Intensive Labours, Expansive Visions

Emerging ideals of the ethical subject amidst the rise of cognitive neuroscience

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A thesis submitted for the degree of Doctor of Philosophy

The Australian National University

June, 2016
Declaration

I certify that this thesis presented for examination contains no material which has been accepted for the award of any other degree or diploma in my name, and contains no material previously published or written by another person, except where due reference has been made in the text.

Quotation from this work is permitted, provided that appropriate acknowledgment is made.

The length of this thesis is 95858 words.

___________________________________
Matthew Wade, June 2016
Acknowledgments

It has been a great privilege to be part of the Sociology Department at the ANU, a thriving intellectual community that also provides a level of personal support of great comfort during the sometimes melancholic and obsessive process of writing a dissertation.

The Difference Lab (formerly the New Critical Theory group), a collaborative effort formed to foster new experimental and generative approaches to thought and practice, has also been a significant source of inspiration and collegiality. The members of this group – Maria Hynes, JD Dewsbury, Scott Sharpe, Miranda Bruce, Philippa Barter, Seimeng Lai, Rohan Todd, Oriane Simon, and Clare Southerton – have always shown a willingness to countenance what may be seen as risky and taboo entanglements, and I am grateful that they have been willing to indulge my interest in recent developments in empirical moral psychology, including the question of whether masturbating using a store-bought chicken, and then proceeding to cook and consume it, would constitute an instance of a ‘non-moral wrong’ suitable for use as an experimental stimulus (see Haidt, Koller and Dias, 1993: 617).

Since 2013 I have enjoyed tutoring and presenting several guest lectures at the ANU and the University of Canberra across of variety of courses. Of particular satisfaction were two semesters in a largely STS based course that attracted an incredible variety of students. During one of the class discussions regarding the increasingly popular and sophisticated practices of the ‘quantified self’, one student mentioned his use of a digital sleep tracking application. This program, he informed us, tracks movement of the body as a correlative measure of the overall restfulness and quality of sleep. Lying awake one night, this student became restless and had an urge to reposition his stiffening limbs. However, knowing that this would result in a noticeable ‘spike’ that would affect the application’s overall assessment of the quality of his ‘sleep’, he decided against moving, instead remaining awake (and in growing discomfort), but retaining the application’s positive assessment of his aptitude in sleeping. In some sense this cruel absurdity captures an underlying motivation of this thesis in considering to what authorities and artefacts we willingly give over assessments of our wellbeing, and the consequences of when narrow or corrupted scripts embedded in these devices and discourses res in optimistically according ourselves to self-defeating labours. It is these small but significant revelatory moments that I have found especially rewarding in teaching.

Early portions of this research were presented at the University of Queensland and Goldsmiths University of London, and I am grateful to those seminar participants who offered constructive insight at this formative stage.
Very late in the final writing process I was offered the chance to speak at the University of Heidelberg on other research I have conducted in tandem with this thesis. This provided a useful opportunity to establish some objective remove from the thesis during the final stages, and so I am grateful to Katja Rakow and Esther Berg from the Cluster of Excellence Asia and Europe research group at Heidelberg for funding my visit.

I owe a great debt to my supervisor, Maria Hynes, for both her intellectual insight and steadying hand. Moreover, I am grateful to Maria for allowing me the freedom to pursue several lines of inquiry simultaneously, while always serving as an orienting touchstone to help ground my often wayward thinking, gently corralling me towards rigour and clarity in my writing.

Finally, I must thank my family for their support over the last few years. My partner Natasha, especially, has been a source of encouragement throughout the entirety of this effort. Though we generally choose to undertake writing a doctoral thesis because we strongly believe in the importance of the task at hand, there is no denying that it can prove a somewhat selfish cause given the burdens it may place on those closest to us. With these debts in mind, I hope this thesis proves to have been a worthwhile endeavour in tentatively seeking ways we can realise a greater communion with one another.
Abstract

This thesis seeks to trace the escalating shift from mind to brain and resulting changes in understandings of care for the self, emergent in part through growing influence of neuroethics and related calls for ‘neuro-enhancement’ of the ethical subject. This study – propelled largely through a critical discourse analysis of recent disciplinary output and public engagement – is particularly interested in observing the increasing confidence of neuroscience-informed perspectives on humanity, with announcements that we are witnessing a so-called ‘Second Enlightenment’. Such calls for a new ontology of ethics, I argue, amounts to overly ‘expansive’ claims funnelled through increasingly ‘intensive’ gazes. Within the rise of neuroscience more broadly, empirical neuroethics proclaims its epistemic privilege with respect to tracing our moral selfhood, in part through its location of measures of the ethical subject within functionally ascribed activity traced at the neurological level. Once elusive properties of conduct and wellbeing are now sought to be registered in the common currency of this synaptic ledger, exclusively overseen by specialists in this new field of expertise.

The thesis then explores the subsequent adoption of this new empirical currency by those practicing a ‘hard’ transhumanism. Advocates of this position urge us to embrace methods of cognitive and moral ‘enhancement,’ lest we find ourselves unfit for the future in a world of ever-escalating risk. However, I argue that dominant framings of care of the self within neuroethics tend to be narrowly construed. I suggest that by failing to recognise the socio-historical contingencies of their claims, neuroethicists risk producing rigid, stultifying, and perhaps even self-defeating constructs of the ideal citizen. The personal ethos advanced by these new technologies of the self creates new forms of personal responsibility, which, consistent with neoliberal ideals of progress, involves a perpetual labour upon one’s brain as a mode of accumulation strategy. This threatens to become a cruel labour that ultimately jars with our eventual and inevitable neurodegeneration.

In response to this emerging ethos, I attempt to go beyond the constraints of a merely critical discourse to enable a more productive, if cautious, engagement with the claims of the new, applied neuro-disciplines. I consider what kind of differently expansive framing of subjectivity might be better suited to the present, compared with the ‘hyper-cognitive’ subject of certain ‘hard’ neuroscientific and neuroethical discourses. Contributing to the growing interest in the social sciences in the broad movement of ‘neurodiversity’, I turn to fictional accounts of dementia to see what might be learned from these literary sources. I argue that these literary
explorations of subjectivity open up novel ways of reconceiving our relation to our neurology, and thus may play an important role in reimagining the self in a manner adequate to the complexity, urgency, and promise of our times. Though grounded primarily within the field of the sociology of science and technology, this thesis also draws extensively on related thought in poststructuralist critical and literary theory, while also maintaining an accessibility acutely attuned to the growing importance of interdisciplinary exchange.
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Chapter One

The Promise of the Brain

Introduction: Where should we direct our gaze?

In a paper on ‘How to Talk About the Body?’, Bruno Latour (2004: 224-227) recounts that a former colleague, the neurophilosopher Paul Churchland, would proudly carry in his wallet a picture of his wife, fellow neurophilosopher Patricia Churchland. Of course, this might be typical of any devoted spouse. However, in lieu of the customary photographic portrait, Paul’s token of affection was instead an image derived from a brain scan of Patricia. Perhaps never before has tender sentimentality and ontological debate collided so heavily in something so mundane. Together, the Churchlands comprise a driving intellectual force behind ‘eliminative materialism’, an epistemological stance directed towards dismantling the ‘folk psychology’ by which we have traditionally navigated questions of our varying volitions and dispositions (P.M. Churchland, 1984, P.S. Churchland, 1989). Such folk understandings, eliminativists argue, amount to ‘a false and radically misleading conception of the causes of human behavior’ and ‘an outright misrepresentation of our internal states and activities’ that, in time, must be discarded under the cool gaze of ‘a matured neuroscience’ (P.M. Churchland, 1984: 43).

Patricia Churchland goes so far as to suggest that ‘the history of science can be seen as a gradual process whereby speculative philosophy cedes intellectual space to increasing well-grounded experimental disciplines’ (Churchland, 2008: 409).

What, then, should we make of the normative implications of Paul Churchland’s unusual token of marital love? Latour (2004: 224) exclaims with a mixture of aghast and wonder that ‘Paul [Churchland] insists adamantly that in a few years we will all be recognizing the inner shapes of the brain structure with a more loving gaze than noses, skins and eyes!’. The rhetorical intent implied in the gesture of directing our loving gaze to a brain scan is clear: the material composition of the brain is the terrain by which we can map the most meaningful representation of the self. All else is merely post-hoc and decorative. Patricia Churchland (2002: 56) believes that in ‘hacking away’ at the soft and fuzzy edges of our ‘folk’ explanations – by gradually translating them down to the neurological level – we may finally arrive at a comprehensive understanding of the essential assembly that forms us as humans. Debate along these eliminativist lines is thus ‘foreclosed by the belief that the ontologically most fundamental level of explanation is by default the most appropriate one’ (Slaby and Choudhury, 2012: 30). In comparison to the take-no-prisoners approach of the Churchlands,
other neuro-practitioners are somewhat more conciliatory to other disciplines. Neurophysiologist Wolf Singer (in interview with Thomas Metzinger, 2009: 71), for example, envisions that ‘the humanities will provide the taxonomy and description of phenomena awaiting investigation at the neuronal level’. However, this still presupposes that one can locate and comprehensively bound complex and contingent social phenomena within the brain, and moreover accords the humanities only a somewhat limited role.

Though some might suggest that eliminative materialism has fallen out of favour in recent years, I would counter that a closely comparable form of attempted epistemic colonisation process is taking place through the relatively new field of neuroethics, and that it is not insignificant that one of the first advocates of this new discipline was Patricia Churchland (2002). Specifically, I am concerned here with those proponents of neuroethics who seek to import highly contingent understandings of morality and the ethical subject into what might be termed the ‘brain terrain’, thereby resubstantialising these elusive properties with a new, harder materiality. This, in part, has been enacted through recent developments in empirical moral psychology, with approaches that adopt experimental constructs designed to test our normative stances against their functionally-read realisation in the brain ie. do we make ethical decisions for the reasons we say we do, or are we beholden to mechanisms that we may be able to corral to more desirable ends? Through these epistemic models, emerging claims from neuroethics regarding the biomarkers of the ideal subject may then fold back onto us as ethical injunctions, such that technologies and techniques of caring for the self may come to include cultivating a very particular kind of neurological disposition to the world.

What is especially significant about these empirical claims is that they largely exclude the possibility that the social sciences and humanities may yet have something more to contribute to the emerging neurosciences beyond simple categorical frames. As Frank Vander Valk (2012: 1-5) observes, the expansive epistemic reach sought by the cognitive neurosciences suggests that the social sciences and humanities are merely treading water until certain cool gazes can relieve us of our duties. We should not anticipate that this epistemic colonisation will be fully realised anytime in the near future, if at all, but that nevertheless the widespread belief-in-itself of this inevitable march of positivist progress may play a formative role in our ongoing constitution as subjects (Hacking, 1995). Yet, in this jamming into the brain of all that it means to be human, much may be inadvertently and prematurely squeezed out, including currently unforeseen lines of possibility in how we may come to understand ourselves. We must recognise that Paul Churchland’s wallet photo implies a significant ontological claim, wherein the brain is deemed the logical stopping point of inquiries into our wellbeing, and the storehouse of the self.
We should approach with some caution the claim that the neurosciences are in the process of illuminating the aetiologies of our ‘essential’ qualities, for its paradigms are themselves historically bound, entwined with ideals of the human subject peculiar to the time and place of the emerging life sciences. Through efforts to intensively map the self as a set of material properties, some ambitious neuroethicists and related practitioners fail to recognise the socio-historical contingency of what is eliminated as ‘irrelevant’ from explanatory frameworks, and what is then ‘revealed’ within the brain (see, for example, Greene, 2013; Harris, 2010; Gazzaniga, 2006; Levy, 2007; Persson and Savulescu, 2012). It would serve no purpose to simply dismiss the claims of such neuroethicists as so problematic as to be beyond engagement, for their pronouncements are capturing the public imagination (and research funding), and so may prove formative in our ongoing constitution as citizen-subjects. Hence a central aim of this thesis is to interpose a critical perspective upon this burgeoning line of inquiry, and to offer alternative ways in which we may approach the tracing of our neurological constitutions.

The neuroethical advocates that I seek to closely interrogate lay claim to a hard, empirically-driven mapping of the thinking and feeling subject as a means to develop a universal morality, one grounded in the epistemological terrain of our brains. By correlating measures of ‘good action’ and ‘right thinking’ to neurological activity such practitioners claim to have uncovered biomarkers of morality, proposing that, in the near future, we look to apply these insights as a new mechanism of governmentality enacted through subjects increasingly attuned to their ‘brainhood’ (Vidal, 2009). From the outset, the universalising nature of such thinkers’ claims should ring alarm bells for social scientists who have long criticised the confusion of the contingent and the universal. It is not simply that scientific practices are inevitably value-bound, determined from the start by particularity and difference (Fox Keller 1985; Harding 1986; Haraway, 1988), but rather that, in the case of neuroethics, empirical claims about our moral personhood regularly fail to acknowledge their contingent nature.

There are significant practical implications arising from the neurosciences’ epistemic colonisation of areas normally open to diverse forms of knowledge. In particular, as Nikolas Rose (1990, 1996, 1999, 2007; Rose and Abi-Rached, 2013) has long observed, the knowledge claims of the ‘psy’ disciplines – and now increasingly of the ‘neuro’ – inform an ethic of care of the self, orienting new forms of subjectivity and governmentality in advanced liberal democratic systems. Under this new neurological regime we may come to see ourselves as ‘neuronal machines’ and ‘molecular automatons’, modelled and reconfigured through ‘the cutting-edge neurocognitive sciences’ (Slaby and Gallagher, 2015: 46). Through these new discourses we are encouraged to labour upon our neurological constitutions as if this were a
self-evident good and the logical, authoritative entry point into assessing our wellbeing. Yet, the form of this labour presupposes ‘essential’ qualities of the subject that are already conveniently embedded in existing institutional frameworks, and in doing so, makes those highly contingent frameworks seem natural and immutable. As I demonstrate throughout this thesis, both certain classical humanist and neoliberal conceptions of the ideal subject are underpinning claims about our higher cognitive capacities in ways that fail to recognise their socio-historically anomalous quality. When Thomas Metzinger (2009: 233), for example, insists on the importance of tracing the underlying causal mechanisms of good action towards developing a ‘consciousness ethics’, he has in mind a particular image of the good actor: a unified self, who cultivates their inviolable rational capacities which he or she not only can, but should, exercise and moreover seek to enhance. However, the social sciences have long challenged the naturalisation of such images of the ‘good life’, along with the uncompromising apportioning of responsibility to the individual that such essentialist claims may entail.

What we are witnessing, then, is the emergence of new practices of the care of the self, and in this thesis I am particularly concerned with how such self-care is folded through the realisation of narrowly conceptualised forms of ‘freedom’ (Foucault, 1997). In the appeal to embrace neurological forms of self-enhancement the popular rhetoric of ‘neuroplasticity’ is noteworthy here, if only through the manner in which it has captured the public eye by framing the brain as a well of potential, open to shaping towards ends chosen by the subject as both consumer and producer of self. As Catherine Malabou (2008: 32-54) has pointed out, metaphors of the brain have always represented ideals of governance and the technological diffusion of power, and the notion of the brain’s plasticity is no exception. We might not be surprised to find, then, that the so-called higher cognitive capacities that neuroethicists would have us enhance are also those deemed of greatest value for productive society in this post-Fordist era, which is characteristically ‘dynamic, multi-polar and adaptive to circumstance’ (Jeannerod, 2008, p. xi). To abide the contemporary instrumentalising of our neuroplasticity, then, is to commit to a perpetual labour of neurological care of the self as a vocation of good citizenship. Yet these parameters within which we are called to enhance ourselves tend to be narrowly delimited to an idealised ‘hypercognitive subject’ (Post, 1995; O’Neill, 1997). Therefore, we may ultimately be committing ourselves to a rigid form of plasticity, which risks stultifying the self into frames that could later prove difficult to even interrogate, let alone displace.

Given that the disciplines of neuroscience and neuroethics (a field in part dedicated to finding the neurological correlates of normative ethical positions) have been characterised by a high degree of ambition in recent years, the social sciences might wish to adopt a critical stance towards some of its claims, but should also seek to become ‘entangled’ with the neurosciences.
in new ways. Through this cautious but good faith entanglement the great potentials arising from these emerging fields of knowledge might be grasped and contextually grounded. To this end, this thesis aims to firstly rein in some of the more ambitious speculations from the emerging neurosciences – particularly those which may shape and prescribe ethical injunctions regarding the ‘ideal’ neurological subject – and then offer new ways by which we might approach the exploration of our neurological subjectivity.

Much of this thesis is concerned with the emergence of the new sub-discipline of neuroethics, which can be broadly divided into two main branches: the ethics of neuroscience, and the neuroscience of ethics. While the former is in many ways simply a further specialisation within already established fields in medical and bioethics, the latter – which purports to trace the neural underpinnings of ethics – marks a significant shift in how we may conceive of ourselves as ethical subjects, and to what practices we subsequently become normatively beholden, and so demands close critical scrutiny. This will be achieved through close textual analysis of those key actors who have negotiated neuroethics into disciplinary legitimacy, and of what acts of epistemological flag-planting and ontological claims are now gaining currency.

A central aim of this thesis, therefore, is to provide a text that is accessible across disciplines, offering a work that is critical but also hermeneutical, seeking to build interpretive bridges between disciplines by offering a neo-Foucauldian means of thinking against the present (Rose, 1996: 18), unpacking cases where the socio-historically contingent has been too readily flipped into the timeless universal, and finally, gently angling towards some emerging posthumanist conceptions of ethical being as a promising alternative path. My underlying contention throughout this thesis is that some instances of hasty ambition within the otherwise generally measured and cautious field of neuroethics can be saliently tied to what Niezsche (2004: 14) described as the ‘congenital defect of philosophers’, that is, mistaking the highly anomalous subject of today for an eternal truth:

‘All philosophers suffer from the same defect, in that they start with present-day man and think they can arrive at their goal by analyzing him. Instinctively they let “man” hover before them as an aeterna veritas’, something unchanging in all turmoil, a secure measure of things. But everything the philosopher asserts about man is basically no more than a statement about man within a very limited time span... Some unwittingly even take the most recent form of man, as it developed under the imprint

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1 The field of neuroethics will be discussed in much further detail below, but for general overviews see Brosnan, 2011; Roskies, 2002; Marcus, 2002; Glannon, 2006, 2011; Levy, 2007, 2008; Farah, 2010; Conrad and De Vries, 2011; Buniak, Darragh, Giordano, 2014; Darragh, Buniak, Giordano, 2015; Wade, 2015)

2 ‘eternal truth’
of certain religions or even certain political events, as the fixed form from which one must proceed. They will not understand that man has evolved, that the faculty of knowledge has also evolved, while some of them even permit themselves to spin the whole world from out of this faculty of knowledge.’

Some prominent voices within neuroethics, I will argue, suffer from this defect by too readily seeking to affix properties of ethical conduct – which are themselves inextricably wrapped up in historical contingencies – within our neurological constitutions. This defective aspiration to ‘spin the whole world’ through the intensive gaze into the brain extends further in not only hastily conflating the contemporary subject with our forebears (and future descendants), but also to hardening idealisations of our species-being. Such bounding of the ‘ideal’ subject occurs within neuroethics through those practitioners who assume that our purportedly species-unique capacities in rational thought are ipso facto the key to further realising what best affirms us as volitional beings. This results in the heavily laden assumption that the achievement of wellbeing, flourishing, eudaimonia, etc. will come through the ongoing enhancement of these species-unique capacities, measured through aforementioned highly contingent socio-historical frameworks. Whatever we mean by ‘ethics’ thus becomes crudely shoehorned into this narrow onto- and epistemological space, corrupting it in the process by being supplanted with crude placeholders that, I will argue, results in tight spirals of ‘looping’ effects (Hacking, 1995) regarding assessments of conduct, thereby negating other possibilities for realising new modes of ethical being.

