (Woman 226). For the present chapter, though, it is this formative and focussed period of learning, spanning roughly 2004 until 2008, in which I am interested – a period that coincides crucially with the time she was writing Sorrows.
“I was talking to a dead man”: *Shaking* and *Sorrows*

Confirming Williamson's assertion that throughout Hustvedt's work “her fictional and nonfictional creative impulses are entirely interdependent,” *(235)*, *Sorrows* is a novel that in a formal sense cannot be untangled from its non-fictional “companion piece” *(Hornung 69)*, *Shaking*, and explores unique ground with regard to the interplay between autobiography and fiction. *Sorrows* has its very being in slippages of factual and fictional subjectivity known in psychoanalytic parlance as transference and countertransference – ideas central to the novel's genesis and content, as well as Hustvedt's own conception of her craft.

During *Sorrows*, we read that Max, a recently departed genius novelist, “tapped the underground in his stories – the harrowing nether regions of human life, articulated in a language we all understand” *(45)*. A belief in the primacy of this *underground* is similarly subscribed to by Max's creator. Literature is dependant, as Hustvedt has described it, on the “subliminal regions of a person . . . what is down there . . . a writer's depths” *(Woman 18)*. In her *Neuropsychoanalysis* essay, she writes “the secret to creativity lies . . . in the dreamlike reconfigurations of emotional meanings that take place unconsciously” (“Three” 187).

In Hustvedt's work, these subliminal and unconscious depths are central to relations between separate consciousnesses – an abiding concern of all neurofiction. Hustvedt has said that “the question of borders between a me and a you, the problem of a self or an identity in relation to others, and the nature of intersubjectivity have been obsessive themes in both my fiction and my nonfiction” *(Woman 369)*. Christine Marks, in the first book-length study of Hustvedt's work, has mapped out this obsession and established that a “defiance of the
Cartesian self” (9) has been an animating force throughout Hustvedt's career. As Marks outlines, central to Hustvedt's entire literary project is a philosophical and even political advocacy of “a relational model of subjectivity” (1) – a model developed through Hustvedt's synthesis of Martin Buber, Hegel, M. M. Bakhtin, Edmund Husserl, Maurice Merleau-Ponty, Emmanuel Levinas, and others (21-66). I draw on two of these thinkers here – Buber and Merleau-Ponty – to map the complex thematic and metafictional dynamics of Sorrows.

Martin Buber (1878-1965), an Israeli philosopher and existentialist, was a major proponent of dialogism who “believed that the foundation for human existence is relational” and that the “Between” was “an ontological reality” (Hustvedt, Woman 349). As Hustvedt describes, for Buber,

“the Between,” was an ontological reality that could not be reduced to either person involved and was more than both. The ideal relation between human beings resulted in “a change from communication to communion, that is, in the embodiment of the word dialogue” . . . It was not a relation of immersion or loss in the other person, not a schizophrenic confusion of I and you. It was a third reality. (Living 201)

Buber's “Between” is roughly analogous to what Freud called the Tummelplatz (“playground”), the realm in which the important (though elusive) psychoanalytic concepts of transference and countertransference – both central to Hustvedt's 2011 Sigmund Freud lecture (Living 196-219) – are made manifest. Transference refers to “our tendency to unconsciously carry over the baggage of the past into present relationships, thus 'investing' new figures with buried feelings, expectations and beliefs” (Pick 23). Noticing how and when transference occurs offers a way, in psychoanalytic thought, for us to therapeutically
modify their patterns. Countertransference (an idea developed by post-Freudians) is essentially transference in reverse, in which the analyst projects buried psychic content onto the analysand. In both instances, the broadly salient point is that subjectivities – past, present, alive, dead, in the room, outside the room – influence and affect one another unconsciously, in ongoing dynamic loops.

This psychoanalytic and Buberian intersubjectivity emerges as more than an intellectual preoccupation for Hustvedt, and it finds the element of material instantiation which is the hallmark of neuro-psychoaanalysis in the work of Maurice Merleau-Ponty. Merleau-Ponty's pioneering theories of the embodied mind – in which intersubjectivity is in fact indistinguishable from what he called intercorporeality – recall the analysis of Powers' work in Chapter 2. Embodiment is a theory and research program Hustvedt is deeply invested in, regarding the “strong return to the body in many disciplines” (Woman 12) (and concurrent move away from computational theories of mind) as a major intellectual trend of our time.78 Merleau-Ponty's conception of the self and the body as a unified system – via which intersubjectivity becomes not only a meeting of minds but a totally immersive meeting of brains/bodies – finds expression at the level of Hustvedt's own vision of her craft. She has said that “books are literally animated by the people who read them because reading is an embodied act” (Living 134).

Before this theoretical conception, though, a Buberian and Merleau-Pontian idea of neuro-intersubjectivity finds lived validation via Hustvedt's experiences with mirror-touch synaesthesia. Hustvedt describes this rare condition – not described or named until 200579 – as producing a situation where “a person feels another person being touched or in pain

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simply by looking at him or her” (Shaking 117). She goes on:

For as long as I can remember, I have felt the taps, knocks, and bumps, as well as the moods, of other people, almost as if they are mine. I can tell the difference between an actual touch and the one I feel when I look, but the sensation is there nevertheless. I feel the sprained ankle of someone else as a pain in my own . . . Looking at or even thinking about ice or an ice cube makes me shiver. My empathy is extreme and, to be frank, I sometimes feel too much and need to protect myself from overexposure to stimuli that will turn me into a pillar of aching flesh. (118)

The “extreme” (118) empathy of mirror-touch synaesthesia is a sort of lived neuro-intersubjectivity, Buberian in its directness, and evocative of Merleau-Ponty in its physicality. A deep direct intermingling of minds on these terms is central to Sorrows' blending of autobiography and fiction, and central as well to its relationship with Shaking, Hustvedt's memoir of the aftermath of her father's death. Hustvedt's father, a professor of Norwegian-American history, passed away in February of 2004. During the summer of 2006, while giving a speech at his memorial service, Hustvedt first experienced the ill-defined shaking that is the focus of Shaking. A central feature of Hustvedt's brain memoir (to borrow Jason Tougaw's term) is her investigations into whether “the 'shaking woman' found a point of traumatic origin in the shaken (and at times shaking) father” (Rabaté 338) – whether her mysterious physical affliction might resemble something like conversion disorder, the modern term for a Freudian 'hysteria' in which unacknowledged grief has mutated into physical form. In Shaking, we learn that Hustvedt experienced a form of what we might call mirror-touch authorship. Prior to her father's death, Hustvedt experienced some spookily intersubjective moments with him. In the last week of his life, after visiting him in hospital,
she climbed into her childhood bed and suddenly “felt the oxygen line in my nostrils . . . the heaviness of my lame leg . . . the pressure in my tightened lungs . . . For however long it lasted, only minutes, I was my father” (Shaking 125). She experienced, she writes, “minutes of nearly complete identification with my father as I lay in my childhood bed” (128).

In direct parallel with its non-fictional counterpart, Sorrows emerged, Hustvedt has said, “directly out of my father's death” (Shaking 40). The novel draws on the very same intersubjective currents. Sorrows is centred on Erik and Inga's attempts to come to terms with the death of their father. As Erik reminds us early in the novel, Auguste Comte called the brain “a device by which the dead act upon the living” (Sorrows 5) – and for both Erik and his author, grieving takes the form of enacting forms of entering and exploring the departed mind of his father, processes that the reader is in turn privy to via the novel's own cast of subjectivities. Erik becomes immersed in his father's diaries and letters, and these textual fragments inspire Erik to write in response, provoking the feeling that “I was talking to a dead man” (22). This is a metafictional rendering of Hustvedt's own creative process. The novel's italicized passages are in fact direct transcriptions of her father's real-life diaries and memoirs, and she has described how reading and then re-typing his Second World War memoir and letters herself gave the impression that “the words of the text I had written fell somewhere between us – not his, not quite mine – somewhere in the middle (Shaking 126). Meanwhile, Hustvedt has described how Sorrows was also

generated by an unbidden mental image that came to me while I was daydreaming. In a room that looked very much like the tiny living room in my grandparents' farmhouse, I saw a table. On the table was an open coffin, and in the coffin lay a girl.
Then, as I watched, she sat up. (Living 38)

She later describes this image as “recurring” (Woman 15), and determines that an “undisguised wish to wake the dead must have been at the heart of the fantasy” (Living 39) (her father was very close to death at this point). In summary, Hustvedt experienced moments of intersubjective identification with her dying father (as described in Shaking), and then symbolic daydreams of a desire for resurrection. The novel itself closes with a young girl named Eggy returning to consciousness, having been on the brink of possible death – followed by Erik's memory of his patient, Ms. W., saying “reincarnation” (Sorrows 304). The “imaginative version” (Shaking 126) of Hustvedt's father's life now lives forever on the page. This complex mixing of family relations, psychic spaces and obscurely meaningful (day)dreams is almost clichédly psychoanalytic.\(^{(80)}\)

Regardless of whether it is quite so cut-and-dried as Jean-Michel Rabaté’s declaration that “[Hustvedt] invented a fictional therapist obsessed with his father's war trauma in order to overcome the grief that she had felt at her own father's death” (338), Sorrows has its roots in neuro-intersubjective slippages that were translated directly into the landscape of the text, as both content and form. In regard to Sorrows' “analyst hero” (Woman 118), Erik, Hustvedt has described how she wrote the novel as one “in which I would have to impersonate a psychiatrist and psychoanalyst, a man I came to think of as my imaginary brother” (Shaking 5). In writing the novel, she describes, she needed “to be Erik” (Shaking 5, emphasis added). The complex alchemising of the autobiography of Shaking into fictional form extends to the “Between” conjured for Hustvedt and her characters. Hustvedt has said that “every work of fiction is written for the other, an imagined other . . . In psychoanalysis, I must also bump up
against a real other, my analyst” (Living 218). Shaking follows Sorrows in blurring the line between the imagined and the real in these psychoanalytic processes of literary creation.

Elsewhere, Hustvedt describes Erik as “my imaginary brother-analyst-self” (Living 39), and the psychoanalyst Lucien Mélèse writes that Hustvedt is present in the book “in a double persona” (89). This doubling doesn't only pertain to Erik, either. As Diana Tappen-Scheuermann notes, “it is hard not to notice the resemblances between the fictional character Inga [Erik's sister] and her creator” (46). Both Inga and Hustvedt herself are women of Norwegian descent who are obsessed with researching “the problem of consciousness” (Sorrows 47), are married to a famous writer (Hustvedt is married to Paul Auster), and suffer from both a mysterious shaking disorder (4) and a synaesthetic emotional fragility (24-25). In the scheme of the novel, the Davidsen siblings together embody various features of their creator in a fashion that evokes the work of Søren Kierkegaard – a thinker both they and their creator adore.

“Where therapy, imaginative play, and the creative process of the artist all occur”:

Neuropsychoanalysis and Authorship

So it is that transferences and countertransferences of subjective influences and qualities are at the very core of the genesis and creation of Sorrows. The final way in which Sorrows enacts this interplay is at the level of metafiction. Reflecting on the novel's relationship to psychoanalysis, Hustvedt writes that Sorrows “as a whole was generated from the discipline's particular form of dialogue” (“Analyst” 234). As with most works of neurofiction, Sorrows is interrogating and reframing the novelistic form for the era of neuroculture, asking what
psychological function it performs and how. The novel draws a subtle but clear parallel between the neuropsychoanalytic dynamic and Hustvedt's conception of the relationship between author and reader or text and reader.