However, a great deal of expository groundwork must be established before I can dig into the detail of this overarching argument. With this in mind, I wish to spend some time in this introductory chapter outlining: the growing epistemic reach of the rapidly expanding neurosciences; the parallel emergence of the Western ‘hyphen-ethic’; and finally very recent calls for interdisciplinary ‘entanglements’, for each of these recent developments informs the curious entwining of intensive gazes and expansive ends that I seek to interrogate throughout this thesis.

The reach of the neurosciences

In its most basic working definition neuroscience is the study of the nervous system, ranging from the molecular level of parsing individual nerve cells up to the study of how the enactment of sensory and motor capacities can be traced through the brain. Suffice to say this is quite a
broad scope across multiple ontological and epistemological terrains. Therefore, as Martyn Pickersgill (2013b: 324) drily observes, any attempt to briefly but comprehensively define the neurosciences ‘is somewhat akin to attempting to define the social sciences’, and so ‘perhaps effaces as much as it reveals’. The field of view within the neurosciences ranges from the ‘cellular, molecular, anatomical, physiological, and behavioral’, and so while the discipline as a whole relies heavily on the integration of multiple levels of analysis it understandably does not lend itself well to wholly encompassing definitions (Rose and Abi-Rached, 2013). Indeed, as Steven Rose (2012: 56) wearily notes, the ever-increasing heterogeneity, complexity, and specialisation in the division of labour within the neurosciences regularly results in gatherings where working practitioners ‘predominantly talk past one another’. Of particular relevance to the following chapter on empirical neuroethics is the way in which increasingly abstract qualities of the human condition are being rendered ‘visible’ through brain imaging technologies. But, as Simon Cohn (2004: 70) astutely points out – and contrary to common anti-reductionist presumptions – we should perhaps be more concerned not with the possibility of damning and dehumanising revelation of our underlying qualities, but rather with producing, inducing, and then containing in ‘harder’ forms those diffuse phenomena which need to be kept outside the skull, in order to remain open to collective negotiation and repurposing:

‘The real issue, as I see it, is not about the processes of conversion, but the opposite: the ways in which cultural dimensions are reproduced and further disguised by such technological developments. Neuroscience increasingly entraps all aspects of human experience within a single gaze; all aspects of human life, from emotions to suffering to dreaming, are now legitimate areas for valid investigation. In so doing, the technology does not merely transform but newly generates these categories as discrete objects for the new scientific. And, in so doing, life is effectively being recast, though it remains transient enough never to be defined or even acknowledged.’

Such images exercise a privileged position, representations from which ‘humanness is abstracted, yet which nevertheless claims to represent it’ (Cohn, 2004: 70-1). When this dual undertaking of objective abstraction followed by vivid representation purports to radically question long-held positions of normative ethics – as the next chapter will demonstrate – then in rapid fashion our conceptions of the ethical subject are open to being ‘recast’ (to use Cohn’s term). This may then fold into injunctions upon our conduct targeted at the neurological level, for some influential advocates propose that in order to counter escalating global risk we should consider embracing a regime of neuroscience-based ‘moral enhancement’ (see Chapter Three). The neuroscientific gaze that has been steadily legitimated through technologies of
visualisation thus exercises a dizzying degree of epistemological flexibility, one to which scholars of other disciplines would be wise to monitor and – in a collaborative spirit rather than hostile takedown – offer their own hard-won cautionary advice.

Despite its currently privileged position, neuroscience as a somewhat formalised discipline in its own right has only been around for about half a century, but in that time has grown rapidly and with ‘revolutionary’ zeal (Rose and Abi-Rached, 2013: 5). Of particular interest to this thesis are recent efforts in the SCAN sub-fields (social, cognitive, and affective neurosciences), which investigate aspects of higher cognition and phenomenology, particularly around emotions and affect, morality, decision-making, and memory, amongst other equally salient and normatively-laden issues for how we derive meaning and orient ourselves in the world (Slaby and Gallagher, 2015). Such properties and interactions were once within the largely exclusive purview of the social sciences and humanities. However, with the increasing willingness of the neurosciences to translate properties of the ‘social’ into the epistemological terrain of the neuro – in ways that may ‘naturalise’ or ‘essentialise’ them – social scientists have an obligation to trace such processes to ensure we recognise the implications of such knowledge claims (Cerulo, 2012; Pickersgill, 2013a, 2013b).

This might appear to place fields like sociology in a bind: are we epistemologically wedged in either finding ourselves co-opted and complicit with ‘reductionist’ models of agency and selfhood, or do we resist such practices and so risk becoming ostracized and excluded from the ongoing ‘making up’ of subjects (Hacking, 1985, 2006)? Or is there perhaps an alternative path, as recently proffered in new forms of interdisciplinary collaboration (Callard and Fitzgerald, 2015; Wilson, 2015)? There are certainly compelling reasons for those in the humanities and social sciences to be duly watchful of developments in the neurosciences, for claims made regarding the ideal neurological subject may have long-lasting repercussions for frameworks of governmentality and injunctions upon our conduct. Furthermore, as with all efforts that push upon the boundaries of knowledge there is an ever present gap between what is speculated as conceivable and plausible and what is believed to be true and applied as such. When the gap pertains to our very selves these ‘looping effects of human kinds’ (Hacking, 1995) can be especially abundant, fomenting an ‘anticipatory’ ethic of witnessing our purportedly naturalised, essential constitutions ‘revealed’ through the objective measures of science (Slaby and Gallagher, 2014; Brinkmann, 2005). We diligently reconfigure ourselves in response to these authoritative speculations regarding our human qualities and functions, and in doing so produce new assemblages of the self that perhaps would not have emerged had those claims not been widely promulgated. Note that this ‘looping effect’ is not equivalent to a self-fulfilling prophecy, but rather pertains to the broader recognition that we are always and
already reflexive subjects, and that in the modern era of personal responsibilisation for care of
the self we remain as reflexive as ever, but often only in certain demarcated avenues given by
contextual circumstance.

In this space between speculation, application, and reflection, sociology can play a key role,
illuminating the effects and practices of when an epistemological claim is caught between its
positing, its possibility, its production, and its performance. This role of monitoring potential
looping effects is especially important given legal scholar and bioethicist Henry Greely’s (2012)
claim that ‘half of what neuroscience is teaching us about human brain function will be shown,
in the next 20 years, to be wrong—and we will need each of those 20 years to figure out which
half’. Needless to say, twenty years of according ourselves to the ‘wrong half’ of
neuroscientific claims will not be quickly rectified – particularly where those claims pertain to
the constitution of the ideal ethical subject – and so a level of epistemological humility is
required as we follow neuroscience into and out of the lab.

The success of the neurosciences in capturing public assent and enthusiasm has generated a
translational bottleneck in which ‘everything that is considered social now must pass through
the brain’ (Rose and Abi-Rached, 2013: 162), and where neuroscientists announce with an air
of assured impunity that it ‘all comes together in the brain’ (Sperry, 1981: 3). This in turn may
shift our relations to these formerly elusive ‘social’ properties once they become ‘affixed’
within the neurological. Along these lines some observers, such as Karl Popper (1985: 97),
have long predicted the coming dominance of ‘the new promissory materialism’ with a sense
of resigned ambivalence, noting that ‘the language of the [brain] physiologists is likely to
penetrate more and more into ordinary language, and to change our picture of the universe,
including that of common sense’. For example, and as Chapter Three will demonstrate, a
particular vein of neuroscience-informed transhumanism suggests that our current ‘common
sense morality’ is proving insufficient to countenance the complex problems of our globalised
risk societies, and therefore we may require ‘moral enhancement’ through interventions
directly targeted at our neurological makeup. That morality is now spoken of as a property to
be ‘enhanced’ at the level of the molecular speaks to the prospect that within this new
discursive sphere it may soon appear illogical or at least inadequate to speak of the citizen-
subject and his/her conduct and wellbeing without reference to their neurological
constitution. This flattening of the subject into the brain, suggests Slaby and Choudhury (2012:
6-7), demonstrates the risky over-confidence and rushed epistemic colonisation undertaken by
some neuroscientists, for ‘the leading naturalistic assumption forecloses meaningful debate
and moves right on to programs of technocratic intervention’. This is where looping effects
may be especially pernicious, for the increasing impetus placed upon satisfying translational
imperatives moves laboratory research and technological developments into the insistent ‘chasing’ of scientific solutions to social problems, resulting in practical applications emerging in ever faster cycles, and leaving us with little space and recourse in which to interrogate to what ends such interventions are directed (Rapp, 2011).

If the Foucauldian ‘conduct of conduct’ is now to be inscribed upon the brain – thus generating a new epistemological circularity that ‘not only establishes what counts as an explanation, it establishes what there is to explain’ – then this has potentially radical consequences for the way mechanisms of governmentality act upon us (Rose, 2007: 192). Coupled with neoliberal endorsements of autonomy, choice, and personal responsibility, along with the incorporation of increasingly personalised techniques and technologies of self-management, this turn to the neuro generates a new layer of the ‘somatic ethic’ (Rose, 2007: 252-258) we are expected to uphold as ‘neurochemical selves’ (Rose, 2003, see also Rose and Novas, 2008). Of interest for this thesis, then, is in tracing how recently emergent neuroscientific sub-fields relate to and generate a particular ethos for how we might best assess and manage our capacities and agency. To what degree of self-monitoring, cultivation, and intervention at the level below the conscious self might we be called upon to exercise as appropriately ethical citizen-subjects? Would such responsibilities of this ‘intensive’ kind – looking to labour upon our sub-personal mechanisms – accord us greater ‘freedom’ and space for self-actualisation, or might they instead further ratchet up the burdensome upkeep of ourselves as productive subjects in Post-Fordist societies?

Part of the growing interest accorded to the neurosciences is driven by the potential envisaged in the convergence of NBIC (nano-bio-info-cogno) technologies (Roco and Bainbridge, 2003; Parens and Johnston, 2007). The integration of these different bodies of knowledge poses new sociotechnical possibilities and instrumentalisation of our material assemblages in ways difficult to foresee, but nevertheless is often framed through the aspiration towards ‘enhancement’ of desirable human capacities (Kahane, Savulesu and ter Meulen, 2011). In this space of promissory ‘neurofutures’ (Martin, 2015) there is an intense interest of capital, with flows of investment given over to the ‘impressive grantsmanship’ (Vander Valk, 2012a: 2) of those neuroscientists acutely attuned to satisfying translational imperatives and stoking the ‘seductive allure’ of their research (Weisberg et al., 2008, see also Joyce, 2008; McCabe and Castel, 2008; Caulfield et al., 2010; Whiteley, 2012). For example, recently launched brain modelling projects have piqued widespread interest and enthusiasm, in part serving to legitimise the utility of multi $B projects undertaken by the US and the EU (the BRAIN Initiative and the Human Brain Project, respectively). These projects mark the latest developments in a string of large scale undertakings that render us ‘visible’ in new forms, with methods and
rhetoric that can take on iconographic overtones (see Waldby, 2000; Beaulieu, 2000; Cohn, 2004; Dumit, 2004; Joyce, 2008).

The promissory qualities of these ‘big science’ projects is abundant, with President Barack Obama claiming that the BRAIN Initiative may improve ‘the lives of not just millions, but billions of people on this planet’ (Office of the Press Secretary, 2013). These projects (the BRAIN Initiative in particular) are closely entwined with corporate interests, with technology giants such as Microsoft, Google, and IBM looking to build close partnerships due to the great commercial potential on offer, while the military-industrial complex can also always be relied upon to hold a stake in developments in biotechnology (see Moreno, 2007). Not all working scientists, technicians, and other stakeholders are comfortable with these efforts though (see Waldrop, 2013), while others look to hose down any flagrant promissory hype surrounding their potential (Rose, 2015: 3). Such initiatives are joined by other ventures, including the (dystopian-sounding) ‘Neuropolis’ research and PR facility in Lausanne, Switzerland, which is ‘dedicated to neuroscience and the conquest of the brain’. (Ecole Polytechnique Federale De Lausanne, 2012). Through the rhetoric of ‘conquest’ the brain is construed as a terrain to be discovered and subsequently colonised, a new frontier in which to plant epistemic flags.

Recent years have also seen the emergence of what might be described as ‘soft’, consumer-oriented commercialisation of the neurosciences (Thornton, 2011b). While more standard laboratory research in the life sciences and related industries suffered a downturn following the global financial crisis (Amara et.al, 2011), the same period has seen the emergence of a suite of ongoing interests claiming to incorporate neuroscience-based insight into their products and services. For instance, business-facing enterprises in ‘neuromarketing’ proclaim to enable clients to access the ‘buy button’ inside the consumer’s brain (see ‘Sales Brain’), while EEG-based ‘mind-reading’ head sets are marketed with pitches geared around how we might conveniently incorporate new technosomatic capacities into the habits of everyday life (‘Emotiv’). Others offer services in lie detection (‘No Lie MRI’), or hawk ‘brain fingerprinting’ as a high-tech security measure (‘BrainWave Science’), or tout the potential of oxytocin and other hormonal regulators as chemical compounds safely ingestible in the service of enhancing feelings of trust, bonding, and intimacy (‘Oxytocin Factor’). The claims, products, and services of these commercial enterprises come with wildly varying degrees of efficacy and plausibility, along with generating new areas where regulatory and ethical oversight is required (Caulfield and Ogbogu, 2008). In any case, market analysts predict great capital potential in the new ‘brain-industrial complex’ (Duncan, 2008; see also Giordano, 2011).
In turn, many lay subjects have come to take an interest in neuroscience as a form of entertainment, something ‘exciting’ and ‘consumable’, while other observers are more circumspect and cautious, or remain disinterested (Pickersgill, Martin and Cunningham-Burley, 2015: 883, see also Johnson and Littlefield, 2011). Of particular note in this regard is the response of one lay interviewee in a study conducted by Pickersgill, Martin and Cunningham-Burley (2015: 884), who sharply skewered the proclamations of popular neuroscience output in characterising it as ‘evangelical’. This observation usefully captures the way in which the fostering of hopeful expectations abounds in the communication of neuroscientific insight and its potential applications, with discourses regularly infused and inflated with the hope that we can better realise our latent cognitive capacities, and may even finally overcome conditions of atypical neurology and neurodegenerative disease (Hedgecoe, 2010; Hedgecoe and Martin 2003; Brosnan, 2011; Pickersgill, 2013b: 329-32; Pitts-Taylor, 2010; Thornton 2011b; Vander Valk, 2012a: 3-5). In part, this evangelistic sentiment is attributable to the accelerating corporatisation of the neurosciences, where the moral hazards that accompany commercial interests may result in ‘inflated claims as to the translational potential of research findings’, resulting in speculation that not only proffers but actively seeks to produce a particular disposition within subjects regarding how we may incorporate the ‘neuro’ into our everyday practices (Rose and Abi-Rached, 2013: 20). Commercial interests push to acquire and patent intellectual property where profit potentials are most likely, the corollary of which is that ‘if researchers know that there is no money to answer certain questions, they may not even bother to ask them’ (Lexchin, 2001: 1450).

This view of the brain as a site of production and consumption frames the emerging neurosciences within decidedly contemporary contingencies, whereby we seek practical applications for what are considered the most pressing issues today amidst the hyper-individualism of late capitalist society. We should thus consider the possibility that entire avenues of thinking about the neurological subject may atrophy and wither due to their incommensurability with current overarching imperatives. However, with the neurosciences still so young, and our understanding of the brain still so meagre, we should resist narrow epistemic co-opting by interests that seek to import what may otherwise be fleeting socio-historical anomalies into the brain terrain.
Tracing the Western hyphen-ethic

Our modern ‘self’ – in the Western world at least – is commonly represented as though it were an immutable property, neatly cleaved from the contextual milieu in which it realises its selfness. We espouse our personal autonomy, our free will, and the comportment and cultivation of bodies and brains that are thought to be our inalienable and inviolable own. We may consider our ontological boundedness and sense of narrative continuity as part of our innate, natural constitution, an essential quality, rather than the outcome of the perpetual dialectic between socio-technical assemblages and cultural constructions (to grossly oversimplify the debate of millennia). So, observes Rose (1998: 1), despite ‘our current confused ethical climate’ the one proposition that seems to always remain ‘beyond reproach’ is the assertion of our selfhood and its associated capacities, potentials and obligations. Yet, as Clifford Geertz (1984: 126) has famously observed, the idea of the Western self ‘as a bounded, unique, more or less integrated motivational and cognitive universe’ is ‘a rather peculiar idea within the context of the world’s cultures’. The gradual enfranchisement of the individual agent, the formalisation of bureaucratic institutions, the rise of complex self-perpetuating economic mechanisms upon which we are interdependently reliant, and various other levers of rationalisation all require subjects that can be efficiently governed, measured, and who ideally will take such responsibilities upon themselves as acts of both ethical citizenship and ongoing affirmations of selfhood. This creates the subject as a discretely bounded property, at least with regard to assessments of their conduct. The problem, suggests Michel Foucault, is when we essentialise this boundedness:

‘The political and social processes by which the Western European societies were put in order are not very apparent, have been forgotten, or have become habitual. They are a part of our most familiar landscape, and we don't perceive them anymore. But most of them once scandalized people. It is one of my targets to show people that a lot of things that are a part of their landscape – that people think are universal – are the result of some very precise historical changes. All my analyses are against the idea of universal necessities in human existence. They show the arbitrariness of institutions and show which space of freedom we can still enjoy and how many changes can still be made.’

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3 This oft-made observation of our anomalous constitution as modern subjects has been articulated by many notable scholars across various disciplines, including Clifford Geertz (1984), Charles Taylor (1989), Michel Foucault (1970), Nikolas Rose (1990, 1996), and Ian Hacking (2002), amongst a great deal many others.
This does not necessarily mean we should bemoan the ‘arbitrary’ qualities of our ontological landscapes, for such frameworks are inescapable in orienting ourselves in the world. However, in the act of ‘forgetting’ their arbitrariness, rendering them unto habit, and then essentialising such constructs as timeless and universal qualities of our being, we risk ossifying that which needs to remain malleable in order for us to parse new spaces of freedom amidst the rapid shifts of late modernity. Though we commit this universalisation fallacy time and time again we have eventually chanced upon ways of overturning the affixing of the self to narrow and anomalous contingencies. The turn to the neurosciences presents another challenge of this kind, albeit a challenge made more difficult by the special status accorded to the brain – that ‘space inside the skull’ (Beaulieu, 2000) to which we gaze as the fulcrum of our being – that is then combined with the acceleration of translational imperatives. Altogether, this creates a confluence of factors that heightens the urgent need for critical oversight and new forms of productive collaboration.

In this way I am concerned with what qualities may appear to be both ‘essential’ to our species-being and yet also ‘imperative’ to maintain or even enhance, so that only by becoming more and better ‘human’ (in the estimation of certain gazes, claiming epistemic privilege) may we raise our collective wellbeing and avert potential catastrophes of our own making. In contrast to these calls for neuro-enhancement as a societal imperative, I explore how generative lines of subjectivity may be kept open, in part by ensuring that current conceptions of our ontology and agency do not become rigidly bound within contemporaneous frameworks, which threatens to occur under the rationale that cool, authoritative gazes have now, or will soon, reveal our ‘true’ selves. Such claims foster notions of ‘neuro-realism’ and ‘neuro-essentialism’ that too often are either exaggerated, or obscure the artificiality of the empirical constructs by which such knowledge is produced, or are accepted with overly generous credulity when they are translated into popular discourses (Racine and Costa-von Aesch, 2001, see also Racine et al. 2009; Ramani, 2009; Racine et al. 2010; Thornton, 2011b; Whiteley, 2012; O’Connor and Joffe, 2013; Pickersgill, 2013b).

We should look to trace these ‘recurrent histories’ (Canguilhem, 1988) and lines of ‘historical ontology’ (Foucault, 1984; Hacking, 2002: 1-26) with a watchful eye, noting how knowledge claims are variously produced and then folded through assessments of our conduct. In so doing we can craft means of thinking against the present (Rose, 1996: 18), illuminating how the frames, gazes, and rhetoric of scientific inquiry contribute to the ongoing project of ‘making up’ subjects (Hacking, 1985). Additionally, we should look to interpose a sociological
perspective that strives not only to resist the epistemic overreach of other disciplines (as it seems we sociologists are so often relegated to doing), but also to contribute to ways in which the neurosciences may be productively entangled with neighbouring disciplines similarly concerned with the self, subjectivity, and wellbeing. A creeping process of narrow reductionism evident in certain ambitious sub-fields can thus be reoriented and supplemented with new rigour and promise by recognising and fostering the multiple ‘cohabitation of everyday ontologies’ (Ortega, 2009: 440). Given current trends it appears we are increasingly expected to adopt a constraining self-discipline of instrumentalising our brains and translating cognitive capacities into contemporary value-bearing applications, a stance that presupposes ‘the supervenience of the self as an organizing system that can reflect on and work with the idiosyncracies of the brain and the body it inhabits’ (Kirmayer and Gold, 2012: 317). It would appear that we lack requisite epistemological humility in presuming to know how our brain may best be cultivated, and so are laden with assumptions that risk inadvertently paralysing lines of possibility not yet even glimpsed (Connolly, 2002; Wilson, 2004; Malabou, 2008).

Our orientation to our biology, as commonly enjoined upon us today, ‘is not to assert destiny or fatalism, but opportunity’ (Rose, 2013: 5). The brain and – by the now common extension – the self, are open to belaboured upon, optimised, and repurposed, so that we may be better ‘realised’ and made ‘amenable to intervention and projects of control’ (Rose, 2013: 5-6).

Through this ethical and epistemic framework the brain is viewed as the terrain by which we may come to know the ‘key truths’ about ‘human nature and social life’ (Pitts-Taylor 2010: 635). This perspective is then folded into contemporary ideals of how we may come to better understand and utilise our brains towards desired ends, in particular through notions of ‘plasticity’ in popular discourses that tout our limitless potentiality and indeed the moral obligation to undertake this perpetual labour (Pitts-Taylor, 2010: 636-649). We are called to cultivate our best neurological selves through an apparently democratic and meritocratic ethic informed by technosomatic techniques.

Nurturing of this neurological self also extends to those for whom one cares, with emerging discourses saturated with an ethic of ‘protecting’, ‘feeding’, and ‘loving’ the brains of our children as a parental obligation in ensuring their wellbeing and maximising life chances (O’Connor and Joffe, 2013; Edwards, Gillies and Horsley, 2015; Bessant, 2008; Kelly, 2012; Macvarish, Lee, and Lowe 2014; Thornton, 2011a). Furthermore, much of this popular rhetoric drags along with it forms of ‘benevolent sexism’ that can further entrench norms otherwise open to contestation by grounding them in scientific facticity (O’Connor and Joffe, 2014a). An ethos of brainhood can therefore prove burdensome and constraining, despite often coming wrapped in the rhetoric of empowerment and self-knowledge. Many lay subjects, while often
indifferent or only superficially engaged with findings from neuroscience (Pickersgill, Cunningham-Burley and Martin, 2011), do exhibit a sense of increasing anxiety over the brain as a site of potential dysfunction, thus generating an ethic of tending to and cultivating one’s brain in the hope of averting the onset of neurodegeneration (O’Connor and Joffe, 2014b: 635-42; O’Connor, and Joffe, 2015: 15).

My concern regarding these developments is that we may lose a ‘conatic hope’ (Hage, 2003) found in not having the bounds of our capabilities and paths of self-actualisation rigidly affixed in our molecular assemblies. Perhaps – to take a Deleuzian and Spinozan line – only in not presuming to wholly comprehend what a body and a brain can do might we retain the capacity to be enlivened by the perpetual possibility of stretching our subjectivity into new terrains. By resisting the too-neat cleaving and parsing of the various substantialities that constitute our being we open ourselves up to the possibility of new generative entanglements (Connolly, 2002; Wilson, 2004; Malabou, 2008; Braidotti, 2013; Fitzgerald and Callard, 2015). However, observes Slavoj Žižek (2012), if we insist on plumbing the supposed depths of ourselves in a thoroughly mechanistic way we will inevitably stitch together something less than ‘humanity’ but also certainly not equivalent to ‘nature’. Somewhere in this process the initial ends of such an ethic melts into the ether, replaced by a corrupting ‘hyphen-ethic’:

‘In short, what gets lost here, in this hyphen-ethics, is simply ethics as such. The problem is not that universal ethics gets dissolved in particular topics but, on the contrary, that particular scientific breakthroughs are directly confronted with the old humanist “values” (say, how biogenetics affects our sense of dignity and autonomy)... The main consequence of the scientific breakthroughs in biogenetics is the end of nature. Once we know the rules of its construction, natural organisms are transformed into objects amenable to manipulation... Crucial here is the interdependence of man and nature: by reducing man to just another natural object whose properties can be manipulated, what we lose is not (only) humanity but nature itself.’

Žižek (2012: 110-1)

But if the emerging neuro and biosciences are ‘confronted with old humanist values’ we should also briefly acknowledge here that neuroscientific efforts are likewise funnelled through new humanist ideals and frameworks of neoliberalism, of life and its instrumentalisation as potentials for ‘surplus’ amidst the rationalised creation of ‘biovalue’ (Cooper, 2008; Waldby, 2002). Our neurological capacities thereby become new terrain for the exercising of ‘accumulation strategies’ of production and perpetual growth (Harvey, 2000).
This proliferation of hyphen-ethics – occurring in tandem with the ongoing creation and extraction of biovalue – has resulted in some hand-wringing amongst classical humanists and bioconservative thinkers. For example, Francis Fukuyama (2002: 10) – cashing in his cachet by (lamely) contradicting his well-known earlier thesis – has referred to our current path towards trans- or post-humanism as ‘the recommencement of history’, arguing that the progress of the emerging life sciences and resultant technologies might fundamentally change our conceptions of rights, needs, and interests, and so threatens the hard-won consensus of ‘equality’ that underpins liberal democracies. Jurgen Habermas (2003) has similarly argued that potential interventions upon ourselves through new forms of ‘liberal’ eugenics may undermine our ‘species ethic’ and the shared beliefs that ‘guide our identification as human beings’ (38-9), one collective belief of which – according to Habermas – is the freedom from ‘alien determination’ (86) in how our bodies are constituted. According to this view only a subject who knows that their functional assembly was not in any way artificially ‘determined’ by another will feel sufficiently enfranchised to consider themselves as autonomous subjects. Habermas’ argument is grounded upon what he perceives is the excessive drive of instrumental rationality operating under the guise of humanist ideals, through which we risk becoming steadily disaggregated into a bundle of value-bearing capacities, repurposed into falsely autonomous selves complicit in our own dehumanisation. Political philosopher Michael Sandel (2007: 9) also expresses caution about what may be enacted ‘when science moves faster than moral understanding’. Sandel (2007: 26-7) fears that we are now subject to a Promethean ‘hyper-agency’, a ‘drive to mastery’ where we may lose ‘an appreciation of the gifted character of human powers and achievements’ (see also Kass, 2002).

However, while I am sympathetic to this general concern I do not find appeals to our ‘species ethic’ or the ‘giftedness’ of our human qualities convincing, for too often it seems such positions hinge on classical humanist ideals that have largely run their course and no longer hold ‘true’ given our increasing understanding of the immensely complex entanglement of ‘nature’ and ‘nurture’, ‘mind’ and ‘body’, and the ‘social’ and the ‘technical’ (Latour, 1993; Connolly, 2002; Braidotti, 2013). More expansive ways of thinking the neurological subject and its relation to the external world are needed. To this end I will now provide an overview of those scholars from the social sciences and humanities who seek to become productively ‘entangled’ with the neurosciences.
Getting cautiously entangled

In this section I will address recent developments regarding the engagement of social scientists and humanities scholars with neuroscience. In particular this thesis follows in the vein of those who adopt a critical but not inherently oppositional stance towards the emerging life sciences. Given the increasing epistemic reach and public influence of the neurosciences it is clear that we in the social sciences and humanities can no longer indulge an attitude of aloof opprobrium. As cultural and cognitive sociologist Karen Cerulo (2010: 115) points out ‘the brain is hot ... and cognitive neuroscientists have it’. Step by step, epistemologically imported into the brain terrain are understandings of morality, memory, emotion, rationality and reason, amongst other weighty properties of being, leaving those of us in the social sciences and humanities at the risk of being left behind if we are unwilling to reach across the disciplinary divide. This task is urgent, for as will be shown in the following two chapters an influential group of empiricists are moving rapidly towards constructs of the ‘ideal’ subject that may prove to be unduly diminishing to our self-conception, and neglects the opportunity for productively rethinking the bounds of selfhood, agency, and volition. If this proves to be the case, then not engaging with the neurosciences and related fields now may generate a much harder task of restoring these lines of possibility in the future (Pitts-Taylor, 2014: 995-6; Lizardo, 2014).

Moreover, there are ways out of our sometimes antagonistic interdisciplinary struggles and towards more dynamic collaborations. As such this thesis looks to draw upon those scholars who I would describe as ‘cautiously entangled’ with the neurosciences. This group houses academics from a number of fields, including: sociology, geography, bioethics and practical ethics, various sub-fields of philosophy, along with critical and feminist theory. Further afield we should also consider what insights literary theorists, novelists, artists, and other humanists of this ilk might contribute to a productive, generative entanglement. A recent manifesto-of sorts for this approach can be found in Des Fitzgerald and Felicity Callard’s (2015) call for ‘experimental entanglements’. Fitzgerald and Callard argue that we in the social sciences are too often stuck in dogmatic stances that do not attempt to traverse disciplinary divides, despite the fact that once seemingly incommensurable schools of thought are now open to forms of fruitful reconciliation and collaboration. Such an unwillingness to properly engage with the new life sciences often ultimately results in either hollow, straw-manning critique or shallow, naïve enthusiasm (Fitzgerald and Callard, 2015: 9-13). Instead, we need not presuppose our various approaches simply with reference to what disciplinary badge we happen to be wearing in any research encounter. Too often, in hastily looking to pin the
pejorative ‘reductionist’ label, we only further contribute to a stultifying, antagonistic, and blinkered approach that fails to recognise ‘much of what is most analytically interesting about neuroscience – including its relationship to other domains, and how those relationships might be re-imagined’ (Fitzgerald and Callard 2015: 10).

Of course this is not to say that we should jettison our theoretical rigour. Indeed Fitzgerald and Callard (2015: 11-3) are quite scathing towards the ‘ebullience’ shown by some social theorists, who they believe have been overly credulous in uncritically and loosely adopting neuroscientific insights in convenient, but ultimately misleading ways. Such cherry-picking of fashionable research and buttressing of pre-existing stances often emerges through cursory readings of ‘crossover’ or ‘third culture’ texts, with social theorists skewing analysis by incorporating neuroscience at naïve levels in ways that prove a disservice to all parties across the disciplinary gamut (Fitzgerald and Callard, 2015: 11). Alternatively, Fitzgerald and Callard (2015: 13) suggest that we look towards ‘locating a conceptual space’ that does not fall into detached, post-hoc critique or naïve, overly deferential ebullience. To this end, they endorse striving towards an ‘epistemic parity’ that would ‘grant the same kind of sustained and critical attention to neurology and neurobiology as they do to the interpretative social sciences’ (Fitzgerald and Callard, 2015: 13).

A measure of rapprochement is needed as both the sociocultural and the neurological spheres recognise the complex entwining of their once stubbornly provincialised bases. Prior to recent provocative calls for ‘entanglement’, Nikolas Rose (1990: xvi, see also 2013: 13-4) similarly lamented ‘the baneful disciplinization of the human sciences’, while recent interdisciplinary collaborations have likewise encouraged our willingness to practice a form of ‘disciplinary double consciousness’ (Littlefield et al., 2014; see also Fitzgerald et al., 2014). Admittedly this renders such transdisciplinarians susceptible to the possibility that they may find themselves

4 For an example of this naïve ebullience see Romand Coles’ (2012: 179) lofty hopes inspired by recent research into mirror neurons:

‘I venture that recent work on mirror neurons illuminates the character of our capacities for a politics of resonant receptivity in ways that help us not only better comprehend the damages of our contemporary order, but also suggest alternative ethical-strategic directions for organizing a powerful movement toward radical democracy.’

Such applications of our neurology to increasingly complex socio-political phenomena speak to the translational promise of the neurosciences, a sense of promise often in need of restraint. See also Jan Slaby, Philipp Haueis and Suparna Choudhury’s (2012: 60-5) similar critique of poststructural critical theorists (such as William Connolly), who they suggest are ‘too readily, prematurely, and uncritically’ embracing the neurosciences. Fitzgerald and Callard (2015: 11-3) likewise chastise Catherine Malabou and Brian Massumi for work they deem to only constitute a fleeting and convenient engagement with the actual practice of empirical cognitive neuroscience.
‘never at home’ amidst the continuing clash and clamour of various epistemological and ontological worldviews (Littlefield et al., 2014: 8). These willing collaborators invite the purgatorial existence of being unfairly pinned as contrarian figures (Littlefield et al., 2014: 8), and must resign themselves to operating within an ‘ambiguous intertwining of knowledge, affect and power’ (Fitzgerald et al., 2014: 3), wedged in attempting explorations that feel ‘intensely ambivalent, transgressive’ (7).

Nevertheless, with optimism and in good faith we should look to the neurosciences as ‘a flash point for transdisciplinary exchange’ (Littlefield and Johnson, 2012: 5). In doing so we may realise ‘a more affirmative relation’ (Rose and Abi-Rached, 2013: 2), and negate the unproductive and overstated pessimism of those who believe our ‘essential’ ontology as human beings is under threat thanks to the new life sciences (see Kass, 2002; Fukuyama, 2002; Habermas, 2003; Sandel, 2007). With this approach we may discover that recent transdisciplinary efforts of many neuroscientists are, like many social scientists, humbly ‘struggling toward a way of thinking in which our corporeality is in constant transaction with its milieu’ (Rose and Abi-Rached, 2013: 2). In finding these transdisciplinary allies we may be able to unite once rigid and impermeable demarcations of intellectual inquiry into new microassemblages of experimentation. Such experimental constructs are predicated on not presuming to know they will ‘reveal’, and therefore are receptive to generating forms of ‘epistemological and ontological excess’ through which conceptions of the neurological subject may be radically reconfigured in ways we cannot yet envisage (Fitzgerald and Callard, 2015: 3). This promises not just to undo some of the theoretical constraints we have placed upon ourselves in looking to elucidate our neurology, but may also contribute to rethinking the subject in ways that accord greater recognition to neurological difference.

Expansive entanglements

A newly expansive approach to rethinking the neurological subject will require means by which to ground our inquiries in mutually navigable terrain. To this end some novel forms of theoretical commensurability may be required. In this spirit some scholars look with optimism to become productively entangled with the neurosciences through feminist, poststructuralist, and posthumanist approaches. These engagements are often grounded in the equal parts humbling and liberating admission that
‘Crudely put, in all these disciplines, it is found that “we” humans are not the autonomous, transcendental, preferably male subjects that we were once made out to be. Instead, we must learn to see ourselves as hybrid blends of flesh, mind, materials, machines, information, values, institutions, relations, and processes.’

Van Den Eede, 2015: 152

In contrast to those who aspire to better realise our ‘most human’ quality of our rationality (see Chapters Two and Three), these anti-humanist theorists – ‘anti-humanist’ at least with regard to espousing our ‘hybrid’ ontology – discern an opportunity for radical reconsideration of our being, in part through explorations of our neurology as it is ‘imbricated’ with our bodies and the external world (Wilson, 2015: 18). This turn towards expansive and imbricated neurology hinges on recognising that the brain – as some supposed substantiation of ‘nature’ – is not ‘prefigured by final causes’, nor a property of ‘latent perfection seeking homeostasis’ (Rabinow, 1996: 108). Rather, argues Paul Rabinow, only once we understand the ‘polyphenomenality’ of life, might we be able ‘to facilitate, encourage, [and] accelerate its unfurling’ as vital entities endowed with ‘thematic variation’.5

One way in which Rabinow’s ‘polyphenomenality’ is being ‘unfurled’ is through attempts to reconcile lines of inquiry once separated on the now possibly specious grounds of their incommensurability. Recent broadly monistic, psychoanalytic, and new materialist critiques, such as Adrian Johnston’s and Catherine Malabou’s Self and Emotional Life (2013: ix), attempt to wrangle together the affective neurosciences with psychoanalysis and continental philosophy, girded by the claim that ‘no genuine materialist philosophy legitimately can neglect the natural sciences generally and that no authentically materialist theory of subjectivity defensibly can sideline the life sciences specifically’. Johnston and Malabou (2013: x-xi) argue that the old ‘alibi’ of avoiding engagement with the life sciences for fear of becoming complicit in dehumanising reductionism is no longer tenable, and simply amounts to ‘hollow excuses of a tired old antinaturalism’. With this new transdisciplinary spirit, much of Self and Emotional Life is dedicated to untethering notions of agency and affect from the neatly bounded individual agent, and instead granting such qualities their own trajectories and volitions (see also Brennan, 2004). By unsticking cognition from iconic conceptions of the classical humanist subject new possibilities emerge for exploring the folds between nature and culture, and extending the cognitive subject beyond the mechanisms inside the cranium.

5 Here I must credit Catherine Waldby’s (2000) tracing of contemporary iconographic approaches to rendering the ‘essential’ properties of our beings ‘visible’ for drawing my attention to this Rabinow passage.
Elizabeth Wilson’s *Psychosomatic* (2004) also provides guidance in how we might allow neurology to break the confines of the skull. More specifically, this text rehabilitates Freud’s early work in neuroanatomy prior to his psychoanalytic breakthroughs, so as ‘to extend the somatic beginnings of psychoanalysis back further than hysteria – further chronologically, further phylogenetically’ (Wilson, 2004: 1). Through this reconciliation of Freud’s early and late work Wilson (2004: 5) cuts across current conceptually stagnant divides between our nervous system and our ‘ideational contortion[s]’ by not presuming molecular mechanisms that underlie cognition to be deterministic, fixed processes. Rather, suggests Wilson (2004: 21), if we consider the ‘molecular’ and the ‘ideational’ as mutually constitutive and ‘obliging’ towards each other, then an array of possibilities opens for differing notions of embodiment and extensions of cognition. This thesis will demonstrate that too often it appears that a small coterie of influential advocates of the ‘neuro’ – in their translational ambition – are overly reductionist with regard to these ‘ideational contortions’, working with narrowly derived and socio-historically contingent notions of the subject that they seek to affix in the immutable materiality of the brain. Consequently we ‘reduce’ that which is already narrow, anomalous, and contingent, and thereafter epistemologically cordon it off from critique. However, through Wilson’s (2004: 13-16) reconceptualising of cognition we may see ‘the potential in the neurosciences for reinvention and transformation’, in part by recognising that ‘forces of influence and determination are more mutually entangled than the critics of neurological determinism have hitherto acknowledged’.

Similarly Rosi Braidotti (2013: 61) aspires to assembling a new postanthropocentric subject by edging us towards a broadly Spinozan monism, and away from the hard cleaving and bounding of cognition that forces all that we deem to constitute selfhood inside the skull. Through this anti-humanist stance we may come to see that what was once previously thought to be biologically immutable and inert as now ‘vital’ matter, imbued with volitional sway in networks of lively mediation. This rich vein of thought finds allies across the disciplinary divide in neuroscientists such as Antonio Damasio, whose work on the role of affective volitions and somatic markers greatly aided the turn to affect within the social sciences and humanities during the 1990s and 2000s (Damasio, 1994, 1999, 2003; Wilson, 2004: 83, 91, 111; Johnston and Malabou, 2013: 6; Braidotti, 2013: 56-7). Recognition of this complexly mediated and affectively-guided subject, says Braidotti (2013: 52), could serve to produce a subject ‘worthy of our present’ by eschewing the now restrictive binds of classical humanism, while also rejecting the narrowly rationalised drives of late capitalist neoliberalism.