Hustvedt has drawn explicit connections between the literary and the psychoanalytic. At times she will even slip into explicitly psychoanalytic language on this front: writing about the French-American artist Louise Bourgeois (who spent thirty years in psychoanalysis with Henry Lowenfeld), she says that art always “involves a form of transference” (Woman 27). In Hustvedt's conception, the Buberian “Between” “is where therapy, imaginative play, and the creative process of the artist all occur” (Living 218). These linkages have not entirely escaped the notice of previous critics. Lösch and Paul have discussed Hustvedt's engagement with the “tacit dimension” of knowledge (a term they borrow from Michael Polanyi) and have outlined the ways in which “Hustvedt probes . . . the analogies between the 'talking cure,' as Freud has described psychoanalytical theory, and fictional works that also try to make sense of a past” (134):

Hustvedt makes a claim for the connection of fiction writing to psychoanalytical treatment as both invested in processes of a difficult and painful presentification of things known tacitly, a presentification that can have different functions such as putting into words emotional discomfort and pain . . . or entering an intersubjective realm of communication and shared feeling and thus creating empathy.81 (Lösch and Paul 142)

However, Lösch and Paul's argument is underdeveloped. Hustvedt connects fiction writing not just to psychoanalysis, but to neurepsyc Psychoanalysis. For Hustvedt, the raw
material of novels begins with “work that is done subliminally” (Woman 16) by the
embodied mind. That “the book can know more than the writer knows” (Hustvedt, Living 39)
and many of the “real secrets” of a novel like Sorrows “never come to light at all” (40) is the
function of not (or not only) the occluded Freudian subconscious, but the physiological limits
of neuro-introspection. “When I write,” says Hustvedt, channeling Merleau-Ponty, “I see
images in my mind, and I feel the rhythms of my sentences, embodied temporal
expectancies, and I am guided by gut feelings” (Living 195). Writing, in other words, is a
somatic, embodied process, which is about plumbing psychological depths that (like
intersubjectivity, again per Merleau-Ponty) have their elemental basis in the biological. From
these biological bases come the transferences via which the autobiography of Shaking is
transferred into the fiction of a Sorrows. As Hustvedt puts it, in somewhat technical terms,
imaginative writing mimics the channels via which consciousnesses touch by producing “a
bridge between a timeless core sensorimotor affective self and the fully self-conscious,
reasoning and/or narrating linguistic cultural self, rooted in the subjective-intersubjective
realities of time and space” (Living 195). In turn, we can see reading as a process of engaging
in further brain-body processes of countertransference, occurring within the intersubjective
space forged between author and reader. Again, on this point Hustvedt evokes a theme of
physical embodiment alien to classical psychoanalysis. “The act of reading,” she says,
takes place in human time; in the time of the body, and it partakes of the body’s
rhythms, of heartbeat and breath, of the movement of our eyes, and of our fingers that
turn the pages . . . Reading is a particular human experience of collaboration with the
words of another person . . . Books are literally animated by the people who read
them because reading is an embodied act. (Looking 134)
Just as the novel emerged out of neuro-intersubjective interplays in Hustvedt's own life and mind – between fact and fiction, father and daughter, author and character – the novel passes itself on to the reader by related processes occurring between author and reader. In both cases, a psychoanalytic conception of a space of potential psychic transference is just as important as a neuroscientific idea of the mind as embodied and physically embedded.

This neuropsychoanalytic conception of how subjectivities function – and thus how connections emerge between self and other, and in turn between author and reader – is endorsed by Sorrows' protagonist, Erik. Erik's enthusiasm for uniting the oft-antagonistic fields of neuroscience and psychoanalysis is demonstrated most obviously by his express dissatisfaction with how either discipline functions in isolation. “Neurological debilities always have content,” he says. “This is something that hard science has been loath to recognize” (Sorrows 25). Erik sees mental life as complex and therapy as “a process of discovery” (79), not simply pill-pushing. His late father's propensity for going on long midnight walks is a fugue-like affliction that Erik “can't help thinking . . . was another form of fugue, one we haven't named” (34). The suggestion is that for all its totalising taxonomical ambitions, the Diagnostic and Statistical Manual of Mental Disorders will always misrepresent, simplify, reduce. An extreme example of this stance would be that expressed by Thomas Szasz, the psychoanalyst and fierce critic of psychiatry, whom Jeffery Lane, an eccentric character who stalks Erik, likes to quote (220).82

However, while he recognizes neurological psychiatry's diagnostic and taxonomical shortcomings, Erik also refers to how “psychoanalysis has often disregarded the physiology of various forms of mental illness” (Sorrows 25). This disregard irks him. Unlike many of his
colleagues, Erik reads scholarship “on the neurobiology of depression” (58), as well as the avowedly interdisciplinary *Journal of Consciousness Studies* (215). When he leaves the city for a while, he takes with him “a briefcase full of papers on affect and the brain” (175). Mentioning briefly Capgras syndrome, the disorder at the core of Powers' *The Echo Maker*, Erik says that it probably relates not to any psychoanalytically conceived psychic structure, but to a disconnection of “neural circuits” (160).

These intersecting beliefs – that physiological psychiatry without the broadly psychoanalytic angle is reductive; that psychoanalysis without the insights of physiology is hamstrung and incomplete – are alleviated, within *Sorrows*, by Burton. An old friend of Erik's from medical school, Burton – now a scholar working in “the unremunerative but honourable field of medical history” (*Sorrows* 68) – introduces Erik to neuropsychoanalysis. He describes neuropsychoanalysis as “the herald of a new day, a rapprochement between disciplines: brain and mind” (143). Burton attends monthly sessions (305) that, we assume, are based on those Hustvedt herself attended while researching *Sorrows*. Erik appears to find his friend's invitation and enquiries interesting, as he soon delivers a paper at “the Brain and Mind Conference” (154). Erik credits the bedrock insight of neuropsychoanalysis – that “Freud was right that most of what the brain does is unconscious” (104) – and offers an explicitly neuropsychoanalytic account of memory (80-81).

Erik (and *Sorrows*) gives a Buberian conception of the “Between” an embodied, Merleau-Pontian dimension when he makes reference to mirror neurons – one of the most famous neuroscientific discoveries of the last few decades. Once again, Erik is introduced to mirror neurons by Burton. Though this (143) is the only explicit mention they receive in
Sorrows, mirror neurons are a potent symbol for the novel's focus on material intersubjectivity. Discovered (accidentally) in 1996 in the macaque monkey, mirror neurons are “neurons in the premotor cortex of the brain that fire when an animal performs an action . . . but also fire when another animal simply observes the same action” (*Living* 204). Hustvedt has shown an abiding interest in mirror neurons for years. In *Shaking* they are described as “part of the dialectical back-and-forth inherent in human relations, a biological root for the reflexivity of 'I' and 'you'” (93). They serve an identical function in *Sorrows*. When Erik attends an “Empathy Conference . . . with its good and bad papers” (41), we can safely assume that some of these papers make reference to mirror neurons. Their “psychobiology of the Between” (*Living* 7) speaks to the novel's core concerns.

The novel's investment in a Merleau-Pontian conception of neuro-intersubjectivity is also translated into the life of Hustvedt's other pseudo-stand-in character, Inga. Inga, we discover, is working on a book that echoes the pioneering work of Antonio Damasio in examining personal accounts from Descartes, Pascal, Wittgenstein, and Kierkegaard to show how “feelings and ideas are inseparable” (*Sorrows* 55) – that is, how all of cognition is somatic, bodily, non-dualist. There are hints throughout the novel, where we see how the expressions and interactions of subjectivities are given a physical component. Erik feels “a memory in my body” (32). The anxiety of Jeffery Lane breaking into his house leaves “a trace in my body, an aftermath of anxiety that made me quicken to noises and sensitive to people near us” (116). The young Lisa Odland nearly dies in a fire as an infant, and though she is not told about this, “the implicit memory of the fire, one she never consciously retrieved, must nevertheless have primed her emotional responses” (185). These moments
again evoke a link with *Sorrows*’ “companion piece” (Hornung 69). *Shaking*, whose genesis (Hustvedt's strange shaking) was rooted in an unconscious, somatic reaction to intense, emotional experience.

Hustvedt's metafictional understanding of a neuropsychoanalytic conception of inter-subjectivity receives implicit but strong backing via both Erik and Inga's expressly neuropsychoanalytic understanding of cognition, emotion, and inter-subjectivity. It would be stepping too much into the realm of self-reflexive metafiction for Hustvedt's characters to comment on their existence within a textual reality whose literary instantiation enacts these same conceptual processes at what from the interior of the novel would be a cosmic level – but Hustvedt's characters' consistent, explicit references to the validity of the wider research program can be read as functioning in just this fashion. Erik and Inga are the product of transferences and overlapping subjectivities, of the conversion of experience into projected narrative, and a Merleau-Pontian concept of how minds/brains/bodies collide. To Hustvedt, the same goes for author and reader. The reader, too, is engaged with the textual landscape of the novel via processes of transference that by necessity loop in both the psyche and its physical agent, the brain.

“*I am inhabited by my patients*”: The Potential of Neuro-intersubjectivity

The wider landscape of *Sorrows* is one in which the establishment of a unique and multilayered conception of neuro-intersubjectivity brings with it a deep interrogation of the very same. Having explored the richness of a Buberian-Merleau-Pontian model of the embodied “Between,” the novel then investigates both the potential *and* the limits of this
model. Much of the raw plot of the novel is dedicated to this investigation, to charting what is to be gained from the deepest possible intermingling of separate minds – as well as what is put at risk by pushing such a state of being beyond a certain, hard-to-define boundary.

*Sorrows* advocates for the necessity and potency of neuro-intersubjective connection at both a textual and metafictional level partly as an antidote to the limits of that other central concern of neurofiction: neuro-introspection. The novel's author and characters both follow many works of neurofiction in accepting both Freud and modern neuroscience's case that any act of autobiography “is fraught with questions of perspective, self-knowledge, repression, and outright delusion” (*Sorrows* 8). Again, *Sorrows* takes its lead here from *Shaking*, where Hustvedt says of the root cause of her trembling fits that “the only certainty was that it wasn't available to my consciousness” (32) and that if the shaking attaches to some sort of memory, “it is implicit, not explicit . . . [T]he shaking itself doesn't involve my higher self-reflexive consciousness” (115). The gaps, errors and blind spots of self-perception are consistently highlighted in *Sorrows*. Waiting in the ER at the close of the book, Erik (sounding momentarily like a narrator from Wallace's *Oblivion*) feels the “awful accumulation of meaningless sensory information” (299). The “subliminal regions of a person . . . what is down there” (Hustvedt, *Woman* 18) lurk indecipherably in the lives of all the novel's characters, converting only vaguely into artworks and dreams. *Sorrows'* numerous references to dreams – surreal, baffling, indecipherable dreams – mean the reader can never forget the raw inaccessibility of much of the mind; the fact that, as Rainer Maria Rilke put it in the letter of his that Erik idly recalls, “if we think of this existence of the individual as a larger or smaller room, it appears that most people learn to know only a corner of their room, a place
by the window, a strip of floor on which they walk up and down” (Sorrows 219).

This diminished state of being can be improved through Hustvedt's neuropsychoanalytic approach to both relations between people and the nature of literary creation – both of which receive metaphorical expression via Erik's approach to his therapy. His openness to integrating insights from the brain sciences aside, Sorrows' “analyst hero” (Hustvedt, Woman 118) occupies a certain role within the specialized history of psychoanalysis, in terms of his approach to the processes of transference and countertransference. As Hustvedt has pointed out, “Freud created the ideal of an analyst whose desires and biases were held back” (“Analyst” 228) – a type of psychoanalysis where the analyst's “first-person reality [is] transformed into the disembodied third-person view heralded by science” (228). However, many (if not most) psychoanalysts have traded this position “for a more attainable posture that recognizes therapy as an intersubjective process” (228). This is especially true within what has been called relational psychoanalysis, epitomised by thinkers including D. W. Winnicott. Over decades, Winnicott and others have developed Freud's theories with the insistence that analysts shouldn't “rise above” the intersubjective process, that “transference is human, and it moves in both directions” (Hustvedt, Living 199). On this point, Hustvedt once again overlays the psychoanalytic theory with the concept of Buber's “I-thou dialectic” (202). The value of this more intersubjectively involved form of psychoanalysis has also been validated by Hustvedt's personal experience in therapy. In the novel, the stance manifests as Erik's approach to his psychoanalytic work, and metafictionally enacts Hustvedt's neuropsychoanalytic approach to writing. When Erik muses that “the strangeness of language” is that “it crosses the
boundaries of the body, is at once inside and outside” (16), he is also talking about language as it facilitates transferences and counter-transferences that cross the bodies of readers, moving through the page and into their reading brains – where, to quote Hustvedt again, “books are literally animated by the people who read them because reading is an embodied act” (*Looking* 134)

Erik hints at his evolved approach to intersubjectivity at a dinner party when he is asked if he “follows the orthodox Freudian line” (104). “[A] lot has happened in psychoanalysis since Freud” (104), he replies. Throughout, we witness the influence of Erik's period as a psychiatric resident, during which he saw “how precarious it all is – where we begin and end, our bodies, our words, inside and outside” (183-184). Large sections of the novel are taken up with depictions of Erik's sessions with his patients, in which we see that Erik is an analyst for whom transferences – weighted, intense, relentless transferences – are the norm. When a patient, Mr. R., demands to know what Erik is thinking, not just talk about what he (Mr. R.) is thinking, Erik obliges, relating his anger at Mr. R.'s consistent lateness to what Mr. R. himself must have felt towards his parents as a child (82). In another session with a patient named Ms. W., he wonders out loud if he is taking “the part of [her] father” (148). His subjective states feel the pull and influence of her dreams. When Ms. W. describes a dream during which she was “bashing [him] like crazy” (265) with a hammer, Erik feels “dread” (265) – until it turns out that in the dream no real harm was done, his dream-self remained calm, and he feels a “tremendous relief” (265). Erik summarises things best when he describes the “analyst as a vessel” (183) and declares that “I am inhabited by my patients” (38). Every one of Erik's professional encounters has a closeness, a subjective investment.
When he sits down in the evenings to go over his patient notes, he finds that “unexpected associations . . . arrived from the recesses of my brain” (22). When he is away from his patients, he misses them (202). With the degree of intersubjective closeness he allows, we are not surprised that, for Erik, “stalking is something of a professional hazard” (40).