Underlying the general impetus of this thesis then, is the cautious edging towards newly emergent ways of conceiving the neurological terrain, where ‘materiality is always something
more than “mere” matter: an excess, force, vitality, relationality, or difference that renders matter active, self-creative, productive, unpredictable’ (Coole and Frost, 2010: 9). This task must be undertaken with care, for overly speculative and/or superficial engagement of the social sciences with the neurosciences risks committing the same kind of naïve ebullience or strawman critiques that Fitzgerald and Callard (2015) have firmly warned against. That said, there are some influential pockets of intellectual inquiry – particularly in the emerging sub-discipline of neuroethics – that I will argue lack the requisite humility and restraint, and threaten to foment ways of considering the neurological subject that may prove harmful. It is these scholars who I will look to thoroughly critique in the following two chapters.

But critique without the offer of an alternative path is ultimately a hollow endeavour, and lacks the intellectual generosity required to foster experimental entanglements. Thus weaving throughout this thesis is the attempt to move in steady increments away from widely prevalent ideals of the ‘hypercognitive’ subject (O’Neill, 1997; Post, 2000), and to offer one that is more affectively driven and less rigidly bound to notions of the unified self, with multiply mediated and substantialised forms of cognition extended through the body and external environment. Teresa Brennan’s (2004) The Transmission of Affect offers a useful entry point into such a ‘generous’ new framing of cognition in demonstrating how some properties of the self typically considered intangible, elusive, and ineffable can take on a highly visceral quality, a motion and causal agency, but only if we can resist pre-emptively excluding them when assembling the modern subject endowed with ‘high’ cognition. Regrettably, argues Brennan (2004: 18-19), we have typically operated on the basis that ‘to be a worthy object of study, the individual has to be severed from affective connections with the surrounding environment and others in it’. Such hypothetico-deductive constructions where, for example, our ‘ethical’ qualities are framed within our ‘higher’ rational capacities and entirely housed within the brain, speak to ‘primarily modern and Western approaches … that assume that the individual is an energetically self-contained or bound entity, whose affects are his or hers alone’ (Brennan, 2004: 24).

This insistence on the individualised and ‘bounded’ subject brings with it normative expectations to conscientiously manage one’s affective state so as to avert its undesired intrusion upon higher cognition. Those who are neglectful in managing their affects in ways aligning with overarching expectations will be ascribed a ‘borderline’ status, seen to be ‘susceptible as well as liable to “leakage”’ (Brennan, 2004: 26), or to being ‘taken over’ by affect-laden dispositions (15). Yet these ascriptions fail to recognise that such an ethic of affective self-care is a ‘culturally specific idea’ that ‘presupposes a self-contained individual’ (Brennan, 2004: 25). The emerging cognitive sciences, suggests Brennan (2004: 63), are so
enamoured with importing prevailing societal dictates into the neurological terrain that they risk becoming ‘caught up in the very process it should be analysing’. The result is the elevation and emulation of the subject capable of conscientiously quelling their affects, and thus ‘self-containment is not only a delusion but also an achievement’ (Brennan, 2004: 63). Undoing these hard ascriptions and narrow containments of cognition may allow for new possibilities of subjectivity less dependent on the questionable premise that we are the Cartesian authors of our volitions.

Through this lies the (tentative and cautious) possibility for rethinking the political sphere, perhaps by way of a new micropolitics informed not by the presumption of singly unified citizen subjects, but rather cognition as interpersonal and extra-subjective; a politics where coalitions are formed not between single agents but through transmissions of affect. Such aspirations are admittedly speculative and exploratory, but nevertheless helpful entanglements of thought as we contemplate how best to realise our hybrid ontologies.

William Connolly’s *Neuropolitics* (2002: 2) was amongst the first to present such a thesis, encouraging conciliation and amiable entanglement with the neurosciences by reminding social and cultural theorists that

‘... in their laudable attempt to ward off one type of reductionism too many cultural theorists fall into another: they lapse into a reductionism that ignores how biology is mixed into thinking and culture and how other aspects of nature are folded into both. Every theory of culture bears an implicit relation to biology and biological theory. The more cultural theorists try to avoid this gritty terrain, the more they either implicitly recapitulate one of two classical conceptions of nature that have long contended for primacy in Euro-American life or levitate toward a disembodied model of thinking, culture, and ethics that is difficult to sustain.’

Connolly is not overly credulous towards the neurosciences though, and stresses that there will likely always remain a gap between the observation of the physiological brain-in-action and the phenomenological experience of the subject. The task, then, is ‘not how to eliminate the discrepancy, but how to respond to it’ (Connolly, 2002: 6). This ‘zone of indiscernibility’ presents opportunities

‘... to augment intellectualist models of thinking and culture with a perspective that appreciates the dense interweaving of genetic endowment, image, movement, sound, rhythm, smell, touch, technique, trauma, exercise, thinking, and sensibility. Thinking is implicated in body/brain/culture networks that extend well beyond the skin of the thinker.’
In this reconfiguration ‘cognition’ is not bound within the skull, but rather is dispersed through obliging networks, shifting in substantiability as it extends from one terrain to another. However, not all social theorists are on board with Connolly’s attempts to use the neurosciences to pose new potentials for micropolitics, and admittedly Connolly’s *Neuropolitics* does have a frustratingly nebulous quality that often comes with radical transdisciplinary works, particularly those that lack a firm grounding across all the bodies of knowledge they seek to render commensurable (see Slaby, Haueis and Choudhury 2012: 60-1; Johnston, 2012: 157-8; Fitzgerald and Callard, 2015, for similar critiques). Nevertheless, we should recognise the potential that lies in not posing the relation between phenomenology and materiality as the task of reducing the unwieldy former to the comforting tangibility of the latter, but rather of their co-constitutive quality, which in turn has implications for how we conceive of the self.

Not only might this require a new language by which we approach neurology and the self, but it also may require sacrificing some sacrosanct ideals by which we have constructed the rights and responsibilities of the modern subject. For example, in discussing Benjamin Libet’s (1985) much-debated study of ‘readiness potentials’ – and the subsequent supposed implications for ‘free will’ – philosopher Brian Massumi suggests that, rather than seeing the ‘gap’ of will within a single, localised being, we might instead reconsider the very notion of willing. Here, will may be seen as a potentiality that swells through and between subjects, rather than bound as some Cartesian substance contained within a single agent. In this way Libet’s purported temporal ‘gap’ between when ‘I’ – as conscious agent – effect an action *after* my body signals a matching potentiality is not ‘empty’ but rather

‘... overfull, in excess of the actually-performed action and of its ascribed meaning. Will and consciousness are *subtractive*. They are *limitative*, derived functions that reduce a complexity too rich to be functionally expressed.’

Massumi, 2002: 29

If, then, we posit that ‘free will’, autonomy, personal responsibility, and all those other tent poles of modern liberal democratic societies are of value and still worth defending, this does not mean that we should seek to import them into the material by *insisting on intensively* finding their neurological correlates. To do so would be to counter-productively diminish and foreclose *both* these socio-political ideals and what it is we believe a brain can do. Each will be lessened in their potentiality if they are ontologically flattened and resubstantiated into the other through our currently crude methods. As Foucault (1988: 15) suggested, perhaps ‘there
are more secrets, more possible freedoms, and more inventions in our future than we can imagine in humanism’, and therefore we should resist the temptation to intensively work and affix our current contingencies of the subject and its wellbeing into the brain terrain.

Entanglement through neuronarratives

Lastly, in this overview of those seeking productive ‘entanglement’ with the neurosciences, I will briefly address efforts in literary fiction that explore the turn to the neuro. This will be of particular relevance to Chapter Four’s discussion of attempts to mimetically capture the subjective experience of dementia through fiction, but also speaks more broadly to the recent emergence of transdisciplinary efforts that seek new ways of conceiving the neurological subject through the arts and humanities.\(^6\) Literary works that sensitively explore the interiority of neurodegeneration, I will argue, have the potential to shift our orientation to dementia – seemingly the ailment most characteristic of our modern times – in ways that can accord sufferers greater understanding and recognition, and thus aid in the development of ways by which we can reaffirm selfhood in a person undergoing cognitive decline.

This form of ‘entanglement’ requires rehabilitating narrative models of therapeutics in a way that cuts across both biomedical and identity contexts. There is a rich but somewhat neglected history to draw on here. In correspondence with Oliver Sacks, the neurologist A.R. Luria lamented the current dominance of ‘classical’ science, where quantitative data derived from rigid experimental constructs and the disaggregation of the subject into precise metrics of observation (or other comparably fixed and immutable measures) came to be preferred over more holistic narratives (Sacks, 1985: x-xi). Sacks similarly endorsed this potential return to developing richer narratives of neurological difference over the ‘objective’ cleaving of condition from person, considering the latter approach grossly insufficient in capturing the enormously complex entwining of neurology with subjectivity. Indeed Sacks is perhaps the best known proponent of ‘romantic science’ as a means of both therapeutic care and advocacy to others, and in recent years advocates of ‘neurodiversity’ have taken up this return to the narrative model of neurological difference (see, for example, Draaisma 2009a; Shostak and Waggoner, 2011; Birge, 2012). Relatedly, and on a more quotidian level, a good deal of recent empirical work has explored the way lay subjects incorporate neuroscientific logics into their

\(^6\) See, for example, the curious output emanating from the ‘Hubbub’ research group, a transdisciplinary experimental collaboration led by Felicity Callard and funded by the Wellcome Trust.
ongoing narrative of self, with accessible neurological frameworks at times providing ‘an important explanatory and legitimating function for our participants to make further sense of their personal perspectives’ (Pickersgill, Martin, Cunningham-Burley, 2015: 885, see also Pickersgill 2013a, 2013b; Pickersgill, Cunningham-Burley, Martin, 2011; O’Connor and Joffe, 2013, 2014a, 2014b, 2015). This neuro-logic is neither totalising nor insignificant, and instead emerges as a resource of contextual orientation to be drawn upon by the subject, one narrative hook amongst several others upon which to hang conceptions of self and agency.

Parallel to this growing ‘mundane significance’ of the neurosciences in everyday settings (Pickersgill, Cunningham-Burley and Martin, 2011) has been ongoing debate within academia over the apparent divide between the ‘Two Cultures’ of the natural sciences and the humanities (Snow, 2001). Admittedly the invoking of Snow’s thesis has become an almost clichéd and trite presence in discussions of conflict between disciplines. Yet, as Lustig and Peacock (2013: 3) note, Snow himself (2001: 74-5) – in later revisiting his famous thesis – touched upon the coming collision of our self-conceptions with scientific endeavour, suggesting that the gaze into the ‘higher nervous system’ would ‘affect the way in which men think of themselves more profoundly than any scientific advance since Darwin’s’. Snow’s observation was remarkably prescient, and perhaps could only have been gleaned from someone who adeptly straddled the two cultures divide, as he did, in his prolific work as a physicist, novelist, and administrator.

It is through this question of how the molecular gaze has shifted our self-conceptions and subsequent habits and practices that novelists have found an intriguing way into neuroscience, exploring issues of interiority and subjectivity as they are now shaped by neuro discourses. Since the 1990s in particular there has been an emergence of a sub-genre within the literary canon – variously described as ‘neurofiction’ (Birge 2012), the ‘neuronovel’ (Roth, 2009; Gaedtke, 2012) or ‘neuronarrative’ (Johnson, 2008) – that looks to wrangle with the neurosciences and their accompanying worldviews and ethical injunctions regarding our conduct and wellbeing. Though a loose category such works are generally characterised by featuring protagonists living with some form of neurological difference, or through characters whose vocation is within the neurosciences and related fields. In either case a crucial element is the exploration of the interiority of these protagonists who are either neurologically atypical or otherwise particularly attuned to see the world through a neuro lens. Many neuronovels also play up the two cultures divide, juxtaposing the dispositions of ‘hard’ neuro-practitioners against the ‘soft’ appeals of humanists (see, for recent examples, David Lodge’s Thinks (2001), Ian McEwan’s Saturday (2005) and Enduring Love (1997), Richard Powers’ The Echo Maker (2006) and Galatea 2.2 (1995), and Will Self’s Umbrella (2012)).
Some novelists and literary theorists have looked to the neurosciences and related life sciences with optimism, finding inspiration in exploring the interiority of characters who find themselves caught up in hyper-reflexive considerations of their own neurological makeup (see, for example A.S. Byatt, 2006, and Ian McEwan, 2003). Others similarly view the neuronovel as providing helpfully demonstrative explorations of ‘Theory of Mind’ and orders of intentionality between subjects, and so frame such works as providing a fertile, consoling, and instructive space in which we can ‘try on’ the consciousness of someone who may be cognitively ‘other’ (Zunshine, 2006). Fictional works, arguably more than other any communicative form, can generate representations of neurological difference imbued with ‘depth and thickness’ (Waugh, 2013: 24). In this way authors of fiction have sought to use the creative form as a means of promoting neurodiversity, in part by presenting rich interior worlds typically hidden from view (see Berger, 2014). Indeed, as Birge (2012: 92-3) observes, although non-fiction works can describe in great and exacting detail the external manifestation of cognitive difference ‘fiction is able to go one step further by representing the subjective viewpoint of people who might have a difficult time describing their own perspective narratively’. Therefore fictional works can serve as a form of gentle instruction and advocacy for those living with some form of cognitive disorder or difference.

However, while some authors and literary theorists see great potential in fiction as a means of fostering neurodiversity, others are more reticent, expressing concern that neurological difference is – in some cases – used merely as a prop for adopting an experimental form, or otherwise deployed in ways that appear to be exploiting a condition so as to address issues of far less importance.⁷ Along similar lines some authors and literary theorists look upon the increasing enthusiasm and authority granted to the neurosciences with wary concern, espying a forthcoming onslaught of eliminative materialist claims that may erase the experimental generativity of fiction and diminish wider understandings of subjectivity (Roth, 2009). Feted novelist Tom Wolfe (1996) was among the first to express this fear of the supposed irresistible reductionist march of the neurosciences, taking it upon himself to (hysterically) inform all of us that ‘your soul has just died’. This was based upon Wolfe’s (1996) assertion that neuroscience ‘is on the threshold of a unified theory that will have an impact as powerful as that of Darwinism a hundred years ago’. Suffice to say the ‘unified theory’ claim was completely overblown, and marks another example of the unhelpful and crude cross-disciplinary antagonisms that can derail new avenues of thought.

⁷ Such critiques are often found, for example, in addressing representations of characters with autism in popular literature and film (see Draaisma, 2009b; Burks-Abbott, 2008; Murray, 2008).
Still, a not entirely unreasonable apprehension remains amongst some literary thinkers, who fear they might lose their epistemic privilege regarding explorations of subjectivity, and in turn be less able to resist certain rigid constructions of the self. Jonathan Franzen (2012: 279) – whose novel *The Corrections* (2001) explored several aspects of our emerging sense of ‘brainhood’ (Vidal, 2009) – directly expresses this view in suggesting that the ‘very identity’ of the novelist ‘is threatened by such abject materialism’ of the neurosciences. This threat is captured in *The Corrections* through characters that commonly think of themselves with reference to their neurological functioning, particularly through one character who divides his sense of wellbeing into the micro-management of precisely delineated ‘Neurofactors’, measures which he obsessively monitors and finely adjusts in the cruelly ironic hope of warding off the onset of depression (Franzen, 2011: 139-140). This character practices a form of ‘objective self-fashioning’ (Dumit, 2004) that takes his sense of neurochemical selfhood to obsessive levels, counter-productively resulting in a pitiful form of self-estrangement and ‘misplaced concreteness’ of wellbeing (Waugh, 2013: 22, citing Alfred North Whitehead, 1925: 62). A cruise ship doctor in *The Corrections* captures this apparent sweep of the aforementioned ‘abject materialism’ and the colonisation of the humanities with his matter-of-fact therapeutic claims:

> ‘Fear of humiliation and the craving for humiliation are closely linked: psychologists know it, Russian novelists know it. And this turns out to be not only ‘true’ but really true. True at the molecular level.’

*Franzen, 2001: 318*

Thus, Franzen fears that – in the estimation of certain cool, eliminativist gazes – *real truth* is now inscribed upon the molecular brain, waiting to be revealed by these ‘pastors of the soma’ (Rose, 2007: 29). Overall this spectrum of ‘Neuro Lit Crit’ (Chace et al. 2010) broadly mirrors ongoing debates within neurosciences and surrounding fields, but does so in ways that may shed further light on what may be gained or lost in our turn to the neurosciences and its accompanying normative injunctions.

**Maintaining a critical stance**

While I wholeheartedly endorse the call for experimental and speculative entanglements as outlined above, there nevertheless remain some contexts where direct critique is required.
This pertains especially to the resurgent eliminative materialist stances mentioned in the opening of this thesis and, relatedly, to those who exhibit what might be described as a translational haste in seeking to alleviate evermore complex societal problems by digging deeper into our neuronal circuitry. Some current proponents of these potential applications, I will argue, have very narrowly defined parameters of the ideal citizen-subject, combined with inflated hope in the neurosciences to effect this ideal, which altogether serve to forward a research and policy agenda with such impunity that some staunch resistance may be necessary.

In many ways the recent emergence of ‘Critical Neuroscience’ as a sub-field of inquiry is in response to the growing confidence of some neuro-evangelicals in holding forth on elusive qualities of being, and proposing forms of neurological self-instrumentalisation as the best means by which we might optimally realise our ‘humanity’. Critical neuroscience is a relatively new field dedicated to tracing knowledge production practices in the neurosciences, their communication to wider audiences, and the outcomes of these exchanges with regard to our self-conception (see Choudhury et al., 2009; Slaby and Choudhury, 2012; Slaby, 2010; Kirmayer, 2012; Rose, 2012; Schleim 2014; Slaby and Gallagher, 2015). Advocates in this area express caution towards the hurried incorporation of neuroscientific understandings into understandings of selfhood, seemingly driven by a translational imperative of a collective ‘readiness and even “hunger” for self-objectification that is not easy to explain’ (Slaby, 2010: 398). This translational reconfiguring of ourselves occurs, in part, through claims to ‘hard’ veracity that are difficult to interrogate given the particular epistemic gaze of the neurosciences, along with various technical barriers to engagement pursuant (Slaby, 2010). New forms of epistemological consilience and commensurability are required to carefully manage how we incorporate the technosomatic into our lives, and thus critical neuroscience aims to be the measured and thoughtful linchpin between laboratory scientists, social scientists, private enterprise interests, policy makers, and the lay person, carefully monitoring the translations undergone as logics of the neuro work their way into and out of the lab.

Critical neuroscience is also opposed to the too-easy absolution of neuro-practitioners from the ‘analysis of contextual factors, historical trajectories, conceptual difficulties, and potential consequences’ of their work (Slaby, 2010). Rather, a critical neuroscience perspective poses that if neuroscientists wish to make knowledge claims in areas once within the purview of the social sciences and humanities they should be duly acquainted – within reason – of precisely what they may be seeking to endorse, refute, or supplant. Critical neuroscience, however, is not simply a watchdog of the neurosciences, but also looks to pose new theoretical and methodological frames through which we might consider cognition, and likewise urges other
social scientists to loosen any pejorative preconceptions they may hold towards the ‘hard’ life sciences (see, for example, Slaby and Gallagher, 2015).

These critical perspectives look to hold neuroscience to account for the dissemination of research findings, chastising those careless in their research design or their engagement with wider society, and in turn encouraging careful contextualising of output and fostering new forms of collaboration (see, for examples, Abi-Rached, 2008; Fine, 2008; Nahmias, 2011). More specifically to the concerns of this thesis, Kathinka Evers (2005, 2007) emphasises the need for the emerging discipline of neuroethics to establish a firmer philosophical grounding, with the view that some current conceptualisations are lacking in sufficient nuance relative to their vaulted ambitions. Other theorists have similarly sought to ward against the slipping past of claims of ‘normative facticity’ that inscribe in harder forms that which is socio-historically contingent (Hartmann, 2011; Buller, 2006; Glannon, 2009; Chesire, 2006). That neuroethics appears ‘trendy’ and ‘hip’ should not distract us from claims that overreach (Conrad and De Vries, 2011: 301), nor from attempts to inscribe questionable norms through a process of confirmation bias that ‘absolutizes itself’, and so may become unimpeachable for those outside of this techno-epistemic elite (Hartmann, 2011: 71).

As alluded to earlier, the hope for critical neuroscience is not merely to correct ‘brain overclaim’, but also ‘to push experimental work in alternative directions’ (Choudhury and Slaby, 2011: xiii; Fitzgerald and Callard, 2015). Furthermore, such efforts look to tease out the current prevalence of ways in which ‘our lifeworlds, language, and habits are already being subtly transformed by findings from neuroscience’ (Choudhury and Slaby, 2011: 2-3). These critical perspectives are therefore keenly attuned to the risks of categorically affixing the ideal subject through neuroscience, with Clidhna O’Connor and Helene Joffe (2013: 255) stressing that the ascription of ‘truth’ of any scientific concept may prove ‘largely irrelevant to its substantive effect on people’s thinking about themselves, others and society’. What gets ‘taken up’ in the public discourse surrounding neuroscience brings with it certain normative implications (O’Connor, Rees and Joffe, 2012: 220), and thus we need to cultivate ways of interrogating the present in order to illuminate the contingencies of that which may initially appear mundanely universal.

Critical efforts also look to illuminate the underlying normative stances by which neuroscientists may undertake their research. Pickersgill (2012), for example, notes the weary ambivalence felt by neuroscientists in satisfying both personal and institutional ethical standards, while also expressing resistance to those intrusions which may stall or halt knowledge production (Brosnan and Cribb, 2014; De Vries, 2007b). This reticence,
ambivalence, and occasional indifference is significant, with sociologists of bioethics and medicine in particular seeking to draw attention to current disciplinary assemblages and delineations of responsibility. Such critiques are especially focused on those claims which suggest convenient usurping or self-absolution from the ethical implications of their chosen frameworks, methodologies, and subsequent knowledge claims. Additionally, Pickersgill (2012) notes that many laboratory scientists conduct their research with the belief that the ethical implications of their processes and findings need not be considered concurrently or thought to be constitutive of the knowledge work in itself. Along these lines, then, ethical considerations are neatly cleaved from the knowledge production of those who purport to uncover the ‘essential’ properties of our very ethical being. Rationalisation processes and the hyper-specialised division of labour thereby ease ethics out of the lab and into the purview of certain qualified assessors, but – through empirical neuroethics, as I will demonstrate in the following chapter – ‘ethics’ is then smuggled back in diminished forms by some neuro-enthusiasts who endeavour to reveal the underlying construction of our ethical makeup.

Yet we must not neglect to remind ourselves that the work of scientists is always and inevitably laden with normative and didactic dimensions, particularly for those in the psy and neuro fields where Ian Hacking’s (1995) ‘looping effects of human kinds’ are especially likely. As Foucault pithily notes:

‘I don’t think psychology can ever dissociate itself from a certain normative program…
Every psychology is a pedagogy, all decipherment is a therapeutics: you cannot know without transforming’

Foucault, 1998: 255

Therefore every pronouncement that resounds from within the neurosciences inevitably has an underlying pedagogical impetus regarding how we might best conduct ourselves. In response, a great deal of critical neuroscience discourse looks to tamp down any overblown appeals and ‘breathless wonder’ accorded to the ‘revolutionary’ potential of the neuro, along with overstated and normatively-laden appeals that ‘invest people with an understanding of their own brains and emotions as manageable material to be transformed’ (Murison, 2012: 30). This compelling rhetoric of the brain as a site for re-invention ‘overdetermines our modes of self-understanding’ (Gotman, 2012: 85), resulting in a perpetual labour that disaggregates the self into mechanistic assemblies to be rendered maximally efficient, but is ultimately less than the sum of its parts.

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8 These effects of our reflexive constructions are addressed in more detail in Chapter Three.
This over-determination of the brain is inevitably framed within contemporaneous parameters, with Hartmann (2011: 81) suggesting that by way of the current translational bottleneck ‘what we might want to call social, economic, or political circumstances of action in everyday life (including their specific pressures and constraints) is played by the brain in neuroscientific discourse.’ The possibility that thereby emerges is that we are affixing in the immutable ‘natural’ what simply amounts to highly contingent institutional frameworks, and the accompanying ethical injunctions that perpetuate these social systems. When subsequently bound up in the ‘neoliberal order of individualized responsibility’ this results in a strange espousal of a personal ethic that entails working on strictly delimited cognitive capacities required to maintain these same institutional mechanisms of neoliberalism (Hartmann, 2011: 81, see also Schleim, 2014). This may generate a self-estrangement that, once enacted, may be resistant to countering discourses and so becomes dramatically reconstitutive of the ways in which we perceive ourselves as agents of varying autonomy and volition (Kirmayer, 2011: 367).

The ‘seductive allure’ (Weisberg et al. 2008, see also Joyce, 2008) of the neurosciences may play a key role here, for the promise of a ‘hard’, rigorous discipline that can give consoling solidity to our various idiosyncrasies holds great appeal for those who find themselves adrift due to their neuroatypical makeup. Cohn (2011), for instance, demonstrates that the promissory and seemingly mimetic qualities of neuroscientific representations – particularly through brain imaging – are already shaping the dispositions of those suffering from mental illness, who may seek more tangible markers of ‘authenticity’ for their respective diagnoses. Such images appear to provide vivid depictions of one’s difference for those uninitiated in the equal parts artful, technical, and messy construction of many forms of brain imaging, drawn upon to trace the equally heterogeneous assemblage of categories of mental illness (Cohn, 2011: 184, see also Joyce 2006, 2008 on the construction of MRIs). Such efforts give these elusive phenomena a tangible quality that for many psychiatric patients accords a new sense of personal ‘legitimacy’, in part achieved through the surreally ironic hope that brain imaging will “‘prove it’s not all in my head’” (Cohn, 2011: 187).

This feeds back into the ontology, substantiality, and discursive terrain we accord to difference, with increasingly complex conditions and categorical framings imported into the molecular brain, to which we then gaze in the hope and promise of wresting control over our rebellious psyches (Thornton, 2011b: 29-63; Illes et al., 2008). The drive of the neuro to go ‘upstream’ in reducing such conditions to their physiological mechanisms creates an ‘invisible curve’ of research output, for
‘... neuroscience itself is reproducing many of the existing values and assumptions that underpin traditional psychiatry ... Incongruously, then, the faith in an object beneath and prior to the symptoms is the very thing that appears to ensure the biology of mental disease will inherit much of the old social nature of mental illness.’

Cohn, 2011: 186-7

Thus a categorical circularity and ontological bait-and-switch may occur where ‘the symptom has collapsed into the referent’ (Dumit, 2011: 222). Where this occurs once previously negotiated and heavily contextualised categories may become shorn of their nuance and affixed in the material in ways that could prove counter-productive and difficult to later deconstruct. Critically tracing these processes requires disciplinary flexibility, and so critical neuroscience seeks to work both ‘downward in a conceptual analysis of the underpinnings of our models and metaphors of the brain, and upward toward a political economic analysis of the uses of neuroscientific knowledge’, along with ‘attention to the middle realm of interactions in networks or assemblages’ (Kirmayer, 2011: 370).

Undoing overly promissory discourses and their underlying epistemological claims and assumptions will take some concerted effort. George Whitehouse (2012: 199), a neuroscientist also trained in bioethics, notes with weary scepticism the ‘triumphalism’ of much current neuroscientific rhetoric, where ‘the hype about malleability of the brain manifested in the concept of neuroplasticity oozed into social and mental spaces in a way that seemed first stretched and then rigid’. It seems that once open and expansive orientations to our plasticity have already been appropriated by narrow overarching discourses (Malabou, 2008; Papadopoulos, 2011). Vidal (2009: 10) similarly detects an air of ‘ahistorical triumphalism’ in the neurosciences seeking to resolve the debates of millennia in ways ignorant to their deep context and contingency, and so risks making claims that are both overreaching and narrowly derived. These concerns of ‘stretching’ our neurological selves only to reinforce rigid and historically anomalous self-conceptions are pithy observations from Whitehouse and Vidal for, as I will show, so much of the clamour to ‘enhance’ our neurological makeup is construed in ways that seem desperately unimaginative and banal, yet also threatens to prove burdensome.

If, under the new promissory regime of ‘plasticity’, the brain is increasingly thought to be infinitely malleable, and furthermore that all experience must pass through the ledger of the molecular, then – in a gradual accretive turn towards ‘brainhood’ (Vidal, 2009) – this organ becomes the site upon which our efforts towards living well must be oriented. This ethos may become an ‘underlying central dogma’ to which we will expected to accord ourselves...
(Whitehouse, 2012: 205). But, as Catherine Malabou (2008) observes, we have no idea what it means to truly be plastic, for currently we insist on working plasticity to our own ends in ways that negate its potential of working on us i.e. to prescribe exactly how one should be ‘plastic’ only serves to reinforce already laid paths. Thus, like Whitehouse (2012: 205), we may ponder whether neuroplasticity is merely an obfuscation of a more efficacious ‘psychoplasticity’. That is, we reconfigure our neurology through techniques of self care in accordance with how we are informed our brains are ideally constituted in the current socio-political milieu.

Such an ethos, combined with the aforementioned consumption of ‘soft’ neuroscience, has resulted in the proliferation of popular and faddish outputs that ‘frame brain imaging and neuroscience as an accessible body of knowledge that has direct, concrete applications for almost every area of daily life’ (Thornton, 2011b: 1). In tandem with highly individualised imperatives to perpetual self-improvement, such discourses of manageable plasticity encourage ‘willful efforts to improve the brain’ in the expectation of ‘superior intelligence, greater emotional stability, and improved performance in the home, at the gym, and in the workplace’ (Thornton, 2011b: 2). The result is ‘endless projects of self-optimization in which individuals are responsible for continuously working on their own brains to produce themselves as better parents, workers, and citizens’ (Thornton, 2011b: 2). In this way the quotidian is now housed within the neuroplastic, and ‘endowed with regulatory significance’ (Thornton, 2011b: 7). Keenly felt but elusive properties become disaggregated into neurological processes deemed functioning or deficient, with discretely bounded and consumer-friendly interventions to match.

Through their growing epistemic privilege and cultural cachet anthropologist Emily Martin (2000: 574) sees the ‘neuroreductive cognitive sciences as the most dangerous kind of vortex – one close by and one whose power has the potential to suck in disciplines like anthropology, severely weakening them in the process’. Martin (2000: 581) espies a kind of ‘mania’ taking hold of the idealised subject, one in which we are valued for our willingness to push our brains to their absolute limits, albeit only in narrowly derived, pre-determined ways. Under the broadly neoliberalist dismantling of the state – with the parallel expansion of personal responsibility towards maximising one’s performance in competitive arenas – greater expectations are laid upon the individual as the engine for societal propulsion and regeneration. As a result ‘the individual must become the site for investment of resources … made up of a flexible collection of assets; a person is proprietor of his or her self as a portfolio’ (Martin, 2000: 582).
Suffice to say that viewing our neurology as an asset-based portfolio to be actuarially managed and leveraged blurs any remaining distinctions we might still have held between self-administered ‘treatment’ and ‘enhancement’. Into the future, as we develop ways to labour with greater precision upon our molecular constitutions, we will likely witness further blurring between ‘treatment’ and ‘enhancement’, along with the once similar cleaving between the care of one’s ‘natural’ state of being against various socio-technical extensions of the self. However, we need not stridently resist such entanglements through a fear of losing what is thought essential to our ‘humanity’, for such nostalgia towards old humanist ideals serves little purpose as we shift into new forms of ontological hybridity. Rather, we should look to preserve the generative potential of these current and forthcoming entanglements. This requires resisting the concretising of the subject, for if the contingencies of today are crudely imported into the brain terrain then we may find ourselves compelled by irresistible essentialist imperatives that actually serve to diminish the expansive possibilities of selfhood.

Outline of the thesis

The goal of this thesis is to delineate the production of new and shifting subjectivities as they are framed through the emerging neurosciences and related fields, particularly as they relate to ideals of ethical conduct. In this way I hope to provide an ‘epistemology of assemblage’ (Rose, 1990: xv) in how we may come to be constituted as subjects, of how we are reconfigured as knowledge claims are folded into injunctions upon our everyday conduct. In turn, this thesis also aims to contribute to the assembling of a more expansive neurological subject, one less acutely bound within idealisations of the ‘hypercognitive’, and instead better recognised as ‘embodied, embedded, enactive, extended, affective’ (Protevi, 2010). Whether the grand ambitions of the ‘hard’ neuro-enthusiasts to be discussed in this thesis succeed or otherwise, their success in capturing scholarly attention and the public imagination entails that they will nevertheless have an effect in how we are negotiated into being. We may, in time, come to govern ourselves via a precise instrumentalisation of our neurology, adjusting molecular levers towards satisfying narrowly prescribed ideals. These current and proposed technologies and techniques of the self mould evermore abstract and elusive aspects of our biosociality, but do so in evermore minutely materialist ways; a curious contrast of intensive means directed to expansive ends. It is worth acknowledging that Nikolas Rose
(1990: 11) diagnosed this hyper-reflexive state of the modern subject long prior to our current interest in the cognitive neurosciences:

‘Through self-inspection, self-problematization, self-monitoring, and confession, we evaluate ourselves according to the criteria provided for us by others. Through self-reformation, therapy, techniques of body alteration, and the calculated reshaping of speech and emotion, we adjust ourselves by means of the techniques propounded by the experts of the soul. The government of the soul depends upon our recognition of ourselves as ideally and potentially certain sorts of person, the unease generated by a normative judgment of what we are and could become, and the incitement offered to overcome this discrepancy by following the advice of experts in the management of the self.’

Selfhood is thus constituted by what paths are already inscribed by ‘experts of the soul’ through the imprints and scripts left and given by technologies of care, and dominant paradigms of seeing and knowing, which in turn generate normative standards and the means to measure their adherence. If today this reach of governmentality is heading into the neurological, then we as social scientists must develop the means to trace this importation of concepts of subjectivity into the new terrain, and moreover seek to become productively entangled in this process.

However, this thesis does not claim we are on the precipice of some form of damning ontological implosion. Contrary to the aforementioned hand-wringing of some popular commentators in this vein your ‘soul’ did not just ‘die’ (Wolfe, 1996), and the turn to self-instrumentalisation and incorporation of new habits of self-care through the new life sciences will not necessarily result in us ‘paying coin in our humanity’ (Kass, 2002: 101). Such prophecies are all too common and indeed are one aspect of the excessively utopian and dystopian discourses I seek to critique. Rather, I endeavour to provide a more measured tracing of how certain subfields of neuroscience and ethics may come to inform everyday life, particularly in how we think of ourselves as ethical beings within the wider overarching imperatives of late modernity. This task will be undertaken in three parts.

*Moral Spectroscopes and Synaptic Ledgers* traces the emergence of neuroethics, a new discipline claiming epistemological territory by blackboxing properties that were once firmly within the purview of the social sciences and humanities into the hard empirical gaze of cognitive neuroscience. This combination of cool empiricism with the potential for application to pressing collective issues entails that neuroethics may, suggest proponents, bring about ‘a second Enlightenment’ (Farah, 2010: 8) through the development of a ‘universal morality’.

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Such ambition should give us pause, and indeed some influential outputs of neuroethical discourse will be shown to be insensitive to socio-historical nuances of subjectivity, resulting in narrowly construed conceptions that look to affix the ideal ethical being in ways that fail to recognise their productive contingencies.

*Not Fit for Purpose?* engages with those advocates who propose that we look to precisely recalibrate the ethical subject through the application of neuroscientific insight. These ‘hard’ transhumanists suggest that it may prove a virtuous endeavour to seek to improve ourselves through direct interventions upon our neurological makeup, and indeed that in light of the increasing global risks that we collectively face it may prove *imperative* that we demonstrate a willingness to practice this technosomatic self-fashioning. In response, some bioconservative and classical humanist thinkers have sought to defend ‘traditional’ ideals of the subject. However, I suggest such stances are as equally rigid, constraining, and ultimately unattainable as those they criticise from the transhumanist camp. Instead, I draw on critical theory and ‘anti-humanist’ perspectives that demonstrate the possibilities that may emerge if we are willing to embrace our ‘hybrid’ ontologies, while also practicing an epistemological humility that does not seek – through ‘translational imperatives’ and the promise of ‘enhancement’ – to immediately shift scientific insights into practical applications that may foreclose other avenues of thought and experiment. Using this theoretical framework I also provide a critique of the growing popularity and ethical injunctions embedded in the ‘brain training’ industry.

*Dementia in a Hypercognitive World* shifts from the critique of those who aim to affix measures of the ideal ethical subject as one who is ‘hypercognitive’, to instead explore questions of subjectivity, narrative, and wellbeing in those who suffer from dementia; a typically characteristic condition of the highly developed world. Using experimental but sensitively rendered works of fiction as inspiration, this chapter demonstrates how dementia is an entangled phenomena, irreducible to biological phenomena or social constructions, and plagued by problems of inexpressibility, and thus requires nuanced practices of care and emotional labour in order to continually affirm those who are undergoing rapid shifts in their ontology. More broadly, through such considerations of neurodiversity we may come to recognise the importance of relational and affective elements in retaining an ongoing sense of self and volition, and so may be better placed to reconsider how our varying neurological constitutions may best be realised.

Finally, the concluding chapter returns to the curious contrast of the intensive and the expansive found throughout this thesis, and outlines some trajectories by which we might foment a greater range of affirming expressivity of the array of our neurological being.
Chapter Two

Moral Spectroscopes and Synaptic Ledgers: On the Epistemic Claims and Disciplinary Formation of Neuroethics

Introduction – Blackboxing the moral subject

In Charles Dickens’ (1865) *Our Mutual Friend* the possibility is raised that morally-infused energy generated by our interactions give off arrays of light that are then read by intergalactic beings using sophisticated technologies. From this data such beings can view the full spectrum of our morality and see us in vivid displays of our ‘true’ selves. That such a device may transform the complexities and nuances of our day-to-day morality into blazes of light flowing between beings is (perhaps) a romantic, tantalising, and enlivening idea, one pithily described by Oliver Sacks (2001: 120) as a kind of ‘moral spectroscopy’.

There emerges hazardous epistemological terrain, however, in developing a moral spectroscope that purports to capture the spectrum of such elusive phenomena as ‘morality’, but in practice only presents a slice claiming itself as the whole. This chapter will address a potential form of ‘hard’ moral spectroscopy from the burgeoning field of neuroethics, which insists on seeing and bounding morality within the ‘wetware between our ears’ (Safire, 2002b). This branch of empirically-inclined neuroethics hones tools and experimental constructs that gaze into our material compositions, and then pairs them with our current understandings of localised neurological functions, thus endeavouring to map morality in however it may be inscribed upon the brain. In this way the organ itself becomes the bounded container of moral being, neatly cleaved from the muddying context in which right thinking and good action are emergent and practiced.

For social scientists, this configuration of the ‘right’ and the ‘good’ at the neurological level might raise concern. Therefore, along with Karen Cerulo’s (2010) aforementioned lament of sociology’s tepid response to the growing influence of the neurosciences, we can now add the potential epistemic capture – a Latourian ‘blackboxing’ (1999: 304) – of inquiry into morality. Through such blackboxing, ‘hard’ methods of empirical neuroethics purport to produce morality-in-action with an immediacy, vividness, and seemingly specialised and technical precision which the social sciences and humanities can neither equal nor easily critique. The claimed exactitude of experimental constructs that use repeatable and infinitely iterative stimuli (such as moral dilemmas), to thereby test the neuronal basis of variable morality, lends...
a guise of legitimacy and objective clarity to empirical neuroethics, altogether generating a research program which demands thorough interrogation from social scientists.

The introductory chapter highlighted the importance of practicing a cautious entanglement, seeking productive exchange where possible, but also reining in ambitious neuro-practitioners who overreach in their epistemic claims regarding the ‘cerebral subject’ (Ortega, 2009). Often these claims invoke an understanding of the brain as the final resting place upon which all other phenomena may be converted into a common currency, as suggested here by highly regarded neuroscientist Joseph LeDoux (2002: 5):

‘The puzzle of how nature and nurture shape who we are is simplified by the realization that synapses are the key to the operations of both. Whether your paycheck is deposited to your bank account automatically or you hand it over to the teller in person, it goes to the same place. Nature and nurture function similarly: they are simply two different ways of making deposits in the brain’s synaptic ledgers.’