Erik's relationship to his patients mimics Hustvedt's relationship to her characters and readers. The transferences and countertransferences, and the psychic co-habitation, parallel the neuropsychoanalytic craft and literary creation. To. W., Erik says “I [feel] alive with you, interested, personally involved” (147) – ditto, ideally, the loop between authors, characters, and readers. Erik misses his patients just as writers and readers miss characters. Erik's sense that his “vision of Ms. L. . . . had also been an image of [him]self” (89) mirrors the sense of identification at the heart of the reading experience. Hustvedt has said of her protagonist that “his patients are part of his inner world” (“Analyst” 233). The same goes for literary characters in the inner worlds of author and reader. When she says that “every sentence inscribed on a page represents a bid for contact and a hope for understanding” (Living xiii), we can say the same for every utterance made in the psychoanalyst's office.

These salutary reachings for interpersonal connection colour the rest of Sorrows. Against the limits of neuro-introspection, we see that – as with Hustvedt's cathartic process of engaging directly with the memory of her departed father – Sorrows' characters all find progress, catharsis, and peace in the embodied Buberian “Between.” In contrast, the novel dramatizes the initial failure of processes of healing that are overly solitary. Erik becomes reclusive and obsessive; Inga searches for a greater understanding of her late husband's infidelity by staying home and repeatedly watching the movies adapted from the screenplays.
he wrote; Sonia attempts to overcome her traumatic memories of 9/11 by plumbing her unconscious in a poem called “Bones and Angels.” However, insofar as the novel's characters overcome their various traumas, they do so in tandem with other people, and via processes that – as per the neuropsychoanalytic perspective – are both subjective and embodied. A key driver of the novel's plot is the discovery, amongst the father's papers, of a 1937 letter from a girl named Lisa to Lars (Erik's father), admonishing him to keep some terrible secret. The sisters spend much time tracking down the truth of this letter, via archives and old family contacts. What is revealed at the end of their hunt is far less important than that the siblings (and Sonia) undertake this journey together. As Tougaw recognises, Erik's emotional crisis is in no small part a result of his “self-imposed isolation,” and his recovery is facilitated by a “return to the messy world of the social” driven by his “getting involved in the novel's two-pronged mystery plot” (“Touching” 351) (the second prong being the drama and blackmail around the papers of Inga's late husband, Henry). In body and mind, Erik finds his way to the people, places, and conversations that ultimately afford him a way out of his grief. Similarly, Inga begins to find peace in the wake of physically meeting her late husband's lover, and Sonia feels a rush of relief when – recalling Daisy's reading of “Dover Beach” in McEwan's Saturday – she recites her poem to Erik. All of these processes are intersubjective, but they are also, to borrow Merleau-Ponty's term, intercorporeal – involving the real, physical, bodily presence of other human beings. Late in the novel, Erik visits the old family home in the middle of night and sees a vision of his father as a young man (250), feeling the “breathing presence” (251) of the ghost even as he drives away, and even sensing a few days later that “a part of me was still back on the prairie with my father”
(255). (Inga similarly feels her father as a “presence” [186] around her.) Imagining other subjectivities cannot be separated from imagining their physical instantiation.

That the novel's resolutions of personal crisis are textually intercut with Erik's sessions with his patients again formally establishes the centrality of what Hustvedt calls psychoanalysis's “particular form of dialogue” (“Analyst” 234) – dialogue always occurring in tandem with a Merleau-Pontian conception of physical embodiment. Significantly, we read of a much younger Erik holding a brain in medical school and thinking “it was all here” (Sorrows 5) – the older Erik now knows that this isn't quite right, that “it” is all also and simultaneously out there, in the “Between.” Similarly, when Magda tells Erik that “the work of psychoanalysis can turn ghosts into ancestors” (296), she would have been more accurate had she prefaced her “psychoanalysis” with a neuro-. The positive character developments and grief-processing of Sorrows are all spurred by encounters between subjectivities rooted in physical bodies. This metafictionally enacts Hustvedt's own experience with her departed father. His passing has made itself felt in her flesh-and-blood body as fits of shaking, and she has come to terms with his death partly through physically typing out and textually recycling his real letters and diaries. These material processes have undergirded the transferences and counter-transferences of mind underlying the novel's genesis, plot, and higher-level conception of its author-reader/text-reader reality.

“Borders are important”: The Limits of Neuro-intersubjectivity

Sorrows' interrogation of the scope and nature of neuro-intersubjectivity reveals its promise, but also its limits and even dangers. Leading psychoanalyst Daniel Pick, while sympathetic
to the innovations around conceptualising the “two-way nature of the analytic process” (102), writes that compared to the “excessively withdrawn and silent style of the past,” the “let it all hang out’ alternative” is “equally dubious” (104). Against the edifying hopes outlined above, *Sorrows* thematises this dubiousness. Even as it dramatises and enacts neuro-psychoanalytic conceptions of transference and countertransference occurring in the “Between,” *Sorrows* critiques these processes, as both a form of social life, and an approach to literary creation.

Erik's own therapist, Magda, is clear with him that there are levels of intersubjectivity with a patient that should not be tolerated (*Sorrows* 138-140). We see first-hand why she is correct. Throughout the novel, committed and vulnerable intersubjective stances are rewarded, but *extreme* ones are not. Erik reports that Ms. L. – the most developed character amongst all his patients – “sometimes had a hard time separating the two of us” (87). In another session with her, he feels the pronoun “I” “slide between us” (110) and senses that she is uncovering “sadistic elements” (138) in him. Erik tries to transmit to Ms. L. that “borders are important” (155), and at the end of a session he tells her that a parting embrace “[isn’t a good idea” (156). When she tries to provoke rage in him, he tells her that “there were rules that governed our exchange, her behaviour and mine, and she was breaking them” (214). Ultimately, after Erik has denied her the levels of neuro-intersubjectivity she appears to crave – after he has refused to allow certain forms of transference – Ms. L. spits in Erik's face and storms out for good, and Erik is left with a lingering “fear” that “Ms. L. had picked up the odor of something I myself didn't understand” (235).

On the whole, I contest Carmen Birkle's analysis that in *Sorrows* “there is no
objective encounter between doctor and patient; there is only an exchange of subjective
points of view . . . [Erik]'s patients are never a separate entity and ultimately intermingle with
him, his own past, feelings, and desires” (209-210). Ms. L. is the most prominent of his
patients, the one the reader encounters the most – and with her, Erik determinedly maintains
an objective encounter, in pursuit of his own sanity. Other characters also conduct or
experience the danger of an over-mingling of subjectivities. For the compulsive, intrusive,
subjectivity-piercing photographer Jeffrey Lane, “photography is a form of thievery” (113).
When Erik finds out that a large and unflattering photograph of himself features as the
centre-piece of one of Lane's exhibits, he says, “it's hard to describe the loss I felt at that
moment. It was as if I had been robbed of something very dear to me” (257). Similarly, the
predatory journalist Linda Felhburger's attempts to uncover and expose the adulterous secrets
of Max, Inga's late husband, make Inga “feel polluted, no, not just polluted, frightened” (44).
To a lesser extent the same is true of Henry, Inga's new lover and author of a literary
biography of Max. Inga wonders if Henry is “sleeping with the widow” (150) in a way that is
“more about Max” (150); when after love-making Henry quotes a line from Max's work back
at Inga – “when he entered her body he was no longer in exile” (224) – she is “stunned,”
feeling as though she “had no value for [herself]” (225).

_Sorrows_ also thematises how neuro-intersubjectivity can be not only malicious, but
simply inadequate. The catharsis Hustvedt experienced in penning the novel might be an
idealised state of intersubjective creation, but it isn't guaranteed. Other characters seek a state
of contact with other minds by uncovering secret truths via the written word (another
metafictional instantiation of the novel's wider framing) – and almost all of them fail. Inga
reads her husband and her father's writing “to find them in the words,” but finds that “there's something missing, and I don't mean their bodies” (32). With both men, there is something “obtuse and unknowing” (32). Erik and Inga pursue the secret of what happened with their father and Lisa Odland through the whole book, but in the end, when they discover the truth, as Inga puts it, “it doesn't explain much about Pappa, does it?” (248). The contents of Max's letters to Edie turn out to be inconsequential, so that the bitter Linda rages, after months of effort, “that's the big scoop you strung me along with?” (290).

Playing into the novel's navigation of the limits of neuro-intersubjectivity is its theme of trauma. Sorrows has frequently been read via the discipline of trauma studies as a piece of “trauma fiction” (Donn 341), and trauma hovers over the novel, over its setting and characters. Trauma appears to pose a grave threat to any intersubjective exchange. Against what Hustvedt herself describes as the narrative-making drive of both (neuro-)psychoanalysis and literature, Erik remarks that “trauma isn't part of a story; it is outside story. It is what we refuse to make part of our story” (52). Erik refers to the (neurological) research “confirming what I had always felt was true in my patients”: their traumatic memories, unlike other memories, are “kept separate in the mind” (85). Katharina Donn argues that the novel “develops a literary epistemology which originates in the pathology of trauma” (341), and a key suggestion is that traumatic experiences cannot be properly integrated into our subjective accounts of being, and thus are stranded outside of any potential neuro-intersubjective exchange. “Traumatic memory arrives like a blast in the brain” (Sorrows 137), says Erik – a blast which is uniquely, painfully private.

The novel's reservations are again enacted metafictionally. If trauma “doesn't appear
in words, but in a roar of terror, sometimes with images” (Sorrows 85), then it automatically escapes any literary conception of neuropsychoanalytic intersubjectivity. (If it is outside words, how can it appear in a book?) Such escape isn’t limited to the traumatic experience, either. Hustvedt herself has said that “no-one can truly escape her or his subjectivity” (Living xi) – a view enacted by the fact that, for all its transferences of subjectivity, we never truly escape Erik's first-person viewpoint. This formal feature mimics how, at the authorial level, Hustvedt never really merges with the perspective of her father – her intersubjective experiences are intense, but they are brief and fleeting. Echoing through the novel is Erik's erstwhile patient Mr. T., who believes he is internally conversing with and “taking dictation from the dead” (94). To totally intersubjectively merge with another mind, it is suggested, is to cross the boundary into insanity. Transferences are part of being human, but so is maintaining a coherent self – whether writing, reading, or living off the page. We should recall from Shaking, Sorrows' “companion piece” (Hornung 69), that Hustvedt's mirror-touch synaesthesia causes a bleeding of subjective phenomenology resulting not in blissful union, but in uncomfortable levels of sensitivity. The same would apply if reading created a mental environment of totalising, mirror-touch immersion. If the shaking disorder which inspired Sorrows is some form of conversion disorder, it isn't pleasant – it causes Hustvedt confusion and an alienating sense of threateningly impotent neuro-introspection.