But what is lost if we choose to focus solely on this endpoint of the final ledger and eschew the varying processes by which a ‘deposit’ is made? Indeed, if we take LeDoux’s chosen analogy of depositing a paycheck, we can observe that while, yes, the funds will arrive in your account in either scenario the ethical inflection of the process can differ dramatically, and thus change our relation to that same paycheck. The human bank teller, for instance, can be felt to pass judgment on your wealth, while the non-human actor who receives your electronically programmed deposit cares not. However, in turn the human teller can provide warmth and consolation, while the non-human machine processes your requirements without feeling. An array of ethical dynamism and reflexivity therefore surrounds even the most mundane artefacts and exchanges, with the processes and networks by which certain desired outcomes are effected also feeding into the ongoing shaping of various forms of ethical subjects (Latour, 1992; Pickersgill, Cunningham-Burley, and Martin, 2011). If even the most mundane of interactions, frames, and gazes can shape our ethical dispositions and constitutions, then what of claims that resubstantiate varying ontologies across ‘nature’ and ‘nurture’ into the common currency of the neuronal? Thus, while the synaptic ledger may be a tempting construct, we should acknowledge that the vast spectrum of means by which ‘deposits’ are made can in turn create wildly varying ethical relations that only serve to further undermine the ledger’s ongoing reliability. We should therefore not presume the synaptic ledger to be

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9 Similar claims can be found throughout neuroscientific literature, though this has lessened in recent years in favour of more embodied and relational models of cognition, see Glannon (2009) for a critical overview. My contention within this chapter, however, is that a certain influential vein of positivist neuroethics seeks to bring back the hard fixity of the synaptic ledger in assessing our ethical being.
wholly encompassing of the phenomena which make up the world available to the experiential subject, for too much threatens to be lost in this seeming surety.

The propounding of a moral spectroscope and the synaptic ledger provide complementary ways of capturing the particular approach of neuroethics, an emerging discipline predicated upon the authority of the ‘neuromolecular gaze’ to translate properties of subjectivity and wellbeing into its epistemic orbit (Abi-Rached and Rose, 2010). Such spectroscopes and ledgers accord once elusive properties of the subject an ‘anatomical reality’ and in this way become open to new forms of instrumentalisation and injunctions regarding care of the self (Abi-Rached and Rose, 2013: 47), proposals which will be further addressed in the following chapter. For now, it is worth noting that there has only been a small amount of prior scholarship outlining the promissory rhetoric, epistemic flag-planting, and expert-wrangling deemed requisite in order for neuroethics to firmly establish itself as a discipline that demands both due deference and scrupulous oversight (see Brosnan, 2011; De Vries, 2005, 2007a; Conrad and De Vries, 2011). While helpful in establishing a base for sociological critique this chapter seeks to go further in offering a sustained and relatively lengthy investigation of neuroethics’ emergence over the last fifteen years. In particular, I wish to draw attention to the work of those within the field whose claims regarding the possibility of realising moral spectroscopes and synaptic ledgers of wellbeing threatens to produce a narrowly conceived metamorality, one grounded in highly anomalous historical contingencies of ‘wellbeing’ both justified through and shoehorned into the seemingly immutable brain terrain. It is this assumption of parity – that current conceptions of good living, right thinking and just action can be translated down into the molecular gaze of neurological function – which this chapter predominantly seeks to interrogate from a sociological perspective.

This chapter will demonstrate how such ambitions of moral spectroscopy – though not shared by all practitioners – were present from the very beginnings of neuroethics’ formalisation as a field of inquiry, constituting an adapted form of eliminative materialism that demands close scrutiny. More recently, the assessment of the ethical subject through moral spectroscopy can be witnessed in the experimental models of neuroethicist and moral psychologist Joshua Greene, whose work has potentially discipline-shaking implications, yet despite this and being demonstrably influential (cited well over ten thousand times in academic publications) his work and related studies have thus far escaped sociological scrutiny. The claims of Greene and others towards more precisely ‘reading’ the moral being are also gaining traction in popular outlets, hitting that titillating nexus between the assurances of scientific precision with the promise of greater wellbeing for all, and so risks weighty ‘looping effects’ (Hacking, 1995) regarding our self-conception as agents. These effects may hasten what I will ultimately argue
are questionable epistemic claims regarding wellbeing that ultimately reduce and rigidly affix once productively elusive understandings of moral autonomy. Instead, what is produced through crude spectrosopes and narrow synaptic ledgers may well be both the ossification and reification of already extant but highly anomalous conceptions of the ‘ideal’ ethical subject. The following chapter will subsequently trace how such hypothetico-deductively drawn outcomes are being applied to narrow contemporary contingencies in search of ‘enhancement’, neglecting other possibilities of how our neurological capacities may best be realised.

To this end of providing a thorough discourse analysis of the disciplinary emergence of neuroethics, and then interrogating recent empirical claims, this chapter will first provide a brief overview of the emergence of neuroethics, particularly in tracing claims that suggest neuroethics may lay the foundations of ‘a second Enlightenment’ (Farah, 2010: 8) and a form of ‘universal ethics’ (Gazzaniga, 2006: 178). The ontological groundwork required in justifying the synaptic ledger – of rendering neurology commensurate with morality – will then be explored through the advocacy of those working within the philosophy of mind, such as Neil Levy and Thomas Metzinger. Following this the moral spectroscopy of Joshua Greene will be explored as especially demonstrative of the ambition of empirical neuroethics in attempting to dismantle long-held and widely accepted positions in normative ethical thought. Through these empirical endeavours I will show how neuroethics conflates multiple branches of ethical inquiry, with potentially significant consequences across the disciplinary gamut. Lastly, and in anticipation of the following chapter, some insights will be given as to the ‘ideal’ subject envisioned by some neuro-advocates – to be potentially realised through direct interventions upon the brain – that threatens to actuarially affix understandings of subjectivity and risk that we are still well short of truly comprehending.

The ambition of empirical neuroethics

Neuroethics, in its broadest definition, has two main branches. Firstly, it is the study of how we should conduct research within the neurosciences with regard to ethical, legal, and social implications, thus placing itself firmly within bio- and medical ethics more generally. Secondly, neuroethics concerns itself with the problem of how neuroscience-based research might productively inform, support, or question the validity of current understandings and applications of morality and ethics (Roskies, 2002; Marcus, 2002; Glannon, 2006, 2011; Levy,
2007, 2008; Farah, 2010; Conrad and De Vries, 2011; Buniak, Darragh, Giordano, 2014; Darragh, Buniak, Giordano, 2015). It is this latter aim which is of particular novelty and ambition.

For this reason the following analysis is especially concerned with how neuroethics is interrogating longstanding principles of normative ethics and – on the basis of its positivist empirical approach – proposing ways in which we might consider modifying our ethical practices and propensities by way of neurological intervention. From its inception, this line of neuroethics has been characterised by the promise of resolving long-debated normative stances, most notably the bind between broadly Kantian deontology and Bentham utilitarianism (Gassen, 2008). In addition, neuroethics has also positioned itself as a regulatory overseer of efforts towards alleviating the growing burden of psychiatric disorders and degenerative neurological disease, whilst also policing the general conduct of the neurosciences and warding against over-promissory rhetoric (Glannon, 2006). Whether the field can appropriately tend to these dual aims without inviting accusations of regulatory capture is a source of ongoing tension and debate (Brosnan, 2011; Marcus, 2002).

The term ‘neuroethics’ dates to 1973 when Anneliese Pontius (1973) raised the possibility that walking devices used to aid newborn children may ironically result in long term consequences in developing the required neurological capacities for that same motor function. Though this is certainly an interesting and pertinent line of inquiry, neuroethics as it is understood today usually does not directly concern itself with these issues of developmental neurology and the incorporation of artefacts with bio-mechanics of movement (Buniak, Darragh, Giordano, 2014; Conrad and De Vries, 2011). Rather, Erin Conrad and Raymond De Vries (2011: 312) suggest that – in playing down the earlier Pontius coinage and instead highlighting ties to bioethics more generally – neuroethicists are ‘are appropriating the “origin myth” of bioethics... benefitting from established work in bioethics while claiming a new area of inquiry’. This approach has so far proven to be a clever discipline-building strategy.

A broad consensus suggests that neuroethics first entered the wider public consciousness and established a claim as a discipline in its own right around fifteen years ago, with credit given to popular linguist and neuroscience advocate William Safire’s organisation and subsequent public discussion of the 2002 ‘Neuroethics: Mapping the Field’ conference, which proved a catalyst for pushing the field into the academic limelight (Farah, 2010: xiii; Buniak, Darragh and Giordano, 2014). In attempting to carve out legitimacy and establish their ambitious aims public figures like Safire (2002a: 3-5) aligned their new endeavour with revolutionary thought, specifically invoking the fruitful outcomes of the ‘intellectual revolt’ following the
Enlightenment. Safire’s lively rhetoric further cautioned against Promethean hubris while nevertheless urging the promise of remaking ourselves into our most desirable form and image.

This rallying cry opened the crucially formative 2002 ‘Mapping the Field’ conference, a high powered affair featuring many of the intellectual heavyweights of the psy, neuro, and cogno disciplines, including: Antonio Damasio, Patricia Churchland, Michael Gazzaniga, Steven Hyman, Erik Parens, Arthur Caplan, Paul Root Wolpe, and Judy Illes, amongst others. The purported aim was to establish a broad consensus of what neuroethics consists of as a discipline, its relation to neighbouring fields, and its potential role in public communication and policy development. Conference attendees also debated what issues were most pressing with regard to future research possibilities. Curiously, throughout the conference the very descriptor of ‘neuroethics’ itself was held to be contentious, with attendees instead proposing ‘euneurics’¹⁰ (Blakemore, 2002: 130), ‘neurohumanities’ (Mahowald, 2002: 317-8), or the less catchy but certainly comprehensive ‘social consequences of neuroscience’, as suggested by Henry Greely (2002: 309-10).¹¹ Indeed Greely (2006: 606) would several years later continue to express frustration with the field’s name, concerned that the focus on ‘ethics’ unhelpfully distracts from equally pertinent legal and social issues. Greely, however, is resigned to the fact that the ‘catchy’ term ‘has been impossible to dislodge’. In any case, ‘neuroethics’ has largely won out, although some practitioners prefer to label themselves as ‘neurophilosophers’ or variations thereof, often depending on their initial entry point into the field.

One recurrent theme of this first conference was to steer conceptions of our species away from overly romanticised notions of human exceptionalism to cooler, empirically informed tracing of our moral constitutions. Antonio Damasio (2002: 15), while broadly supportive of the neuroethical cause, recognised that this may prove a difficult pill to swallow:

‘As if it were not enough to have Copernicus tell us we are not the center of the universe, Darwin tells us we have humble origins, and Freud tells us that we are not masters of our own house, now we are being told that even in the realm of ethics there is forerunner behavior.’

Certainly, one of the earliest aims of neuroethics as a sub-discipline was to find and describe these neuronal ‘forerunners’ of ethics – those causal mechanisms operating below conscious

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¹⁰ Suffice to say this term did not catch on despite Colin Blakemore’s (2002: 130) belief that aversions to eugenics had now been overcome.

¹¹ In addition the philosopher of mind Thomas Metzinger (2009) would later propose a neuroethics-like field that embraced a project of ‘consciousness ethics’ (233) and ‘rational neuroanthropology’ (218). This is further discussed later in the chapter.
perception, which together form brief coalitions of volitions to action – and to determine how these material bases might inform our understanding of ourselves as ethical beings. Thus in the same way that Copernicus and Darwin created radically different ledgers through which to understand our contingent existence, so might neuroethics reconfigure understandings of the ethical being. Conference attendees understood that this could prove a disquieting realisation, for edging further back in the causal chain of agency may appear to ‘shrink the domain we think of as uniquely personal decision making’ (Kennedy, 2002: 202).

For some of these aspiring ‘engineers of the human soul’ (Rose, 1992), however, the possibility of better upholding our current ethical subscriptions demands that we follow with a pioneering spirit wherever the neurological gaze may lead us, even if such a task may initially seem self-damning. Invoking William James (in ways James probably did not anticipate), philosopher and historian of science Jonathan Moreno endorsed neuroethics as an avenue of productive self-repurposing, a way to ‘make our nervous system our ally instead of our enemy’ (Moreno, 2002). Similarly, Patricia Churchland (2002: 43) expressed the view that neuroethics would enable a ‘degree of freedom’ previously not possible, and that rather than diminish would enhance our ‘sense of self’. Churchland (2002: 25) also highlighted the potential of neuroethics as an objective ledger by which assessments of personal responsibility can be made, enabling determinations at the neuronal level of those ‘in control’ and those in whom neurochemical imbalances may mitigate responsibility. Assessments of mens rea could plausibly, in Churchland’s estimation, be referred to the neuroethical gaze. Prominent bioethicist Arthur Caplan (2002: 98) went even further in endorsing neuroethics and expanding the breadth of its potential utility, suggesting that the field will enable us to safely ‘move toward optimization of our brains’ and will aid us in thinking ‘about how we might modify and design ourselves’. Such aspirations are becoming more prevalent, as the following discussion and Chapter Three will demonstrate.

One conference speaker, philosopher of science Kenneth Schaffner (2002: 29), also posited that – thanks to the rigour of neuroethics – researchers could now commit to a kind of ‘creeping reductionism’ that would enable ‘roughly deterministic explanations for some types of behaviour’. In similar fashion Churchland (2002: 55-6) also endorsed reductionism as ‘a guiding methodological principle’, one that at its base is distinctly neurological:

‘I don’t think that in neuroscience we’re going to be able to explain something like temperament or storage of a memory in terms of something more basic than neurons... It looks to me like a very reasonable empirical hypothesis that that’s the way the world works ... I don’t place much significance on the so-called patchiness of the
sciences ... We’ll just keep hacking away at it on the assumption, reasonable enough given the history of science, that eventually we’ll get the answer or to a good approximation.’

Again we see here the epistemic claim of the synaptic ledger, with the *neuro* establishing itself as the definitive point of inquiry in wholly capturing such complex properties. For Churchland, no substantiability above or below the neuron in the translational chain will have explanatory power over qualia like ‘temperament’ or ‘memory’ without losing its illuminating and instructive purchase. Beyond the question of how valid such a reductionist account is, the very notion of ‘hacking away’ at something like ‘temperament’ at the neurological level gives disconcerting insight into the precarious nature of tracing the elusive properties that constitute us as human beings. The risk here is that neuroscience’s ‘good approximations’ will too hastily foreclose the possibilities of more expansive future investigations into these complex phenomena, that is, we affix a corrupted common currency that only captures a slither of the phenomena it purports to encompass. It seems significant that the confidence of those first conference attendees in 2002 was of such lofty ambition that an unidentified interlocutor felt compelled to chastise one panel for ‘talking rather casually about altering human nature’, and to remind them that ‘we need some dimension of humility here’ (Marcus, 2002: 170).

The published proceedings of this crucial 2002 conference indicate only one social scientist invited to address the attendees. This sole representative was Barbara Koenig (2002: 61), a highly regarded medical anthropologist, who raised concerns over ‘the seductive promise of prediction’ towards ‘assessments about people and their motivations, desires, and characteristics’. Koenig (2002: 61-2) urged that these ambitions be tempered with the understanding that ‘whether or not those predictions prove to be scientifically accurate may be less important than our belief in their power’. Yet this warning of the potential for self-fulfilling prophecies, classificatory looping, and presumptive circumscribing has largely not been recognised by some influential neuroethicists, who, I argue, display a lack of reflexivity in importing and affixing certain assumptions that risks neglecting other opportunities in how we may approach exploring ethical subjectivity.
A second Enlightenment?

It should be noted that the epistemological origins of neuroethics certainly go back much further than the initial 2002 ‘Mapping the Field’ conference. For decades, those in the psy disciplines, along with philosophers and social scientists, have debated issues of the brain-mind-body entanglement and ethical being with reference to the neurosciences, with Ashcroft (2006: 211) citing the work of Kurt Goldstein, A.R. Luria, and Maurice Merleau-Ponty as especially notable predecessors capable of traversing this expansive terrain. Though their various influences persist in the neurosciences in some measure it would appear that some of the more ontologically entangled and nuanced views of thinkers like Merleau-Ponty have been exchanged for broadly eliminative materialist positions, at least in the influential pockets of neuroethics I am concerned with here. This form of hard empiricist neuroethics owes a debt to both the rise of neuroscience and associated technologies, which gave cognitive scientists greater confidence in discerning at the neurological level steadily more complex and once abstract qualities of cognition. Additionally, neuroethics also emerged in part by way of the growth of empirically-driven moral psychology, a sub-discipline of increasing public interest (see, for example, Haidt, 2001).

The rise of neuroethics forms part of ‘an avalanche of works in recent years’ exploring the possibilities of a universal measure of wellbeing by, in part, tracing and rendering into parsable data ‘morality’ as it is realised within the brain (Rasmusson, 2009). Perhaps, then, empirically-inclined neuroethics is best distinguished by the focus placed upon the tools of reproducing psyche, agency, and volition in new substantial forms (Levy, 2009: 69). In particular, the field’s current preferred form of moral spectroscope – fMRI (functional Magnetic Resonance Imaging) – purports to render vivid and material the ethical mind at work, by correlating increasingly complex stimuli with localised activity in the brain in close to real time.12 One outcome of this co-production of tool, technique, and facticity within neuroethics has been that morality is increasingly considered in functional terms, progressively mapped into the material as ethically-demanding stimuli pass through and leave measurable traces within the brain. Some have raised concern over this binding of morality to emerging technologies within a single field, suggesting that it risks forms of hasty specialisation, hyperbole, and inflated expectations (Paren and Johnston, 2007). Nevertheless there is little doubt that since the initial 2002 conference the field of neuroethics has grown rapidly.

12 For one of the first and most influential applications of fMRI in this manner see Greene et al., 2001.
Following special issues dedicated to neuroethics from *Brain & Cognition, Cerebrum,* and the *American Journal of Bioethics,* there are now three recently established journals dedicated exclusively to the field: *Neuroethics,* the *American Journal of Bioethics – Neuroscience,* and the *Journal of Cognition and Neuroethics.* In additions, dedicated research centres are opening, societies are being formed, first principles are being codified into textbooks, undergraduate and graduate level courses are now taught in universities, and public forums are capturing the rapt attention of the layperson (Buniak, Darragh, and Giordano, 2014). More broadly Priva and Austerweil (2015: 7-8) observe that in the journal *Cognition* the number of studies dedicated to measuring expansive and complex social properties of morality, judgment, norms, harms, and the like increased eightfold from 2000 to 2015. This increase occurred as the proportion of theoretical studies fell dramatically in exchange for experimental frames, a shift that aligns with the growing uptake of fMRI and other measures of functional activity developing finer temporal and spatial resolution. This academic interest of tracing the social being at the molecular level, says Joshua Greene (2015: 39), is ‘more than a growth spurt, the field has busted Hulk-like out of its jeans and sneakers’.

Caragh Brosnan (2011: 290-3) suggests that neuroethics has asserted its disciplinary status on two main fronts. The first of these is by appeal to the absolute centrality of the brain for an understanding of who we are as humans. Though many ethical issues arising from neuroscience research are similar in kind to those already considered within bioethics, what differentiates neuroethics is the degree to which the material properties examined by the neurosciences are equated with what it means to be a human being. According to prominent cognitive neuroscientist Martha Farah (2010: xiii) ‘Neuroscience, more than any other branch of the life sciences, intersects with the fascinating realms of human identity, autonomy, and agency’. Neuroethicists are working towards the transmutation of normative ethical inquiry into a material science over which these new ‘pastors of the soma’ (Rose, 2007: 29) would exercise an epistemic privilege, as expressed here by Farah (2010: 1):

‘In principle, and increasingly in practice, we can understand the human mind as part of the material world. This has profound implications for how we regard and treat ourselves and each other. It gives us powerful new ways to predict and control human behaviour and a jarringly material view of ourselves. Neuroethics is the field that grapples with these developments.’