Marks has written that in Hustvedt's whole oeuvre, with her portrayal of intersubjectivity, as well as “relational, reciprocal, and constructive exchange,” there are “moments of alienation, overmixing, exploitation, and transgression” (212). This is certainly true in Sorrows. Ultimately, the novel dramatises – at the level of both content and form –
that neuro-intersubjective knowing, while crucially and centrally human, is only ever partial. The landscape of *Sorrows* reveals that we can connect with another consciousness, but never totally, and only briefly – and that to strive after such a condition is to invite disappointment or, at worst, derangement. Inga's description of Kierkegaardian approaches to identity (252-255) makes this point in an oblique fashion: “we're always looking for one person,” she paraphrases, “when there's more than one, several contentious voices in a single body . . . We have different selves over the course of a life, but even all at once” (253). To search too hard for secrets is to keep peeling away Kierkegaardian masks in a false quest for a final answer, as all selves are (as Inga says, quoting Kierkegaard directly) “enclosed in another, like parts in a Chinese puzzle box” (255). As Erik muses, the past and the people of our past “occupy the mental terrain within us,” but on that “old ground . . . shifting wraiths pass or speak in voices so low we can't hear what they are saying” (278).

*Sorrows* ends with a sort of overflowing of intersubjectivity that spans different eras and different lives (301-304) as “the boundary between inside and outside loosens, and there is no loneliness because there is no one to be lonely” (301). Erik's perspective merges with numerous subjective viewpoints, more or less every single one that the book has mentioned, once again invoking Kierkegaard, that philosopher of nested and intermingled viewpoints (302). This reverie, which closes the book, is triggered by watching the falling snow (301) – an echoing of the close of James Joyce's short story “The Dead,” where Gabriel Conroy stands at a window and we read that “his soul swooned slowly as he heard the snow falling faintly through the universe and faintly falling, like the descent of their last end, upon all the living and the dead” (168).
Joyce's relationship with psychoanalysis as a formal system is complicated and much-debated. However, his introduction of modernist techniques was intended precisely to mirror the complexities of the subconscious mind – that same sphere of psychology that neuropsychoanalysis is attempting to recover in the age of brain sciences. It is common within the criticism to assert that “neuronovelists are contemporary heirs to modernist experiments with interiority” (Tougaw, “The Blood” 174). Hustvedt's novel does indeed bring a neuropsychoanalytic perspective to bear upon the concept of interiority, and its closing reverie reveals a connected, intercommunicating world, a shared space occupied by all the living and the dead – but, as with “The Dead,” it is only a brief flash. It is no coincidence that the novel's two main subplots – the mystery of Lars's 1937 letter from Lisa, and Henry's more recent letters to Edie – are ones driven by explorations of occluded textual worlds. Metafictionally, Sorrows acts out its own explorations at the limits of intersubjective exchange. The close of the novel could be seen to enact a tension between two Modernist ideas: E. M. Forster's famous dictum “Only Connect” (iii), and Clarissa Dalloway's melancholy reference to the fundamental “solitude” of people, the “gulf” that exists, “even between husband and wife” (131).

“Two conscious people at once”: Neuro-psychoanalytic-fiction, Present and Future

In Hustvedt's The Blazing World (2014), one of the characters, in constructing her theory of selfhood and perception, mentions “an obscure novelist and essayist, Siri Hustvedt,” who in relation to the subject in hand is intellectually “a moving target” (255). Hustvedt's metafictional in-joke has more than a little truth to it. Her long essay “Delusions of
Certainty” proclaims loud and clear that it “interrogates certainty and trumpets doubt and ambiguity” (*Woman* 149), that it enacts Hustvedt's belief that “subtle thinking requires embracing ambiguity, admitting gaps in knowledge, and posing questions that do not have ready answers” (310) – a stance she attributes to Kierkegaard, who “was highly critical of every totalizing intellectual system and of science itself when it purported to explain everything” (279).

In part, *Sorrows* (and Hustvedt's) engagement with neuropsychoanalysis stems from precisely this urge to explore the adventurous, the daring, the dismissed. *Sorrows* is a crucial neurofictional text because it engages with the way neuroculture's ascendancy has mirrored the decline of the 20th century's other great psychological trend – psychoanalysis – and the way the tensions between these two systems reflect broader dichotomous dynamics at play throughout the present study. In the eyes of Hustvedt, who holds that all humanistic enterprises “can no longer afford to pretend that bodies are made entirely of words” (qtd. in Rippl 28), psychoanalysis's historically “virtually 'brainless’” (Bezerra 252) outlook endangers it. This endangerment is a worry, as psychoanalysis's “particular form of dialogue” (Hustvedt, “Analyst” 234) is worth saving – not least because it represents a natural ally to the literary enterprise (and can help generate works of fiction as valuable as *Sorrows*). If Françoise Davoine is right that “the old storytelling and more recent psychoanalysis” are “the two vectors of psychotherapy” (107), then *Sorrows* attempts to rescue the latter by integrating it partly with the former, and re-introducing to *both* the focus on the material brain which so occupied Freud himself for the first twenty years of his career.

*Sorrows* enacts the scope and openness of neuropsychoanalysis to interrogate that
abiding theme of her career, intersubjectivity. The “interdiscipline” (Solms and Turnbull 139) allows her to illustrate and dramatise a conception of intermingling minds that is Buberian in its phenomenological reality but Merleau-Pontian in its focus on physical groundedness. The picture of neuro-intersubjectivity that emerges is ambitious and bold, yet honest about the ultimate singularity of mind, a singularity whose implications all neurofiction strives to process. Hustvedt rejects a neuroscientific eliminativism which devalues subjectivity, but her model of both writing and reading starts and ends in the body. At the highest level, this model drives Sorrows' quite bold move of equating a neuropsychoanalytic understanding of intersubjectivity with a vision of Hustvedt's literary craft. “Being two conscious people at once” (Hustvedt, Woman 310) via literature is something that takes place via both the writer and the reader's entire physiology. “Books are made,” in Hustvedt's view, “between the words and spaces left by the writer on the page and the reader who reinvents them through her own embodied reality” (Living 139). Even a great work like Madame Bovary is “dead and meaningless . . . until it is absorbed by a living, breathing human being” (Living 134). Embodiment is always central. Sorrows thematises but also enacts – at the stages of genesis, production, and reader reception – the physical ways in which networks of subjectivities and narratives engage in a constant transference and countertransference. Only in such numerous and complex interrelations, Sorrows posits, can the truth of human consciousness (and its relationship to both writing and reading) reside.

Fruitful future work might be to examine how these themes and concerns manifest in Hustvedt's later texts. As mentioned, Sorrows was written and published during a time when Hustvedt was first becoming interested in neuropsychoanalysis. However, over the past
seven years she has been “in psychoanalytically based psychotherapy twice a week” (Woman 118), has vastly expanded her neuroscientific learning, and has remained deeply in touch with attempts to marry the two disciplines (226). Psychoanalysis remains a fascinating field for the mission it shares with neurofiction to preserve the centrality, the importance, even the sacredness of the subjective dimension of life. Neuropsychoanalysis remains a fascinating field for the way it seeks to do the very same, while accepting the full implications of modern brain research. Sorrows might be the first work of neuro-psychoanalytic-fiction, but one suspects it won't be the last.

Neurofiction is a genre that brings into focus what Thomas Nagel – that gadfly of neuro-reductionists and neuro-determinists everywhere – has called “mortal questions”: questions “about life: about its end, its meaning, its value, and about the metaphysics of consciousness” (*Mortal* ix). As I hope my overarching framing has made clear, these are texts that wrestle with a pessimistic biologism that threatens to diminish (or even annihilate) the role and value of human consciousness, and question whether minds can meaningfully perceive themselves or their analogs. Nagel's suggestion, made in 1979, that dry-minded analytic philosophers have tended to avoid such issues because “large, relevant questions too easily evoke large, wet answers” (ix), almost predicts the literary genre which emerged a decade and a half later. A pervasive and burgeoning neuroculture forces upon its artistic products the largest of questions – and what 'wetter' form could an answer take than that of a novel, with all its invention and nuance and contradiction?

A self-consciously earnest adoption of somewhat grand themes is one reason other neurofiction scholars have categorised the genre as a form of post-postmodern writing (Burn, *Jonathan* 19-26). For the most part, these works are sincere in their themes – and their focus on lived phenomenology, rather than anything approaching airy linguistic gamesmanship, sees them share more with literary modernism than what followed. That said, these texts remain works of *fiction*, not science – and they bear the ambiguous and exploratory mood of the arts, not the one-dimensional conviction of empiricism. To reiterate my introduction, the most sensitive scholars of neurofiction have acknowledged that the genre has “no onus to be
accurate, but can be provocative, philosophical, aesthetic, political” (Tougaw, “Re: Neuroscience”). Neurofiction implicitly understands that “unlike a scientific or philosophical argument, an artwork is allowed to be a locus of contradictions where opposites may coincide” (Vidal and Ortega, “Approaching” 23). Oblivion is a thought experiment before it is a statement of fact; The Echo Maker celebrates Emersonian connectedness even as it leaves the door open to cosmic misanthropy; Saturday is shot through with paradoxes regarding the value of the imagination; The Sorrows of an American only partly rehabilitates Freudian ideas for the neurocultural era. In asking the largest questions, Nagel considers it wise to trust “pluralistic discord over systematic harmony” (x). Neurofiction concurs. Lacking answers, neurofiction authors revel in restating the questions, again and again, more sharply and more provocatively. This inquisitive, searching stance is one of the things which gives the genre its consistent shape.

By engaging head-on with a scientific discipline at a time when Two Cultures debates have emerged with renewed force – and when there is manifest a perceived “shifting balance of symbolic power between the disciplines” (Kelleter 184), in favour of the hard sciences – neurofiction engages with intellectual and institutional currents of immediate relevance. As a genre, neurofiction is deeply concerned with epistemology. These texts map a parallel between the Two Cultures divide and the explanatory gap at the heart of the Hard Problem – in doing so, they interrogate the nature of humanistic or literary insight and the nature of its emergence out of three pounds of grey matter. Like generations of authors before them, authors of modern neurofiction are fascinated and compelled by the astonishing developments made by the brain science of their era. They resist strongly social
constructivist views of human nature, accepting that *Homo sapiens'* minds “share a rich and robust *universal structure*” (Slingerland 303). Equally, they are deeply dissatisfied by the reductionist accounts of human life advanced by much popular science. As in neurofiction's “closest living relative,” “the 'brain memoir'” (Tougaw, “Touching” 339), there is in most neurofiction a basic unwillingness (or inability) to *feel* “the unbearable lightness of being no-one” (Žižek, *Parallax* 145) suggested by much modern neuroscience. Neurofiction displays, upholds, and lauds that essential part of the human experience which is the first fuel of the literary impulse. Even the neurohorror of Wallace's *Oblivion* exists within the oeuvre of an author searching keenly – within *The Pale King* and elsewhere – for an escape from Nature's Nightmare. Alongside neurofiction's general acceptance of neurobiological evidence runs a staunch defence of the experiencing, witnessing, conscious mind – a defence that in its insistence on the irreducibility of subjective life borders on the mystical or pseudo-religious, dramatising how the “stubborn persistence of the idea of a soul” (Burn, “Mapping” 47) dovetails with the difficulty of differentiating between “literary belief and religious belief” (Wood, *Broken* xxii).

Neurofiction accepts the materiality of mind – while stressing that living in a brain is an entirely different thing to scanning a brain. Call it the mind, call it the soul, call it God; *something* eludes the fMRI scanner. How to believe in this *something*, without contradicting or eluding the science whose real-world insights they can't or won't deny or ignore, is perhaps the central question neurofiction seeks to continuously restate. By vividly and vexedly enacting that element of human phenomenology which escapes reductionism, neurofiction in turn stakes out a place for the ongoing uniqueness and special power of the
literary enterprise, as it relates to understanding the experience of human life.

The Future of Neurofiction Study

In closing, it seems appropriate to discuss what the present study has been forced to leave out – those areas of neurofiction criticism that are untouched here and remain wide open for future work. Much falls within this category. Neurofiction is a young genre, and criticism of the genre is younger still.

For one – following the bold example of Joseph Tabbi, who draws on systems theory and cybernetics in tying “cognitive realism” (Cognitive xxv) to the “distributed cognitive environment” (83) that is the modern media ecology – neurofiction offers a great deal of scope for interdisciplinary research. Neurofiction is in and of itself interdisciplinary, and it stands to reason that studies couched within other fields and approaches – the medical humanities; the philosophy of science; the sociology of scientific knowledge – could be very fruitful.