The second front on which neuroethics has staked its claims as a discipline concerns the vast scope of its purported expertise. As noted earlier neuroethics claims that two distinct branches of inquiry are within its purview: monitoring the ethical conduct of scientific research practice
in a manner similar to bioethics more generally, while also investigating the causal precursors of morality as they are inscribed upon the brain. The suggestion, then, is that neuroethics can both supervise its own conduct as an empirical endeavour and play a potentially revolutionary role in understanding human morality, by shifting its aetiology to the brain. The revolutionary language invoked can at times verge on the grandiose, with Farah (2010: 8) further suggesting that

‘... neuroscience may be responsible for a kind of second enlightenment in the twenty-first century, naturalizing our understanding of humanity and transforming the way we think about ourselves.’

Thus neuroethics promises both a ‘hard’ science and a radical usurping of the humanities, through which it may ultimately ‘free’ human subjects from the tyranny of evolutionary hangovers and their not-yet-maximised neurological capacities. Again, this appears to generate a compromised position regarding whether a discipline can be both a promulgator of discoveries in the causal underpinnings of ethics while also a regulator of the ethical practices involved in the very research techniques that they utilise. The possible outcome is a form of regulatory capture that risks ‘chasing its own tail’ (Brosnan, 2011: 292, see also De Vries, 2007b). This is a convenient circumscribing of authority, for while neuroethics as a field of expertise clearly wants to move the levers of policy it is resistant to being moved in turn (Kennedy, 2002: 205, Gazzaniga, 2006: xvii). Furthermore, as Pickersgill (2013a) notes, the increasing epistemic reach of neuroscience and its sub-fields requires greater technical specialisation and access to costly technologies – compared to the relative interdisciplinarity and open practice of bioethics more broadly – but this technical specialisation makes it all the more pertinent to open these emerging fields to complementary studies of science and technology. A too hasty circumscribing of a field also risks exacerbating expert-lay divides in research areas (eg. applied ethics) where participatory approaches are usually considered imperative to best serve wider society.

Reasoning and decision making, emotion and affect, empathy, rationality, the qualia and malleability of memory, and the very notion of wellbeing itself are all within the claimed purview of neuroethics (Brosnan, 2011; Marcus, 2002; Levy, 2007; Farah, 2010). This reflects a broader trend where the neuro is taking over from the psychological and the genetic in being ‘frequently portrayed as key to properly appreciating the subtle complexities of humanity’ (Pickersgill and Van Keulen, 2011a: xiii). Yet the ways in which this gaze is epistemologically fixed, and then proceeds to affix an ideal ethical subject are, I argue, open to contestation. Hence the importance of turning a critical eye to neuroethics, for current discourses within the
field ‘fail to see the larger context that gave rise to the specialty of bioethics’ and too frequently lack objective remove from the phenomena they wish to investigate, along with an understanding of the sociological context of disciplinary formation (De Vries, 2007b: 67).

However, this places a potential sociology of neuroethics in the unenviable position of attempting to work across multiple fields in order to fairly and saliently critique their practices (De Vries, 2005: 26). This task is made even more difficult thanks to neuroethics’ insistence on self-regulation. At times this insularism is oddly justified with appeals to liberal democratic principles. For example, one advocate of this ilk, prominent public scientist and former President of Stanford, Donald Kennedy (2002: 205), declared himself ‘in favor of leaving the ethical decisions to the researchers themselves … partly out of a conviction that research really is a form of speech’. This is a strange and convenient form of ‘scientific isolationism’ (Douglas, 2014) that seeks to house sensitive research under the protection of freedom of expression and libertarian principles.

Nonetheless, neuroethics has largely succeeded in claiming an expansive mandate by incorporating two distinct lines of inquiry under one discipline (see Roskies, 2002, and Levy, 2008 for explicit rationales of this dual reach). As already noted, the less contentious line – the ethics of neuroscience – deals with issues largely similar to that of bioethics and ethics of medical practice more generally, simply put, this line considers the debates around how those working in the neuro fields should go about their day-to-day work. This sub-branch also extends into the sphere of critical neuroscience, critiquing misrepresentations of neuroscientific insight in public discourse, including excoriating popular texts that introduce ‘neurosexism’, unfounded rationalisations of status quo, and obscuring scientism (see, for example, Fine, 2008). Lastly, within this area can also be found commentaries on representations of neuroscientific research in popular media, chastising crude applications, exaggeratedly utopian and dystopian views, and gross simplifications of complex ethical issues (see Krahn, Fenton and Meynell, 2010; Lavazza and De Caro, 2010).

Evidently this is already quite a breadth of interests to which neuroethics lays claim. However, the other aforementioned line of inquiry, the neuroscience of ethics, further aims to measure and reconfigure the ethical subject by way of empirical investigation into the working brain. The hope is to demonstrate ‘that a science of normativity can exist’, one to which the neurosciences may play a key role in ‘the development of an authentic science of morals’ (Changeux in Changeux and Ricoeur 2000: 178). This is all predicated upon the synaptic ledger premise that ‘human experience shows every sign of being determined by, and realized in,
Advocates claim that this particular branch, exclusive to neuroethics, is

‘... importantly different from other branches of applied ethics ... [neuroethics] occupies a pivotal position, casting light upon human agency, freedom and choice, and upon rationality. It will help us to reflect on what we are, and offer us guidance as we attempt to shape a future in which we can flourish... today the issues it embraces are rightly seen as central to our political, moral and social aspirations.’

Levy, 2007: 2

For philosopher and neuroethicist Neil Levy (2008: 2) neuroethics may go ‘to the very heart of what it means to be a human being’ and thus has no analogue in bioethics. Indeed, neuroethics may go further than any other endeavor to ‘reveal the structure of our minds and, therefore, of our souls’ (Levy, 2008: 2). Note here how ‘mind’ is implicitly already blackboxed into ‘brain’, which then presumes to stand in for whatever we mean by ‘soul’. That ‘mind is what brain does’ (Rose, 2013 : 3) is accepted as axiomatic under the new regime of dutifully cultivating our ‘brainhood’ (Vidal, 2009).

Despite these ambitious claims for importing selfhood into the brain terrain, sociologists and related scholars have for the most part ignored the emergence of neuroethics, perhaps to avoid becoming wedged between long-running debates regarding the practical utility of reductionism against the subtle and technical nuances of academic moral philosophy and normative ethics. Yet the belief amongst some neuroethicists who suggest that their work may ‘force us to confront the possibility of a major shift in our self-conception’ (Levy, 2008: 2) necessitates our critical sociological eye, not least because the conflation of the neuro and the normative may engender new constitutions of subjects that could prove highly problematic from the perspective of the social sciences, which, for their part, risk becoming marginalised and excluded from these important ongoing debates.

As it currently stands sociologists are largely observing from the outside, conducting a sociology of neuroethics, rather than a sociology in neuroethics (Brosnan, 2011, De Vries, 2004). On the whole, what little sociological scholarship into neuroethics that currently exists has been limited to post-hoc analysis, general overviews of the field, and ethnographic studies with neuroscientists who may confront neuroethical issues in their day-to-day work (Brosnan, 2011; De Vries, 2005; Conrad and De Vries, 2011; Pickersgill, 2011; Brosnan, Cribb and Wainwright, 2013; Brosnan and Cribb, 2014; Buniak, Darragh and Giordano, 2014; Darragh, Buniak, and Giordano, 2015). Furthermore, sociological insights have rarely featured in
neuroethical dispatches, with contributions to the field across the disciplinary range largely limited to neurology/neuroscience, philosophy of mind, moral psychology, and medical/bio/public/legal ethics. Some observers go so far as to claim that the contribution sociology can make in this area will remain forever limited by its particular orientation to phenomena (Sheehan and Dunn, 2013). As a result, sociological contributions around neuroethics are more likely to be found within ‘critical neuroscience’ or ‘neurocultural’ outlets already dedicated to transdisciplinary engagement (Choudhury and Slaby, 2011; Ortega and Vidal, 2011; Pickersgill and Van Keulen, 2011b; Littlefield and Johnson, 2012).

Given the relative confidence and impunity with which neuroethics is forging ahead this exclusion of sociological insight is worrisome, for while practitioners of the neuro look to diligently map the ‘space inside the skull’ (Beaulieu, 2000) note that this space may merely be the proxy for the importing of contingent worldviews regarding the ideal ethical subject, now inscribed in the immutable form of the ‘natural’ and ‘essential’, and hence a further colonisation of the ways and means in which we are ‘obliged to be free’ (Rose, 1999: 87).

From a slightly more positive stance, however, Pickersgill (2013b: 323) suggests that the seemingly irresistible epistemic creep of the neurosciences may open up space for productive interdisciplinary exchanges. Such tentative aspirations are echoed by others, and indeed some recent collaborative entanglements previously mentioned hold great promise to undo the ‘baneful disciplinization of the sciences’ (Rose, 1999: xvi). In likewise endorsing such aspirations I aim in Chapter Four to make a small contribution to this endeavour of directing inquiry towards more expansive views of neurological difference.

Still, this optimism of potential collaboration and exploration must be weighed against the headlong rush currently displayed by some prominent neuroethicists, whose efforts may be rigidly determining the ideal ethical subject. Some claims in this vein demonstrate an unnerving ambition, unabashed in blithely dismissing other disciplines, as evident in this call from neurophilosopher Sam Harris:

‘Questions about values – about meaning, morality, and life’s larger purpose – are really questions about the wellbeing of conscious creatures. Values, therefore, translate into facts that can be scientifically understood: regarding positive and negative social emotions, retributive impulses, the effects of specific laws and social institutions on human relationships, the neurophysiology of happiness and suffering, etc. The most important of these facts are bound to transcend culture - just as facts about physical and mental health do. Cancer in the highlands of New Guinea is still cancer; cholera is still cholera; schizophrenia is still schizophrenia; and so, too, I will
argue, compassion is still compassion, and well-being is still well-being. And if there are important cultural differences in how people flourish – if, for instance, there are incompatible but equivalent ways to raise happy, intelligent, and creative children – these differences are also facts that must depend upon the organization of the human brain. In principle, therefore, we can account for the ways in which culture defines us within the context of neuroscience and psychology. The more we understand ourselves at the level of the brain, the more we will see that there are right and wrong answers to questions of human values.’

Harris, 2010, pp.1-2

This is one of the most frank and wide-ranging claims for the development of a moral spectroscope and synaptic ledger for a new science of human flourishing. Such a science adopts a premise of an ontological equivalency between meaning, morality, purpose, and wellbeing given that – with the right spectroscope to see and the right ledger to measure – all these properties are reducible to their material realisation in the brain. This also, Harris believes, renders such ‘facts’ of wellbeing beyond the supposedly distorting variable of culture. Thus, with Harris’ spectroscopes of ‘values’ and a synaptic ledger by which to compare them, ‘we will see that there are right and wrong answers to questions of human values’. This new science will involve placing normative ethical systems under the experimental gaze, testing their construct validity (ie. whether we ‘really’ invoke normative stances for the reasons we say we do) through the rigour of empirical measures derived from recent developments in cognitive neuroscience. Harris is one amongst a growing chorus of empiricists challenging the purview of the social sciences and humanities by straddling the ‘hard’ neurosciences and the ‘soft’ disciplines of moral psychology and applied ethics, holding grand aspirations of maximising ‘wellbeing’ and ‘dismantling metaphysics’ (Meloni, 2011: 105-6). It would appear,

13 It should be acknowledged that this eliminativist stance has many precursors. In particular Stephan Schleim (2014: 1) points to influential neuropsychologist Roger Sperry (perhaps best known for his work on split-brain function, for which he received a Nobel prize), who expressed a strong position in favour of a future normative ethics based upon empirical neuroscience. Sperry’s (1981: 3-4) stance was that through this ascendance of neuroscience certain worldviews would soon be rendered untenable:

‘Particularly relevant are recent changes in concepts relating to the mind of man, the nature of the conscious self, freedom of choice, causal determinacy, and to the fundamental relation of mind to matter and to brain mechanism. Some of man's most enduring concerns are involved, i.e. whether consciousness is mortal or immortal, cosmic or brain-bound, or reincarnate, and the like. It is in terms of the humanistic implications along these and related lines that neuroscience has always had its special interest and greatest meaning. Ideologies, philosophies, religious doctrines, world-models, value systems, and the like will stand or fall depending on the kinds of answers that brain research eventually reveals.’
however, that such ‘hard’ models tend to be minimally reflective about some of their grounding presuppositions.

To conclude this section it is worth observing that while neuroethics has been wary and resistant towards possible external interference it has also been acutely attuned to engaging the public. Highly cited figures in this area – Michael Gazzaniga, Sam Harris, Joshua Greene, Julian Savulescu, and Neil Levy, amongst others – frequently attend public events and make media appearances with an eye to accessibility and cultivation of ‘third culture’, wherein scientists may be seen to authoritatively and responsibly comment on aspects of our collective wellbeing (Brockman, 1995). Such a capturing of hearts and minds has been championed from the very beginnings of neuroethics, with William Safire (2002b) strongly emphasising that their new field must ‘get this far-reaching, soul-searching debate out of the ivory tower, onto the floor, onto the tube and into print until it penetrates every sentient being’s consciousness’. Safire himself served as chairman of the Dana Foundation, a private philanthropic enterprise dedicated to furthering research in the translational and application-inclined neurosciences, along with communicating such insights to the public.14 The Foundation certainly takes their aim of meaningful public engagement seriously, with the recent publication of You’ve Got Some Explaining to Do: Advice for Neuroscientists Writing for Lay Readers (Nevins, 2014) made freely available on the Dana website along with regular newsletters, multimedia resources, conference materials, Q&A’s with neuroscientists, press releases and other output designed for lay audiences. Further to this, one of the foundations first significant projects – aside from the aforementioned 2002 ‘Mapping the Field’ conference – was the publication of Michael Gazzaniga’s The Ethical Brain (2006), a highly influential text in establishing the legitimacy of neuroethics as a discipline, and making the case for developing a universal morality through neuroscience.

14 One cannot help but acknowledge the fraught legacy of neurologist Charles L. Dana, for whom the organisation takes its name. For example, Dana was vehemently opposed to women’s suffrage movements, with part of his objection based upon his professional opinion that the female brain was not suited to political affairs. Conrad and De Vries (2011: 309) note the obvious cautionary tale here in that otherwise questionable socio-political stances may masquerade behind the gaze of hard science, and thus we should keep this firmly in mind as neuroethics grows in influence. The Dana Foundation continues to be a very generous source of funding for neuroethics and regularly publishes material promoting the field.
Gazzaniga’s *The Ethical Brain* is one of the most forthright appeals for the legitimacy of neuroethics, and is representative of some of the discipline’s more troublesome aspects. Given its wide readership it is worth noting that although Gazzaniga’s empirical work as a neuroscientist is of the highest order, his foray into neuroethics is far less scholarly and laudable, making claims that many social scientists would find naïve and deeply problematic. *The Ethical Brain* is frequently cavalier in its assertions, largely ignorant of history, and repeatedly deploys weak analogies and logic in attempting to assuage concerns. Though *The Ethical Brain* was admittedly written with a general readership in mind this does not absolve it from gross ethical missteps and logical failings, for while we may be tempted to blithely dismiss such generalist works such a stance would fail to recognise the important role of the public in: confirming disciplinary legitimacy; shifting conceptions of permissible inquiry; and ultimately sanctioning research endeavours. Public perception is crucial in our ongoing reconstitution as subjects, especially in this case regarding neuroscience’s unique position as a ‘hard’ science revealing the fine scaffolding of our humanity (Racine, Bar-Ilan and Illes, 2005; McCabe and Castel, 2008; Weisberg et al., 2008; Ramani, 2009).

In similar fashion to others previously discussed, Gazzaniga’s vision for neuroethics is grand, firmly placing himself amongst those aspiring to a ‘brainbased philosophy of life’ (Rasmusson, 2009). Gazzaniga is confident that this project may be realised, and fiercely opposes any outside interference or insinuations that the field will be unable to regulate itself. A longer quote is necessary to demonstrate Gazzaniga’s (2006: xvii) particular mode of argumentation:

‘One of the things I would like most to do is eliminate the ‘slippery slope’ argument from neuroethical discussions... By arguing extremes, to which the slippery slope will take us, ethicists play on the public’s fears and suggest that if we give scientists an inch, they’ll take a mile. The truth is, most of these arguments are the stuff of science fiction. Take the “humanzee” example – the fear that scientists would cross a human with a chimpanzee using modern genetic manipulations. You present the humanzee as a possibility, and suddenly everyone’s afraid of letting scientists grow human stem cells in mice – research that might lead to cures for Parkinson’s, Alzheimer’s, and other diseases.’

Yet the ‘humanzee’ is an odd and dated strawman to invoke, and it is difficult to find any well-regarded commentator – from the academic sphere or otherwise – proposing that neuroscientific developments should work towards anything remotely comparable to this...
example. Gazzaniga’s railing conjectures of regulatory interference and characterisations of public concern bent on creating roadblocks to the development of potential cures for neurodegenerative diseases and other disorders of the brain is similarly without substantive evidence.

Still, Gazzaniga (2006: xvii) goes on:

‘What is it about the biological and neurological sciences that is so frightening? Fear of change? It was only 300 years ago that bathrooms were introduced. Change can be good. Fear of the unknown? We can imagine Martians, but that doesn’t provoke ethicists to argue that we shouldn’t try to land on Mars. Fear that new technology will be used for evil? We know what nuclear bombs can do, but we continue to build them. The fact is, the positive things that are occurring in laboratories far outweigh the tiny number of possible strange uses. Even if a lab were given over to a latter-day Boys from Brazil cloning project, it wouldn’t have an impact, because we are a moral society that will not allow such extremes.15 While they have occurred throughout history, we have gotten rid of them—whether they be extreme dictators, extreme fashions, or extreme drugs. It does not make moral, political, or social sense to allow the fear of the extreme to hinder the good.’

For a modern discipline such as sociology, which has done much to elucidate the fraught relationship between an ‘extreme’ event such as the Holocaust and the overarching characteristics of modernity (Gerson and Wolf, 2007; Bauman, 1989), Gazzaniga’s reassurances that such ‘extreme’ events are things of the past are not especially convincing, nor is the assurance that empirical neuroscience, in itself and unfettered, can be a reliable protectorate of the ‘good’. The implication that the neurosciences, and particularly neuroethics, may serve as such authorities is grossly unsubstantiated, and we might indeed be concerned by the historically naïve arguments that are voiced in the name of this particular scientific enterprise and may come to inform public policy (Edwards, Gillies and Horsley, 2015). This mismatch between such intensive gazes and expansive ends is especially the case when, in his defence of genetic engineering, Gazzinga (2006: 53) opposes ‘the basic, gut concern’ many might feel by pointing to a strange rationale of our essential ‘humanity’:

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15 Philosopher Ingmar Persson and bioethicist Julian Savulescu (2012), though equally supportive of this endeavour of ‘hard’ transhumanism, actually put forward an inverted justification, suggesting that we live in societies of rapidly escalating risk brought about by our own actions, and hence need to neurologically intervene upon ourselves as ethical subjects, in order to avoid causing our own demise. This will be discussed further in Chapter Three.
‘The basic, gut concern with genetic enhancements is that with the advent of genetic engineering we’ve become involved in some kind of massive dehumanizing effort. But what is it to “dehumanize”? We are talking about a practice that exists only because of the very nature of being human: to discover, to think, to figure out new ways to do things. How, then, can using this very human skill, using the brain, the thing that makes us human, be accused of “dehumanizing”? Isn’t it the ultimate human skill?’