Changes in disciplinary lens aside, many literary authors are in need of further attention. The works of fiction I have examined here were published within an eleven-year span (1997-2008) that we might call neurofiction's formative phase. At the time of writing, there is already a subsequent decade of literary production to be explored, and there are countless authors of both harder and softer forms of neurofiction hitherto neglected in the criticism. In April of 2017, Cormac McCarthy published the first nonfiction piece of his career, exploring the origins of human language and touching on how “facts about the world are in themselves capable of shaping the brain” (“Kekulé”). Studying McCarthy's oeuvre in
light of this revealed interest in neurofictional topics is just one example of a gap in the criticism. Amongst the other authors on whom the scholarship is either lacking or nonexistent – all of whom, at times, I considered as subjects for a chapter – are (in the US) Jennifer Egan, Nicole Krauss, George Saunders, Jeffery Eugenides, and Rivka Galchen, and (in the UK) Will Self, Edward St. Aubyn, A. S. Byatt, and Tom McCarthy.

Specific authors aside, larger themes or topics that await further study – and all of which I, again, at one point attempted to fit into the present study – include what Jenell Johnson has called “the ethics of knowing in neuroscience” (215). Perhaps a topic falling within disability studies, these ethics relate to the fact that (as with the famous cases of Phineas Gage and Henry Molaison) most of what we know about the healthy brain we know from the study of the sick or injured brain. The knowledge base of neuroscience is built on damaged brains, on the fact that “one can only see (and thus know) the soul through the deficits of its particulars” (216). Ian Hacking has expressed unease about this same fact (Mad 38-39). Johnson quotes Tom Shakespeare's biting description of Oliver Sacks as “the man who mistook his patients for a literary career” (qtd. in 216).

A related though subtler ethical issue – thematised in The Echo Maker – has to do with the metaphorisation of mental illnesses. Lustig and Peacock discuss the ethical issues that arise when a given syndrome – such as Capgras, in The Echo Maker – “is employed as a metaphor for some other condition” (10) – such as a more general human sense of how selfhood is constructed, or how humans relate to the biosphere. Citing Susan Sontag's Illness as Metaphor (1978), Lustig and Peacock remind us of Sontag's argument that “the most truthful way of regarding illness – and the healthiest way of being ill – is one most purified
of, most resistant to, metaphoric thinking” (10). Lisetta Lovett has pointed out how certain authors appear to sidestep this ethical dilemma by simply “inventing conditions” which don't carry the ethical baggage of real-world sufferers – as in the genetic affliction “Chrono-Impairment” (14) of Audrey Niffenegger's *The Time Traveler's Wife* (2003), or the “abulia” (32) of Benjamin Kunkel's *Indecision* (2005). For works which make use of real-life conditions, however, this ethical question is a valid one. Certainly with some of the characters I examine here – Mark in *The Echo Maker*, Baxter in *Saturday* – there is a note of exploitation to how institutional medicine interacts with the neurologically damaged. My sense is that neurofiction will always struggle to entirely avoid a sense of artistic complicity here.

Neurofiction's use of neuropsychopathology as grist for the literary mill is an ethical issue which dovetails with the genre's wider political anxieties. “The feedback loop between science, empire and capital” represents “history's chief engine for the past 500 years” (Harari 306), and just as the foundations of botany, anthropology and zoology are impossible to untangle from colonial projects, modern neuroscience evolved in tandem with the morally dubious doctrines of Reaganite/Thatcherite economics. Rose and Rose have highlighted how “neuroscience's methodological focus on the individual brain is in accord with that of neoliberalism on the individual rather than the collective” (99). Ron Roberts' Marxist critique laments how neuroscience has moved to the fore of “'Big Science', in which [. . .] scientific progress becomes synonymous with the advance of corporate and capitalist aspirations” (27). On a societal level, meanwhile, the inherent fatalisms of hard reductionism have a dispiritingly apolitical air – Patricia Waugh discusses the depoliticizing atmosphere in which
“the teenager at odds with the world now learns the mantra 'it's not me, but my ADHD'; the distinguished professor struggling with constant performance monitoring now prefers to blame 'chronic fatigue syndrome' rather than neo-corporate late capitalism” (“Naturalistic” 18). That mental health (the frame through which most of the public encounters neuroculture) is a deeply political issue has been established since Foucault's influential work and receives an even-handed update from Andrew Solomon (361-400). These concerns bleed into neurofiction. In Jonathan Franzen's *The Corrections* (2001), Chip declares that “the very definition of 'mental health' is the ability to participate in the consumer economy” (31).

These ideas and suspicions and fears run throughout neurofiction. A properly political study of neurofiction has yet to be undertaken, but would have a wealth of material to draw upon.

Arthur Machen – a late Victorian neurofiction author who escapes the attentions of Shuttleworth and Stiles – penned a short story in which a gentleman scientist becomes so obsessed with bridging “the fathomless abyss that separates the world of consciousness from the sphere of matter” (15) that he is driven to extract from his wife “that essence which men call the soul” (27), ending her life. The fears expressed in Machen's story persist in modern neurofiction, where there is a pervasive unease regarding the inherent amorality and potential destructiveness of the (neuro)scientific research program that is its focus. George Saunders's “Escape from Spiderhead” is a tragicomic story which features pharmaceutical researchers wielding the power of total neural manipulation against incarcerated subjects at the behest of some unseen committee. When the researchers discover a psycho-pharmaceutical drug which upon being administered drives a subject to such despair that within a few minutes she kills herself using a chair leg, the lead researcher describes the event as “some mind-blowing new
data” (72). Saunders's story encapsulates a theme running throughout neurofiction: the capacity for modern neuroscience to follow the example of its shameful ancestor phrenology and facilitate the exploitative, the inhuman. Neurofiction frequently updates Machen's Victorian trope of the mad scientist in the form of the coldly dispassionate or inhuman scientist. In Hustvedt's Sorrows, bemoaning the “the paperwork [and] the commands” of corporate pharmacology, Erik laments the way that “patients are now officially referred to as customers” (202). Neuroethics has emerged as “a discipline aimed at understanding, anticipating and examining the ethical, social and legal consequences of neuroscientific knowledge and its applications” (Ortega and Vidal, “Approaching” 9) – precisely because there is a temptation for scientific disciplines, so often tied to corporate profit and professional ambition, to avoid undertaking this task themselves. We might think of neurofiction as conducting a version of neuroethics whose fictionality gives it a special sort of flexibility, and examine the genre on these terms.

Neurofiction's engagement with the link between models of mind and ethics points to another, perhaps more offbeat area of potential research: an exploration of the link between neurofiction and Buddhism. A topic I initially and naively tried to crowbar into the present study, this partly ties into the far broader theme of neurofiction's relationship to various forms of mysticism, or pseudo-religiosity. Buddhism is the only religious system whose intellectual stock has risen along with the emergence of modern neuroculture – evidenced by a steady stream of books linking the two realms. As John Tresch explores, “the understanding and experience of the self” in the West has been influenced by the convergent trends of “the neurosciences and . . . a fascination with Buddhist cosmology, practice,
psychology, ethics and iconography that has grown in cultural salience since the mid-
twentieth century” (50). The Buddhist-derived practice of mindfulness is almost as
pervasive within modern culture as pop neuroscience. There is another study waiting to be
written on how the convergence between this ancient religion and this oh-so-new science
manifests in the Anglo-American novel, with special attention to be paid to the work of (in
the UK) Geoff Dyer and Tim Parks, and (in the US) Saunders and Charles Johnson.

A final remark, regarding possible avenues of future study. It may be that the future
of neurofiction – already a young, fairly vague, and somewhat contested genre – sees it
merge more completely with the broader field of science fiction. Amongst the most dominant
scientific concepts of our era are the intersecting trends of artificial intelligence and
transhumanism. Transhumanists seek – in the words of futurist and bestselling author Ray
Kurzweil – to “transcend all of the limitations of our biology” (qtd. in Vance) by “reverse
engineer[ing] the brain” (Barrat 143) and uploading consciousness to the cloud.

Transhumanism is a classic concern of sci-fi, and its otherworldly visions already find their
way into neurofiction. Neuroscience is also at the very heart of transhumanism's more
academic cousin, the research project of artificial intelligence. Neuroscience drives many of
AI's recent successes, and across the field, researchers are moving towards “whole-brain
emulation” (Barrat 206) as the most promising route to advancement. Again, AI is a central
theme of modern sci-fi. My suspicion is that Paul Giles' belief that Wallace's works “reflect a
condition of confusion where the human sensibility is left uncertain about its epistemological
status in an environment where cyborgs and machines are becoming ever more powerful”
(328) will come to apply to all neurofiction, obsessed as the genre is by the distinctive
features of human ontology and consciousness. The pessimistic biologism which is a central theme of neurofiction would seem to convert neatly into the dystopianism so common to science fiction. A minor character in Hustvedt's *The Blazing World* refers blithely to “this postmodern, soon-to-be cyborgian age” (44). This age, should it arrive, may turn neurofiction into a genre which in thematic terms is more or less indistinguishable from science fiction. Indeed, one could already class Powers' neurofictional *Galatea 2.2* as sci-fi, and certain recent works of sci-fi – Vernor Vinge's *Rainbows End* (2006), for example – as neurofiction. Investigating the current and future nature of this porous genre border constitutes yet another fascinating research avenue.

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There is, then, much work to be done. Neurofiction is an ambitious genre, whose main texts are multivalent, rich, and internally conflicted. My hope is that the present study joins other recent criticism in mapping out profitable ways to conceptualise and understand neurofiction, and in drawing out some of the genre's deepest animating themes and ideas. Such steps will, I hope, provide a useful basis for future study, a framework within which to approach the genre in systematic and fruitful ways.

Edward St. Aubyn's *A Clue to the Exit* (2000) is narrated by a jaded writer named Charlie who has been given six months to live. In a last-ditch attempt to write something meaningful rather than another schlocky screenplay, Charlie begins to pen a rather dud novella, which dramatises the frustrating fact that “consciousness remains inexplicable
despite being the only thing that we know directly” (109). When Charlie pitches the idea of the novella to his agent, the agent responds with a sardonic quip: “You gonna put synapses in a novel?” (18). The agent's skepticism is understandable. Neurofiction asks questions about the most complicated object in the known universe – the brain – and the strange, mysterious, elusive marvel it somehow conjures: consciousness. But the efforts of Charlie and his real-world counterparts are to be applauded. The human episteme looks set to move into strange waters in coming decades, and neuroculture may well be here to stay. As human beings living through the subjective viewpoint that escapes external observation and from which all literary creation arises, we will continue to need neurofiction, as well as a proper understanding of it. We will need to keep putting synapses in novels, and keep giving those novels proper consideration.
Notes

1. See Sally Shuttleworth; Richardson, British Romanticism; Dames, “Network”; and Anne Stiles.

2. Tourette’s syndrome, for example, discovered and named by Jean-Martin Charcot in the 1880s, is at the centre of Jonathan Lethem's Motherless Brooklyn (1999). This same period also witnessed the rise of Emil Kraepelin, “the father of psychobiology” (Solomon 326), whose work would feed into the establishment of the iconic mental disorder, schizophrenia. The condition affects the protagonist of John Wray's Lowboy (2009), a sixteen-year-old schizophrenic who abruptly stops taking his medication.

3. Brain-scanning technology has moved through computerised axial tomography (CAT scanning), followed by positron emission tomography (PET) and then, most significantly, magnetic resonance imaging (MRI), all in the 1970s.

4. From the Latin quālis, “of what sort,” qualia is a term used to refer to the totality of the subjective phenomena which seems particularly impervious to objective explanation. The Oxford Companion to the Mind offers an excellent definition: “Examples of qualia are the smell of freshly ground coffee or the taste of pineapple; such experiences have a distinctive phenomenological character which we have all experienced but which, it seems, is very difficult to describe” (qtd. in Lodge, Consciousness 8).

5. For another, somewhat celebratory overview, see Francisco Mora; for a useful, more historical and more critical view, see Stephen T. Casper.
6. This “cerebralizing transformation of human subjectivity” (Meloni 104) has been characterized in other terms, as relating to “biological citizenship” (Rose and Novas 439), “somatic individuality” (Rose, Politics 109), “bioidentity” (Ortega, Corporeality 74), and the formation of the “cerebral subject” (Ortega and Vidal, “Mapping” 255). Ortega places this within the context of a widespread “cerebral self-help” (31) movement (spurred by discoveries relating to the brain's so-called plasticity), which has always been a fellow traveller of the modern brain sciences (Ortega, “Toward”).

7. One might even be tempted to make the case that neuroculture represents a scientific revolution on Thomas Kuhn's famous terms, with previous models of consciousness (most obviously Freudianism) having been so completely overwritten that the old taxonomy is “literally unintelligible to [the] new-wave thinkers” (Hacking, Mad 72-73) of neuroculture. Whether an Oedipus complex can even co-exist in the same conceptual/lexical universe as the misfiring of the amygdala is a question taken up by Siri Hustvedt in Chapter 4.

8. The European Human Brain Project (HBP) is a massive, ten-year research project involving a hundred institutions across Europe (and costing somewhere in the region of €1.19 million). Across the Atlantic, the BRAIN Initiative (started by the Obama administration) is slated to run until 2025, and is described by the New York Times as “a concerted effort to advance the knowledge of the brain’s billions of neurons and gain greater insights into perception, actions, and, ultimately, consciousness” (Markoff).

9. To give a few examples, see works by Luke Dittrich (on “the most studied individual in the history of neuroscience” [8]), or Paul Kalanithi's hugely popular posthumous memoir, or Adrian Owen's study of the ontological “gray zone” (4) between vegetative and inertly
conscious states.

10. As Andrew Gaedtke puts it, surveying the post-1990 period, “One of the most vital developments in contemporary British literature has been its ambitious engagement with the history of science. A. S. Byatt, John Banville, Pat Barker, David Mitchell, Kazuo Ishiguro, Christopher Priest, Tom McCarthy, and others have recently turned their narrative attention toward the cultures of science and technology” (“Cognitive” 184). Within a US context, Jay Clayton has explored what he calls a “veritable explosion” within American writing of the last two decades of “fictional explorations of scientific issues” (808).

11. Most prominently, the works of bestselling authors such as Daniel Dennett, Steven Pinker, Richard Dawkins, David Sloan Wilson, Antonio Damasio, Gerald Edelman, and Tor Nørretranders.


13. Gray's *Straw Dogs* is an aphoristic work, referencing Arthur Schopenhauer and many others, and containing statements such as “humans think they are free, conscious beings, when in truth they are deluded animals” (45); “no degree of self-awareness can make us self-transparent” (69); and humankind “seems fated to wreck the balance of life on Earth – and thereby to be the agent of its own destruction” (17).

15. Tougaw makes the point that “the idea that neuroscience is a monolithic practice dominated by a reductionist and determinist materialism is a misleading generalization: a range of materialisms characterize theory and practice in neuroscience” (“Touching” 339). True enough, but it is the *general* picture and *general* conclusions, as they have translated into a *popular* setting, that I am interested in here.

16. As Christopher Potter describes Libet's experiments,

the subject, wired up to an EEG, is asked to move a hand at any moment of her choosing... Shockingly, the first measurement – indicating the brain's readiness to move the hand – comes about a third of a second before the subject's conscious intention to move her hand... There seems to be no alternative but to accept that the brain has already decided how the body will respond before any conscious decision has been made...

   The Libet test shows us how consciousness might exist with no power to act on the brain. Consciousness hovers like a cloud about us, telling us stories after the fact, to justify what the world and the body have already worked out together. Consciousness hums the self into existence. (133-134)

Despite their influence, Libet's experiments and conclusions have been the subject of much debate and criticism over the past decades.

17. This coinage comes from C. P. Snow's influential 1959 vision of 'two cultures', featuring (to quote Snow) “literary intellectuals at one pole – at the other scientists, and as the most representative, the physical scientists” (4). What evolved into a clash between Snow and the literary critic F. R. Leavis was something of a rerun of a similar clash, nearly a
century earlier, between Matthew Arnold and T. H. Huxley.

18. For a concise overview of cognitive literary studies, see Lisa Zunshine (“Introduction”). For a much wider picture, see the entire edited collection (The Oxford Handbook of Cognitive Literary Studies), of which her short essay is the introduction.

19. See Keith Parsons for a good overview.

20. To give one example, see Midgley's criticisms of Dawkins' “selfish gene” metaphor (The Solitary Self) – a metaphor with a powerful influence on the pessimistic biologism that is a key theme of neurofiction.

21. For a penetrating criticism of literary Darwinism, see Jonathan Kramnick. For a more general and critical analysis of cognitive literary studies, see Kelleter.

22. McClure surveys a range of what he calls “postsecular” (3) works of fiction, arguing (via a somewhat elastic definition of religion) that these texts “affirm the urgent need for a turn toward the religious even as they reject (in most instances) the familiar dream of full return to an authoritative faith” (6). Postsecular fiction, in McClure's reading, shows “a strong but selective disenchantment with secular values and modes of being and a determination to invent alternatives” (7). Hungerford, meanwhile, refers to “[Matthew] Arnold’s mystification of literary judgment” (covered at some length in chapter 3 of the present study) as the “seed” (xvii) of a trend in which various authors' “literary beliefs are ultimately best understood as a species of religious thought, and their literary practice as a species of religious practice” (xvi). In Hungerford's reading, these authors ascribe transcendent value to the formal features of language, even as those features remain devoid of transcendent meaning. Significantly for the present study, Hungerford references that
authors are partly driven to “use language as a religious form to salvage what they see as a threatened literary authority” (xix).

23. Indeed, today's most outspoken public atheists are not those known for their literary sensitivity. Richard Dawkins has said that “I read novels for entertainment . . . I have never quite understood . . . why you would read fiction to understand the human condition” (“Richard”). Similarly regarding literature as a fundamentally utilitarian device for generating cognitive pleasure, Steven Pinker has expressed befuddled indignation at how, in the work of Virginia Woolf and other modernists, we witness “events presented out of order, baffling characters and causal sequences, subjective and disjointed narration, and difficult prose” (410).


25. In this and other senses, we might read neurofiction as I analyse it here as in a lineage with existentialist fiction. Sarah Bakewell alights on how the suggestion that “we amount to a mass of irrational but statistically predictable responses, veiled by the mere illusion of a conscious, governing mind” (318), offers a challenge to the existentialist impulse to “constantly repeat the questions about freedom and being that we constantly try to forget” (319). Another thesis waits to be written on how Jean-Paul Sartre might have reframed his belief that *existence precedes essence* for the era of the fMRI.

26. The narrative of *Thinks...* is dominated by a debate between a cognitive scientist and a
novelist (also lovers) on the nature of consciousness; the former declaring that “you’re a machine that's been programmed by culture not to recognise that it's a machine” (101), the latter defending “the intangible invisible essential self” (62).

27. Shuttleworth studies the influence of Victorian psychology and burgeoning materialism on the work of Charlotte Brontë. For Richardson, we see that various forms of “neural Romanticism” (Neural 1) were fascinating to, and influenced the work of, Samuel Coleridge, William Wordsworth, John Keats, and Jane Austen. Dames examines the influence of early Victorian neurology on the work of George Eliot, Wilkie Collins, and others. Stiles explores how various authors of the late Victorian period might all be considered neuronovelists avant la lettre.

28. Many of the bestselling mental illness memoirs of the new millennium devote time to reflections upon materialist theories of mind. Andrew Solomon encounters from multiple angles the brute fact that “everything that happens in the brain has chemical manifestations and sources . . . the boundaries of what makes us ourselves are blurry” (21). Elyn R. Saks's memoir of the “brain disease” (168) schizophrenia sees the high-achieving Saks wonder “was my brain the same thing as my mind? Could I hang onto the one while conceding that there was a big flaw in the other?” (183-184). Susannah Cahalan's Brain on Fire (2012) (a memoir of a rare auto-immune disease, anti-NMDA receptor encephalitis) is packed with neurological information. Scott Stossell states “to say that my anxiety is reducible to the ions in my amygdala is as limiting as saying that my personality or soul is reducible to the molecules that make up my brain cells” (198).

29. Wallace's struggles with the false satisfactions of postmodern irony and his association
with a literary New Sincerity are well documented (see Adam Kelly). Joseph Dewey might overstate the case a little, but he is right in essence when he writes that “few writers in the post-Pynchon era have demonstrated as well a command of the elements of traditional realism” (4) as Powers, whose first great influence was Thomas Hardy. Hustvedt – whose own first literary love (and dissertation topic) was *David Copperfield* – has declared herself “intellectually and emotionally dissatisfied with the airy postmodern subjects that seem never to put their feet on the ground” (“Borderlands” 118), a stance reflected in her work. As I cover in Chapter 3, McEwan's personal and literary dissatisfactions with anyone resembling what one of his protagonists calls “a postmodern . . . a blank-slater, a strong social constructivist” (*Solar* 155) run deep.

30. In an oft-quoted remark, Wallace declared in 1993 that “fiction's about what it is to be a fucking human being” (qtd. in Burn, *Conversations* 26). Powers told *The Paris Review* in 2003 that “I've always believed a book functions best when it leaves a person more capable of living in the world” (“The Art of Fiction”). Hustvedt has written that the great books are those that are “urgent, life-changing, the ones that crack open the reader’s skull and heart” (*Hustvedt Living* 63). McEwan's Iris Murdoch-inspired, Matthew Arnold-esque vision for the novel has a “clear moral focus” (Malcolm 15).

31. Burn has explored how, even though “neuroscientific explanations of behaviour form a much more prominent part of the worldview of the post-postmodern novelist” (*Jonathan* 25), they are present for American authors of the post-war period such as Don DeLillo and Joseph McElroy. In the UK, the same can be said for authors such as Aldous Huxley and J. G. Ballard (the latter of whom was an avid reader of psychiatric journals, and whose work often
contains psychiatrist protagonists).

32. Thomas Pynchon and others were deeply formative influences for Wallace, whose whole oeuvre can be viewed through the lens of his simultaneous entanglement with and argument against the postmodern literary aesthetic. Powers is also heir to the postmodern tradition, and is explicit about respecting its influence (see Dewey). Hustvedt's metafictional debut novel *The Blindfold* (1992) was lauded by Wallace himself as “a clear bright sign” that the “postmodern tradition” is “far from exhausted” (qtd. in Castle), and the ongoing narrative fragmentation and intellectual density of her later works clearly owe something to that tradition. While literary postmodernism was not such a domineering force in British letters, McEwan still began writing in the wake of John Fowles' influential *The French Lieutenant's Woman* (1969) – a layered work which triggered “a powerful debate about fictiveness . . . throughout British culture at the dawn of the Seventies” (Bradbury 391) – and the formal structure of works like *Atonement* bears the marks of Fowles' influence.

33. For example, with the occasional exception (see Koch), the popular purveyors of neuroscience tend to sidestep or dilute the pessimistic implications of the insights described by their discipline. Presumably this is partly because nihilistic meaninglessness doesn't go down so well with market-conscious editorial departments or the book-consumers they are selling to. (Ligotti writes that “optimism has always been an undeclared policy of human culture”; hence “at any given time there are more cannibals than philosophical pessimists” [64].) Neurofictions, however, even as they are fascinated by the science, are able to enact a more honest, conflicted analysis. In this sense, they keep a clear-eyed, open-minded check on the more market-driven philosophical parameters of the popular science genre.
34. Wallace began suffering from depression as an adolescent, taking a leave of absence during his sophomore year of college following his first major episode (Max 23). At this time it was clear to him that he was “beginning to understand . . . that he had a biological condition” (34) – one rooted in the human brain. Two years later, Wallace was institutionalised, and switched his medication to Nardil. In 1988, he found himself “home for the fourth time after a breakdown . . . at twenty-six” (116). He attempted suicide, and underwent six courses of electro-convulsive therapy (117). Wallace would remain on Nardil for the next two decades, “read[ing] widely about other antidepressants” (297) throughout the rest of his life, until another attempt to quit the drug would trigger his 2008 suicide.

35. Indeed, the influence of MacLean's theories – and a more general (albeit basic) appreciation of evolved brain anatomy – is evident in some of the nonfiction pieces Wallace published in the years he was writing *Infinite Jest* (1996). In 1991's “Derivative Sport in Tornado Alley” Wallace refers to a location “somewhere down in the lizardy part of my brain” (*Supposedly* 8). In 1996's “A Supposedly Fun Thing I'll Never Do Again”, walking amidst the rocking of a cruise ship is aided by “some evolutionary retrograde reptile-brain part of the CNS [central nervous system]” (*Supposedly* 283).

36. In 1996, the year Wallace published *Infinite Jest*, he cited James’ *Varieties of Religious Experience* as one of the works which have “rung [his] cherries” (qtd. in Burn, *Conversations* 62). In the novel itself, as Evans has noted, James' opus is the only book which makes an appearance: cat-baiting Randy Lenz stashes his cocaine in a hollowed-out large-print version of James’ Gifford Lectures, lectures which form the backbone of *Varieties of Religious Experience*. 
37. Expansively examining the “false or fuzzy . . . neurology” underpinning the erroneous claim that lobsters feel no pain, Wallace writes: “The human cerebral cortex is the brain-part that deals with higher faculties like reason, metaphysical self awareness, language, etc. Pain reception is known to be part of a much older and more primitive system of nociceptors and prostaglandins that are managed by the brain stem and thalamus . . . And lobsters do have nociceptors, as well as invertebrate versions of the prostaglandins and major neurotransmitters via which our own brains register pain. Lobsters do not, on the other hand, appear to have the equipment for making or absorbing natural opioids like endorphins and enkephalins, which are what more advanced nervous systems use to try to handle intense pain” (Consider 245-250).

38. By “personal library,” I refer to the 321 books which were part of the Wallace archive acquired by The Harry Ransom Center at The University of Texas at Austin two years after the author's death.

39. On page 144 of his copy of The User Illusion, above a paragraph outlining the incredible complexity of the neuronal network, Wallace has circled the page number and written “brain” in capital letters. Elsewhere he is clearly fascinated by discussions of “cerebral energy metabolism” (119), and makes handwritten notes regarding the thalamus (197) and the processing power of the brain (202).

40. The User Illusion is partly founded on the famous and controversial experiments by Benjamin Libet and other psychologists commonly invoked as a neuroscientific argument against free will (see my introduction) – alongside this section, Wallace drew a big asterisk (216-220). As Nørretranders writes, in one of the last pages of his book Wallace appears to
have read: “consciousness can never be in charge” (222).

41. *Carrie* ends, incidentally, with a small town being decimated by the titular character's apocalyptic telekinetic powers; powers which originate in “certain unusual formations in the cerebrum and cerebellum of the brain” (296).

42. Masturbation fantasies are mentioned once again later in the story, when we hear of Laleman's fantasy of “himself, shirtless and adorned with warpaint, standing with his boot on the chest of various supine men and howling upward at what lay outside the fantasy’s frame but was probably the moon” (64). They occur throughout *Oblivion* – possibly, I would argue, as the ultimate representation of the most private corners of consciousness.

43. Wallace makes this connection explicit in his last, unfinished novel, *The Pale King*, when a pontificating character describes “the way modern advertising and marketing seduce the individual by flattering all the little psychic delusions with which we deflect the horror of personal smallness and transience, enabling the delusion that the individual is the center of the universe, the most important thing” (146).

44. Wallace has engaged with Pinker's work on a number of occasions: see Boswell, “Constant” 166-167.

45. As Wallace himself would come to realize toward the end of his life – see Krzysztof Piekarski, especially 32-35 and 269-283 – far more useful than all the thinking and ruminating may well be one of Neal's failed attempts at improving his lot: Buddhist meditation.

46. See Lee Konstantinou, Marc Oxoby, and Annie McClanahan.

47. Like Schmidt – but really, says *Oblivion*, like *everyone* – Atwater harbours “several
lacunae of blind posts in [his] self-concept” (243). Significantly, the scenarios in which Wallace chooses to display examples of such are strikingly similar. While Schmidt is “on Hold on the phone,” he sometimes “put[s] his finger inside his mouth and hold[s] it there for no good reason he can ever ascertain” (15). While Atwater is on the phone, he “sometimes unconsciously [makes] a waist level fist and [moves] it up and down” (239) while talking.

48. This motto is a direct 1937 quotation from the famous pessimist philosopher Emil Cioran (102). It bears mentioning that, as well as appearing in the title of this chapter, the phrase is taken up in the title of Greg Carlisle's *Nature's Nightmare: Analyzing David Foster Wallace's Oblivion* (2013).

49. By the late nineties, Buddhism and Eastern religious practices had been “a growing interest of Wallace's for many years” (Max 257). In the spring of 2001, Wallace even attended a two-week meditation retreat in France, although as Max writes, “he found that writing about mindlessness and achieving it for oneself were two different things; he left early, blaming the food” (262).

50. Weber is a composite character, a sort of combined characterisation of Powers' wide-ranging research, and also a representative of the whole phenomenon of popular science writing. His books “compiled a travelogue of every state that consciousness could enter” (*Echo* 93) – states which Powers describes in asides throughout the novel. Weber is part Oliver Sacks, certainly, and also V. S. Ramachandran (in whose writing Powers first came across Capgras syndrome) – but in connection to *The Echo Maker* Powers has also mentioned Antonio Damasio, Michael S. Gazzaniga, Gerald Edelman, and others.

51. In 1999, Wallace called Powers “the cream of the country’s Younger crop” of
novelists (“Brief Interview”). A year later, the two authors appeared together at an event chaired by John O’Brien, the editor of the Dalkey Archive Press – with the discussion later being published in Burn, Conversations (110-120). In the wake of Wallace's death, Powers dubbed him “the best of our generation” (“Tributes”).

52. As one might guess from the date of the setting, like so many neurofictions – Oblivion's “The Suffering Channel”, McEwan's Saturday, Hustvedt's The Sorrows of an American – The Echo Maker is a piece of 9/11 literature. Charles B. Harris, riffing on the self-protecting boundaries of imagined selfhood, describes how 9/11 and the invasion of Iraq “fester in the novel's background like a phantom limb, tribal instances of our genetically impelled territorial imperative” (240). While a fascinating line of enquiry, as in previous chapters, I will be largely sidestepping this theme here.

53. Laura Bieger skilfully unpacks the wider intellectual atmosphere underpinning the “narrative identity thesis” which The Echo Maker enacts (197-201), drawing attention to a post-1980 multidisciplinary explosion of interest in the concept rooted in the work of Paul Ricoeur and others.

54. Embodiment as an ambitious, bullish research project has exploded over the past two decades – particularly in relation to investigations of vision, memory and concept formation. The pioneering contemporary work – both generally, and specifically with relation to language – has been done by George Lakoff and Mark Johnson, whose Metaphors We Live By (1980) is now a classic in the field. The “embodiment debate” (Barrat 227) is a major one in the field of artificial intelligence, the research project with which Galatea 2.2 is so centrally concerned. Many in the AI field take the embodied mind thesis to its logical
conclusion and determine that “intelligence requires the whole feel of being human. The qualia, or subjective quality of occupying a body and living in a state of constant sensory feedback, may be necessary for human-level intelligence” (Barrat 227).

55. Engaging critically with Powers is complicated by another fact, and another similarity with Ian McEwan: what Heinz Ickstadt refers to as “the astonishing number of interviews that have accompanied the publications of [Powers’] novels for some time” (27). (Since The Time of Our Singing [2003], it would seem.) In fact, says Ickstadt, “it is difficult to avoid the impression that Powers has been trying to control the discourse about his work . . . being perhaps the best reader of his books, he guides our reading even against his better judgement” (27). Indeed, it is very rare to find a piece of Powers criticism that isn't peppered with his interview statements.

56. Houser categorises the novel “within an emerging literary subgenre that I designate eco-sickness fiction,” and places Powers (albeit in a problematized fashion) within a lineage which includes Henry David Thoreau, John Muir, Edward Abbey, Rachel Carson, and Mitchell Thomas – literature which “makes a strong case for wonder as an affect that sweeps the subject up in environmental excitement, revives awareness, and goads investment in problems of environmental degradation” (403). Sielke writes that the “ecological awareness in Powers' novel” is itself a sort of echo-making, “recalling Native American nomenclature and calling on authors like Aldo Leopold and Loren Eiseley” and honouring “a long tradition of conservational ethics and nature writing leading all the way to Al Gore” (250). We find the books which provide the novel's epigraphs scattered throughout the novel itself: When Weber visits Barbara's home, he finds a paperback of Eiseley's The Immense Journey on her
desk (*Echo* 427). After his fragile recovery, Mark reads *A Sand County Almanac* in his hospital bed (444).

57. A related point is that the animal kingdom also knows nothing of novel-writing. There is a metafictional gag at play in *The Echo Maker* wherein the incessant self-making which so occupies the book is something without which there wouldn't be a book. In this reading, the whole literary enterprise becomes a sort of exercise in endlessly reiterating our ontological situation. The narrator of Powers' *Generosity* summarizes this when he muses that “sexual selection, the surest and most venerable form of eugenics, has molded us into the fiction-needing readers we are today . . . the novel will always be a kind of Stockholm syndrome – love letters to the urge that has abducted us” (95). This 'urge', of course, is the urge so central to *The Echo Maker*. Later, *Generosity*'s author-protagonist, Russell, has an “epiphany”: “Plot is preposterous . . . Story is anti-life, the brain protecting itself from its only possible finale” (273). As Powers himself said in an interview, writing is, at bottom “the narrative explanation of self” (Burn, *Conversations* 117).

58. In a television interview, Thomas Kurton, the transhumanist figure in *Generosity*, gives a paean to humankind's evolutionary past reminiscent of Ian McEwan: “Listen: six-hundred generations ago, we were scratching on the walls of caves. Now we're sequencing genomes. Three billion years of accident is about to become something truly meaningful. If that doesn't inspire us, we don't deserve to survive ourselves” (252). As mentioned in my introduction, Kurton is something of a prototypical neurofiction Two Cultures antagonist, and Powers certainly doesn't agree with all of his pronouncements – but I think he agrees with this one, and that its spirit can be heard in *The Echo Maker*. 

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59. For a concise and comprehensive overview of the boom in transatlantic popular science writing and reading, see Elizabeth Leane 41-59.

60. Dominic Head's study places great emphasis upon how McEwan's moral understanding of fiction “reveals a startling similarity to [Iris] Murdoch's conviction about human goodness,” and the unique ability of novels to foster said goodness (9). Head sees McEwan – who has said that at 14 he was “an entranced reader” of Murdoch (“Mother”) – as developing Murdoch's vision, while “eschewing any mystical or religious explanation . . . supplying in its stead an evolutionary explanation” (Head 9). Reaching further back, we might also see McEwan's vision as a post-fMRI version of George Eliot's – another author he admires. In 1856, Eliot wrote that art is “a mode of amplifying experience and extending our contact with our fellow-men beyond the bounds of our personal lot” (qtd. in Hack 113). “A great novelist” who can render perfectly people's “psychological character,” Eliot said, would be “the greatest contribution Art has ever made to the awakening of social sympathies” (qtd. in Hack 115).


62. Psychoanalysis, as I discuss at length in Chapter 4, is a psychological and hermeneutic system which modern psychiatry, “its biomedical successor,” now regards “like a cigarette to an ex-smoker – as the despised reminder of a former way of life” (Waugh 2013, 27). We can probably assume that the older, outspokenly rational McEwan now views Freud's theories in much the same way as Enduring Love's Joe: “fabulation run riot” (50).
63. Indeed, *Enduring Love* can be seen as of a piece with Dawkins' *Unweaving the Rainbow* (1998), a book published mere months later. Dawkins' book – which takes its title from John Keats' apocryphal remark that Issac Newton eradicated the beauty of the rainbow by reducing it to a prismatic equation – defends scientific rationalism on very similar grounds and in identical terms to *Enduring Love.*

64. As Tallis outlines, neuroculture is often hard to untangle from neo-Darwinist trends. In much popular writing on neuroscience, “evolutionary theory, sociobiology and allied forces are also recruited to the cause . . . since, we are reminded, the brain functions as it does to support survival” (*Aping* 33). McEwan's novels are works of *neurofiction* first and foremost, but their neuro- – just like the discipline itself, as well as neuroculture at large – stands upon the foundations of a web of other disciplines from the natural sciences.

65. General readers such as Ian McEwan, of course. There is a nice irony at play here in the fact that Joe looks down on popular, 'unpure' science, even as his creator's understanding of the moral work of the novel is “produced by McEwan's reading in popular science – particularly in evolutionary psychology” (Head 9).

66. See Greenberg, who has argued that “the value of the literary in [*Enduring Love*] . . . seems to be that it offers access to love” (98); and Timothy Bewes, who has argued that “*Enduring Love* is, after all, an imaginative work of fiction; the text therefore colludes with Clarissa, the literary scholar, over Joe from the outset” (qtd. in Greenberg 102-103).

67. Not only are there stark biographical similarities – both men live in London's Fitzroy Square; both enjoy chamber music at Wigmore Hall; the fish stew Perowne cooks is a
favourite recipe of his creator's (Zalewski) – but Perowne also embodies and expresses at
great length by now fairly well-worn positions of McEwan's. As well as sharing McEwan's
dislike of magical realism, and his views on the invasion of Iraq, Perowne detests religion
and holds that Darwinian evolution is the only worldview one needs (“what better creation
myth?” [56]). He is a proud secular meliorist (“rather shop than pray” [126], he muses), and
dislikes “the professors in the academy . . . the humanities generally” (78) for apparently
being, to a man, “relativists” and “pessimists” (124).

68. Another minor complication is that McEwan's neuro-moral literary vision has been
entirely invested in the capacities of the novel; here, though, what saves the day is poetry.
This can probably be put down largely to pragmatics – McEwan can hardly have Daisy stand
up and read the whole of Anna Karenina. Still, it is worth noting, not least as poetry is a
genre that the prolific McEwan has never once dabbled in.

69. For example, June Tremaine in Black Dogs; Briony in Atonement; Henry's mother in
Saturday; and Edward's mother in On Chesil Beach.

70. Curiously, Hustvedt's writing “has been particularly well received in Germany;
Anglophone academia lags behind at a considerable distance by comparison” (Williamson
235). It wasn't until 2014 that the first scholarly monograph from Christine Marks was
published.

71. As Anna Thiemann recalls: “When asked why academics have neglected Hustvedt for
so long, Hubert Zapf . . . points out that she poses a challenge to scholars who approach her
work with established methods and categories. Straddling genre and disciplinary boundaries .
. . Hustvedt’s texts require readers to rethink their concept of literary discourse and to find
ways to relate to her radically interdisciplinary approach to human behavior and experience” (580-581).


73. An illustrative example is dreaming. As Casey Schwartz writes, Freud’s The Interpretation of Dreams (1899) is “the psychoanalytic Bible; all else flows from there” (112). However, neurobiologists such as Allan Hobson and others propose what is called the activation-synthesis hypothesis: dreams don’t actually mean anything, but are merely electrical brain impulses pulling together random thoughts and imagery from our memories. This theoretical stand-off is referenced in Sorrows by the character of Burton (101-102).

74. Notably the affective neuroscience of Antonio Damasio and Jaak Panksepp. For more on which of the research has been most influential on neuropsychoanalysis, see Solms and Turnbull.

75. See “New Intellectual” and “Biology.”

76. In Sorrows, Mark Solms (specifically his research into the nature of dreaming) is referenced by name by the character of Burton (102). In the novel's Acknowledgements, Hustvedt thanks Solms for introducing her “to the world of neuropsychoanalysis” (305), and credits various other researchers by name (305-306).

77. Indeed, it can appear at times as though there is no object of enquiry which Hustvedt cannot partly explain by conceptions of relational ideas of selfhood. For example, Hustvedt explores how the depth and primacy of intersubjective relationships may explain “that mysterious mind-body or psychosomatic phenomenon” (Woman 324), the placebo effect.
She even imports her favourite set of ideas into the fraught and fragile territory of suicidology, suggesting that the act of taking one's own life might be a fundamentally intersubjective act (Woman 416-433).

78. See Woman 135-342.

79. See Blakemore et al. – the scientific paper which first established the condition.

80. Indeed, Sorrows is a novel so heavily invested in psychoanalysis that in the critical arena Hustvedt actively encourages psychoanalytic readings. Hartman et al. features a strange, erratic essay from Lucien Mélèse, a practicing psychoanalyst who Hustvedt asked to take part in the book (83). Mélèse describes how he was “fascinated by The Sorrows of an American” (Mélèse 2016, 83), and calls the novel “one of the best books ever written, as it describes and delves into psychoanalysis as I imagine it should be” (84). Similarly, Françoise Davoine, also a practicing psychoanalyst, calls Sorrows “a major book for the psychoanalytical healing of trauma and psychosis” (99), and submits the novel to a dense psychoanalytical reading.

81. Presentification appears to be a term unique to the phenomenological tradition, perhaps coined by Edmund Husserl. Unfortunately, I have been unable to find a comprehensive definition.

82. We only hear second-hand, from Miranda, that Lane likes to quote Szasz. But Szasz followed Foucault in critiquing the social control and coercion dimension of psychiatric medicine. Here is a representative quote from Szasz: “Mental illness is a myth. Psychiatrists are not concerned with mental illnesses and their treatments. In actual practice they deal with personal, social and ethical problems in living . . . The notion of a person 'having a mental
illness’ is scientifically crippling” (262).

83. In *Living*, Hustvedt describes mirror neurons as the “physiological explanation for human intersubjectivity” (204). In *Woman*, she describes how this “form of embodied imaginative identification with other people is happening to us even when we aren't consciously aware of it” (313).

84. Winnicott is cited as an influence in the acknowledgements of *What I Loved*, and referenced in many of the essays of *Living*. Erik reads from his *Thinking About Children* during *Sorrows* (271).

85. In *Woman*, Hustvedt writes that “what came to be called 'neutrality' in psychoanalysis is a direct importation from the natural science, born of a fear that subjectivity and suggestion might muddy the transactions between the two people in the room, but that is exactly where the magic lies” (129).

86. Erik has lost his father, who experienced and witnessed terrible things during the war in the Pacific (during which “you carried your own body bag [69]) and whose “devils were legion” (121); Inga has lost her father and, five years prior, her husband; Sonia has lost her grandfather and, five years prior, her own father. Sonia has also witnessed 9/11 (seen something awful “from her schoolroom window” [4]), and the tragedy hovers over the whole novel (Inga has written an entire book devoted to the erroneous and shallow media depiction of 9/11 [48]). The novel precedes at the precise time that the US is beginning the “new military nightmare” (50) of the war in Iraq; Erik channels Hacking in musing on how the diagnostic category “solider's heart” was changed to “shell shock” then “war neurosis” and now posttraumatic stress disorder (PTSD) (52).
Although there is evidence of what Luke Thurston calls a “manifest hostility to psychoanalysis shown by Joyce himself” (88), Joyce's texts seem to possess deeply psychoanalytic concerns, and have been treated as such by many critics. As Trilling put it in 1951, Joyce, “with his interest in the numerous states of receding consciousness, with his use of words which point to more than one thing, with his pervading sense of the interrelation and interpenetration of all things, and, not least important, his treatment of familial themes, has perhaps most thoroughly and consciously exploited Freud's ideas” (40).

Indeed, on the topic of softer forms of neurofiction, one fascinating project would be to seek to reveal as neurofictions works that don't even know they are neurofictions. That is, to map out the ways in which the truly pervasive elements of neuroculture – those unseen ways in which throughout society “the shaping of a self” occurs “on the basis of expert knowledge, an understanding of subjectivity that derives from a scientific third-person perspective,” in tandem with the “cohabitation of everyday ontologies, such that individuals shift registers in their ways of acting, experiencing, interacting and thinking and speaking about themselves” (Vidal and Ortega, “Approaching” 17) – emerge in literature which isn't self-consciously engaging with neuroscience at all. How are tiny quirks of language and psychological register altered in the neurocultural era, even in works which don't deliberately thematise the brain at all?

Nick Bentley has extended these criticisms into one of the neurofictions at the centre of my thesis: Ian McEwan's Saturday. Bentley explores how Baxter's Huntington's disease is presented as “contributing to the novel's metaphoric representation of a pervasive sense of threat in the period following September 11” (126), and suggests that this “juxtaposition of
social and political commentary with the metaphorical use of trauma can be problematic” (127).

90. Nicole Krauss's *Man Walks Into a Room* (2002) features a string of neurologists, all of whom reveal themselves to be cold, emotionless men interested in Samson's brain, but not his life. Dr. Lavell is a dispassionate, non-empathic figure, “more loyal to the organ of the brain that the personality it produced” (32). The New Agey Dr. Malcolm charms Samson with an opulent trip to California in the hope of exploiting his suffering to “push the boundaries of science” (81). In Powers' *The Echo Maker*, when at the peak of Mark's suffering he begins to exhibit Cotard's syndrome – a very rare condition where sufferers believe they are dead, or do not exist – Karin can “feel the neurologist [Dr. Hayes], already writing up this new wrinkle for publication” (398).


92. See Gary Storhoff and John Whalen-Bridge, *Writing and Emergence*; and Lawrence Normand and Alison Winch, *Encountering* for a critical introduction to how Buddhism has influenced Anglo-American literature since the mid-20th century.

93. There may also be a window here to ameliorate the notable lack of racial diversity in the neurofiction canon. Johnson – an African-American author who is also probably the pre-eminent Buddhist fiction writer in America – tells me that he subscribes “to a handful of science magazines aimed at lay persons,” and that “the Buddhism/meditation/neuroscience
connection has long been of interest to me” (“Re: Buddhism & Neuroscience?”).

94. In Powers' *Generosity*, the character of Thomas Kurton seems to be heavily based on Kurzweil (as well as other well-known figures such as Craig Venter and Peter Diamandis). Kurton – a wealthy, much-interviewed, jet-setting entrepreneur – runs a legion of geneticists who are working to “cure age” (58). Kurton believes that as a species we need to “take our natures into our own hands and sculpt out better angels” (164). The visual artist Rune in Hustvedt's *The Blazing World* is similarly obsessed with Kurzweil's vision of the so-called Singularity, channeling Hustvedt's own intimate acquaintance with contemporary debates around artificial intelligence (see *Woman*, especially 256-294).
Works Cited

Intersections: Essays on Richard Powers, edited by Stephen J. Burn and Peter

Thoughts On 'The Suffering Channel,' Reality, and Shit.” The Quarterly
Conversation, 6 June 2011.

Amigoni, David. “‘The luxury of storytelling’: Science, Literature and Cultural Contest in Ian
McEwan's Narrative Practice.” Literature and Science, edited by Sharon Ruston, D.


2009.

Ayala, Francisco J. Evolution, Explanation, Ethics and Aesthetics: Towards a Philosophy of


Bakewell, Sarah. At The Existentialist Café: Freedom, Being, and Apricot Cocktails.


Barash, David P. and Nanelle R. Barash. Madame Bovary's Ovaries: A Darwinian Look at

Barrat, James. *Our Final Invention: Artificial Intelligence and the End of the Human Era.*


---. *The Physiology of the Novel: Reading, Neural Science, and the Form of Victorian*


De Waal, Frans. *Are We Smart Enough to Know How Smart Animals Are?* W. W. Norton, 2016.


Dreyfus, Hubert and Sean Dorrance Kelly. *All Things Shining: Reading the Western Classics to Find Meaning in a Secular Age.* Free Press, 2011.


---. “Neuromodernism: Diagnosis and Disability in Will Self’s *Umbrella*.” *Modern Fiction Studies*, vol. 61, no. 2, Summer 2015, pp. 271-294.


Hogan, Patrick Colm. “Literature, God, & the Unbearable Solitude of Consciousness.”

*Journal of Consciousness Studies*, vol. 11, no. 5-6, 2004, pp. 116-142.


---. “Borderlands: First, Second and third Person Adventures in Crossing Disciplines.”


---. “Biology and the future of psychoanalysis: a new intellectual framework for psychiatry


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---. “Only love and then oblivion. Love was all they had to set against their murderers.” *The Guardian*, 15 Sept. 2001.

---. *Or Shall We Die?* Jonathan Cape, 1983.


Murphy, Bernice M. “Horror Fiction from the Decline of Universal Horror to the Rise of the Psycho Killer.” Horror: A Literary History, edited by Xavier Aldana Reyes, British
Library, 2016, pp. 131-158.


2010.


---. *This Is Water: Some Thoughts, Delivered on a Significant Occasion, about Living a Compassionate Life*. Little, Brown, 2009.