It may be troubling to remind ourselves, but in response to Gazzaniga’s framing of ‘progress’ and ‘humanity’ it would be negligent not to recall that it was indeed a highly rationalised society that oversaw the Holocaust. The Adolf Eichmann so adroitly captured by Hannah Arendt (1963) was an efficient bureaucrat who, in the name of a society that prized its intellectual culture and scientific achievements, displayed an ability to frame his ‘ultimate human skill’ solely towards how best to satisfy rationalised dictates of a heinous regime, which is to say, he so instrumentalised himself in a way where he was rendered incapable of making sound ethical judgments. As Arendt famously observed, Eichmann (who, for his part, considered himself a follower of the Kantian imperative) thus justified the most profoundly dehumanising acts by an appeal to authority and the accompanying belief that he was contributing to a societally beneficial project. We should therefore be exceedingly wary of any suggestions that our ingenuity in itself is the best way to realise our ‘humanity’.

That said, I am equally cautious towards the dystopic form of argument in which all roads lead to the Holocaust, and I certainly do not mean to identify the discipline of neuroethics as the epistemological frame of any future fascist cause. However, the claim that the practice of ethical thought and our peculiarly modern, Western form of rationality are identical is one that the social sciences have long criticised from a number of angles (Kuhn, 1962; Foucault, 1970; Feyerabend, 1975; Haraway, 1988; Latour, 1993; Hacking, 2002). It is worth remembering, too, that Gazzinga’s book has been highly cited, serving as one of the bedrock texts in establishing the legitimacy and potential of neuroethics within the public imagination.

Gazzaniga is a feted neuroscientist who was considered of sufficient character and intellectual rigour to be appointed to the President’s Council of Bioethics during the Presidency of George W. Bush. Suffice to say, then, that Gazzaniga has served as an influential figure in how we may come to be constituted as ethical subjects. As neuroethics steadily increases its influence within academia and in the greater public sphere, exponents like Gazzaniga (2006: 178) are seeking to reconfigure notions of the self and its wellbeing, including through an aspiration of developing a ‘universal ethics’ driven by empirical cognitive neuroscience:
‘I am convinced that we must commit ourselves to the view that a universal ethics is possible, and that we ought to seek to understand it and define it. It is a staggering idea, and one that on casual thought seems preposterous. Yet there is no way out. We now understand how tendentious our beliefs about the world and the nature of human experience truly are, and how dependent we have become on tales from the past. At some level we all know this. At the same time, our species wants to believe in something, some natural order, and it is the job of modern science to help figure out how that order should be characterized.’

This ‘no way out’ rhetoric is found in many of the more forthright appeals for neuroethics, stoking an imperative to repurpose ourselves so as to contend with the risk societies we find ourselves precariously wedged within (see Chapter Three). But would we wish the likes of Gazzaniga to be leading such a charge?

Thankfully, not all advocates of a universal ethics through neuroscience are as blusterous and unreflective as Gazzaniga. In particular several philosophers and ethicists have developed cogent, coherent, and measured arguments for subscribing to neuroethics. Such insights combine sound technical knowledge of laboratory science and an understanding of current limitations of research (so as to avoid contentions that delve into unhelpfully utopian or dystopian speculations). Combined with this is an acknowledgment of socio-political sensitivities, together with a thorough grounding in the nuance and complexity of the ethical issues raised, informed (to an extent) by a sense of humility that shows an awareness of our collective capacities for self-destructive hubris that is made possible when our ambitions are unchecked. This cautiously negotiated intellectual space is where neuroethics presents itself as a discipline that demands meaningful engagement and somewhat opens itself up to transdisciplinary engagement.

The philosopher Neil Levy, in his foundational Neuroethics (2007) text – though still, I will argue, too hasty in seeking to colonise lines of academic inquiry into the self and its wellbeing – makes lucid arguments for the disciplinary legitimacy of neuroethics, while also displaying due reticence and deference regarding what the field can reasonably hope to achieve in the near future. While the following discussion will still take exceptions to some of Levy’s ideas it is worth noting that his work is less immediately concerned with the grand overarching project of bettering homo sapiens through ‘universal ethics’, and is instead directed towards reconfiguring firm preconceptions we collectively hold of the ethical subject, thus clearing the way for the field’s ongoing development.
Refreshingly, Levy does not attempt to shoehorn all of the social world into the brain, and instead proposes the adoption of an *externalist* ethics, one that recognises the distributed quality of action and judgment, and where the boundary between agents and context ‘is taken to be much less significant than is traditionally thought’ (Levy, 2007: xi). Like many proponents in the field Levy emphasises that neuroethics – while requiring the expert gaze of those suitably equipped in the mind sciences – will not upend conventional conceptions of selfhood so much as contribute to incremental improvements in the human condition. Nonetheless, Levy (2007: x) does venture to claim that such a project would ultimately enable us to exercise ‘unprecedented degree of control over ourselves’, an aspiration that he suggests is not especially radical, given that we have always been ‘self-creating and self-modifying animals’ (xiii).

However, this essentialist appeal to our ‘self-creating and self-modifying’ capacities raises a number of problems. Firstly, if we are encouraged to adopt materialist understandings of our constitution as ethical subjects and our propensity to good action, does this entail that whatever we mean by ‘ethics’ will now be modularly bound in those spaces and substances that we determine to be its causal mechanisms? What knock-on and looping effects of reflexive subjectivity might this generate, when self-modification is postulated as both constitutive of the human essence and the *raison d’être* of neuroethical knowledge and application? Secondly, as Malabou (2008) has observed, we cannot fail to note the coincidence between this supposedly universal quality of self-modification and the very particular image of the ideal subject associated with Post-Fordist capitalism. Moreover, as Rose and Novas (2008) have noted, while the demands of ‘biological citizenship’ are ostensibly non-coercive this does not make them any less compelling for contemporary subjects, for whom work upon the self is both an exercise of capacity and a self-actualising task. Thirdly, faith in the possibility of precisely targeted neurological intervention seems to involve a commitment to a particular form of mental hygiene, one based upon the subversion of default volitions in favour of cultivated thought and action consciously induced and enacted at levels below conscious thought. Considered altogether, could we ever expect to produce a reliable synaptic ledger in this incredibly dynamic context?

To his credit, Levy does recognise the limits of hypercognitive conceptions of the self, emphasising that the vast majority of volitional impetus occurs at a subpersonal level, while an over-emphasis on ‘control’ is ‘a distant descendent of the Cartesian view …[that] would shrink the self down to a practically extensionless, and probably helpless, point’ (Levy, 2007: 23-4). Levy’s alternate grounding image of the human subject is a temporary, ever-shifting assemblage of volitions, whereby unity is achieved through the successful labour of aligning
lines of disposition into meaningful action, a view informed by the extended mind thesis of Andy Clark and David Chalmers\(^\text{16}\) and also the embodied, affect-driven cognition of Antonio Damasio (Levy, 2007: 27-33, see also Levy 2007). Though this marriage of perspectives may at first glance appear incongruous it presents a model of the ethical being that may actually prove quite palatable to many, for it posits: agents capable of forming (or more precisely ‘receiving’) volitions in certain contexts; agents who are in large part the products of their cultures; agents aided or constrained by human and non-human actors that serve as extensions of our collective cognition; and embodied agents, with volitions felt upon the body, which in turn bears the imprint of accumulated experience. This is an incredibly complex entanglement, but Levy also reassuringly rejects the presumption that we might ever have a coherent, all-encompassing model for this externalist model of ethics.

Yet, when Levy shifts from theoretical framing to real-world application, some objections to his claims may be raised. Here is one of Levy’s (2007: 61) central claims, taking inspiration from the extended mind thesis of Clark and Chalmers:

‘... if some part of the external world functions in a manner that, were it internal to the skull, we should have no hesitation in calling cognitive, we should regard that external resource as part of the mind. Analogously, I suggest an ethical parity principle (EPP). The EPP comes in two versions, a strong and a weak version, corresponding to the hypotheses of extended and embedded cognition respectively:

EPP (strong): Since the mind extends into the external environment, alterations of external props used for thinking are (ceteris paribus) ethically on a par with alterations of the brain.

EPP (weak): Alterations of external props are (ceteris paribus) ethically on a par with alterations of the brain, to the precise extent to which our reasons for finding alterations of the brain problematic are transferable to alterations of the environment in which it is embedded.’

So, argues Levy, if we accept that the extension of my cognitive self into an object (a diary being the commonly used example), one I deem entirely parallel to my intentional being, thereby constitutes the mind extending and inscribing itself on the external world, then any alterations upon this object are effectively equivalent to alterations upon the brain. Ethically,

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\(^{16}\) The extended mind thesis, in its briefest definition from Clark and Chalmers (1998: 8) themselves, suggests a form of parity principle of cognition, whereby ‘if, as we confront some task, a part of the world functions as a process which, were it done in the head, we would have no hesitation in recognizing it as part of the cognitive process, then that part of the world is (so we claim) part of the cognitive process.’
therefore, there is no difference in simply skipping the mediator of the external prop and intervening directly upon the brain, whatever that may entail in practice.\textsuperscript{17} Clearly, as Levy himself notes, everything hinges here upon what we consider to be analogous. For instance, in Levy’s (2007: 113) estimation, ‘some of the traditional means of changing minds mechanize the self to just as great an extent as the new neurotherapies do’, including the use of psychotherapy or physical exercise as a means of alleviating depression. Therefore, argues Levy, ‘why should suspicion fall upon one means of changing minds and not the other?’.

Through this rationale Levy (2007: 64) thus suggests that aversions to his EPP tend to be born of a naïve prejudice ‘that would confine mind to skull’.

While I am in agreement with Levy regarding untethering the practice of ‘mind’ from the brain-as-organ, we must still recognise that the means by which we arrive at the synaptic ledger of ‘parity’ may prove significant. We must not forget that where a supposed ethical quality is housed, how such containment is rationalised, what new substantiality we then accord to the quality in question, and how we instrumentalise ourselves in according our habits and conduct to these new bounded properties is of ongoing significance, for this will likely change the makeup of the ethical quality or the desirable state in itself. These ‘looping effects’ that come with attempting to affix properties of the always reflexive human subject cannot be discounted (Hacking, 1995). For our current purposes, what is important to observe is that this reconfiguring reflects a broader conflation of ethical thought into a newly demarcated space, one that transforms the nature of what we have typically understood ‘ethics’ to denote.

It is this transformation of ethics-in-itself that another notable philosopher of mind, Thomas Metzinger (2009: 233), raises in his optimistic proposal of ‘consciousness ethics’. Metzinger observes that underpinning much of the current fascination with neuroscience is the rhetoric of potential; that we are now in a position to break the chains of our minds as tools once assembled solely to satisfy evolutionary imperatives, and so reorient and repurpose ourselves to achieve new ways of being in the world. For now, however, we are mostly ‘stuck’ in the ‘Ego Tunnel’ where:

‘Our conscious model of reality is a low-dimensional projection of the inconceivably richer physical reality surrounding and sustaining us. Our sensory organs are limited: They evolved for reasons of survival, not for depicting the enormous wealth and

\textsuperscript{17} Or, as it stands in the ‘weak’ version of Levity’s parity principle, such alterations should not be considered ethically different to others merely because they are induced, emergent, and enacted inside the cranium. In this way distinctions between ‘internal’ and ‘external’ are not recognised or are otherwise downplayed in applied neuroethics, for ultimately everything must pass through the brain.
richness of reality in all its unfathomable depth. Therefore, the ongoing process of conscious experience is not so much an image of reality as a tunnel through reality.’

Metzinger, 2009: 6

We might well draw parallels with the actors in Plato’s cave who, in crafting narratives out of shadows, miss the infinitely more wondrous phenomena that play just beyond the bounds of current capacities of perception. But the implication is also that we are now – if only obliquely and crudely – contemplating the possibility of espying the ‘enormous wealth and richness of reality’ through interventions directly upon our brains. Metzinger (2009: 238) also recognises that inequalities threaten to abound in enacting practices of consciousness ethics, and thus we must remain vigilant in protecting ‘a principle of phenomenal liberty’. In this way, Metzinger (2009:238) suggests, we might realise a form of socially responsible ‘rational neuroanthropology’:

‘Developing a consciousness culture has nothing to do with establishing a religion or a particular political agenda. On the contrary, a true consciousness culture will always be subversive, by encouraging individuals to take responsibility for their own lives... The crucial question is how to make use of the progress in the empirical mind sciences in order to increase the autonomy of the individual and protect it from the increasing possibilities of manipulation. Can we ride the tiger? If we demystify consciousness, do we automatically lose our sense of human solidarity at the same time? If rational neuroanthropology shows us the positive aspects of what it means to be a human being, we can systematically cultivate those aspects of ourselves.’

My concern here is that an aspiration towards a ‘neuroanthropology’ points to an attempt to objectively parse the neurological subject, yet this project appears already normatively laden and framed within contemporary understandings of liberty, autonomy, and personal responsibility. Of course, defending such principles is admirable as a means of warding off the possibility of any authoritarian knowledge claims. Yet my suspicion is that although Metzinger and others aforementioned may gamely attempt to find an Archimedean point by which to understand ourselves we may instead simply reinscribe broadly humanist ideals in new, harder forms. This reinscribing of humanism limits us in chancing upon new ways to conceive of cognition and selfhood, of findings paths less insistent on abiding socio-historically contingent framings of the modern subject. The following chapter will explore this shaping of the ideal citizen-subject by way of the neurosciences in greater detail, but for now we should first explore the empirical practice of applied neuroethics.
Empirical neuroethics in practice: Trolley problems and dismantling deontology

So how, in practice, might a neuroethicist develop a moral spectroscope and synaptic ledger by which to conduct empirical research and so: circumscribe and justify a claimed epistemic privilege, produce verifiable findings, and use such findings to propose practical applications? Consider the following hypothetical:

‘You are standing on a platform next to a train track. Approaching is a speeding train hurtling out of control. Five people, for unknown reasons, are tied to the track and will be killed by the oncoming train unless action is taken. Before the five people there is a sidetrack on which one person is tied. On the platform there is a lever which if pulled will divert the train onto this sidetrack, thus killing one instead of five. Is the right action to pull the lever?’

This is a common iteration of the well-known ‘Trolley Problems’, a set of thought experiments in normative ethics and moral philosophy, first developed in contemporary form by Phillipa Foot (1967) and further adapted by Judith Jarvis Thomson (1976 and 1985), amongst many others. Consisting of a series of hypothetical dilemmas, each iteration differed slightly with regard to the possible outcomes of the incident and the respondent’s available courses of action. Typical academic debate on these dilemmas usually centres around the various means of weighing outcomes, whether there is a moral obligation to act (or intentionally not act), and the extent to which this obligation may reach.

Almost all lay respondents support the pulling of the lever in the above iteration of the dilemma (Hauser et al. 2007). Similarly (although there appears to be slightly more reticence) most academic philosophers support the ‘switch’ option (Bourget and Chalmers, 2013: 16). Interpretations of the trolley problem from moral philosophers and ethicists range from the basic act utilitarian perspective that one is morally obligated to effect whatever action may maximise the ‘good’, to an unflinching deontological view whereby participation of any kind
renders one complicit in a moral wrong.\textsuperscript{19} Alternatively, one can invert these normative positions and subsequent action, for example by positing a form of consequentialist argument that one should refrain from taking any action in order to render certain moral wrongs ineffectual in their desired outcome.\textsuperscript{20} Or, a deontological perspective might argue that your very presence in this unfortunate circumstance entails a compelling injunction towards a beneficial outcome, and that based on the available evidence you are ethically obliged to exercise your fortuitous agency in this matter. Many more positions can be found in this complex, nuanced literature (Otsuka, 2008).

While, as noted above, the majority of lay subjects support pulling the lever in the above iteration, less consensus is found when the circumstances are adjusted slightly. A common alternative to the above iteration presents a scenario where the five people remain tied to the track, but now there is no longer a sidetrack. Instead, above the track and before the five unfortunates, is a footbridge upon which you and a large man are witnessing proceedings. In this scenario, the respondent can opt to push the large man off the footbridge onto the track, stopping the train at the expense of the man’s life, but sparing the five others. In this second iteration the possible outcomes are still the same as the side track dilemma (at least in a crude net sense, sacrificing one to save five). However, there is a much greater degree of resistance and dissonance felt amongst lay respondents, and so when respondents are pressed on why they make a distinction between the two scenarios many struggle to articulate their aversion to taking action in the footbridge iteration, often regardless of how adamant they are in their decision (Hauser et al. 2007).\textsuperscript{21} However, one widely held explanation for this aversion posits that the footbridge dilemma has a greater degree of emotional salience than the lever dilemma; the former requires what is essentially an act of violence upon another, whilst the latter is somewhat depersonalised by the mediating presence of the lever (Greene et al. 2001).

Taking this further, one explanatory view is that the crucial difference between the two iterations refers us back to the Kantian categorical imperative, particularly in considering self and others as ends over means (Thomson, 1986: 94-116). The question that emerges, then, is

\textsuperscript{19} Very briefly, utilitarian and consequentialist stances pertain to maximising overall outcomes, while deontological positions emphasise deference to rules, duties, and obligations.

\textsuperscript{20} A real world application of this would be a refusal to negotiate with hostage-takers as a means to negate or minimise the possibility of such future occurrences.

\textsuperscript{21} This ‘moral dumbfounding’ is a common occurrence in decision making that tests ingrained assumptions (Haidt, 2001), though I would also suggest that ‘dumbfounding’ somewhat misrepresents what may be better described as a differently valanced moral response, one not necessarily conducive to cogent and articulate explanations of a particular decision made. The presumption that we must precisely articulate our ethical stances in any given situation in order to assert their legitimacy appears to be another of those unreflexively Western assumptions, elevating a rationality that compels framings of the subject and its wellbeing down pre-set paths.
whether something like Kant’s categorical imperative is already inbuilt, existing a priori as a kind of universal ‘moral grammar’ (Mikhail, 2007). Empirically-inclined neuroethicists, however, posit that we need to go beyond abstract theorising to explain our responses to such dilemmas at a more substantive level, for there may be means by which we can improve upon our cognitive capacities when contemplating such fiendish problems. These empiricists suggest that we can derive and correlate likely motivations against chosen actions by observing brain activity whilst subjects are presented with moral dilemmas. In this way, faulty motivational mechanisms that lead to adverse outcomes can be mapped and used to develop techniques by which to reconfigure the ethical subject.

It is in this context that the use of fMRI through the highly influential work of Harvard neurophilosopher Joshua Greene and colleagues has emerged. Greene’s studies of subjects responding to moral dilemmas while being observed through fMRI have attracted great interest and debate around the validity and potential of this new synthesis of moral philosophy and neurology (see, for example, Haidt, 2007). More specifically, Greene’s ongoing research is concerned with observing localised activity of functionally bounded areas of the brain – according to current understandings of functional localisation – in response to moral dilemmas, such as trolley problems, and correlating the relative activation of reflexive ‘emotional’ v. deliberative ‘rational’ responses with outcomes chosen. Greene (2014) has posited that there is a form of dual process cognition involved in decision making, one that he likens to ‘automatic’ and ‘manual’ settings. Understanding this dual process, argues Greene (2014: 35), will enable us to reconfigure our brains towards the ideal realisation of consequentialist ethical norms:

“We should distrust our automatic settings and rely more on manual mode when attempting to resolve practical moral disagreements. So far, so palatable. But where does this lead? I believe it favors consequentialist approaches to moral problem-solving, ones aimed solely at promoting good consequences, rather than deontological approaches aimed at figuring out who has which rights and duties, where these are regarded as constraints on the promotion of good consequences... As private individuals, we should nearly always respect the conventional moral rules, but in establishing those rules (as voters and policy-makers) we should aim simply for the best long-term consequences.’

Greene’s assertion that findings from neuroethics may inform the development of public policy will be explored further below, but for the moment I will briefly trace the empirical underpinnings of such a potential future application. Through the stimulus of neatly...
circumscribed moral dilemmas, Greene and his colleagues derive relative measures of how different functional mechanisms within the brain are activated. These localised functional areas include the ventromedial prefrontal cortex (vm-PFC) and the amgydala, which play a significant role in fomenting emotional/autonomic responses (eg. disgust at the thought of pushing someone off a bridge), along with other functional areas such as the dorsolateral prefrontal context (dl-PFC), which is correlated with measured, deliberate, rational thought (Greene et.al, 2001; Greene and Haidt, 2002; Greene, 2005, 2007). Most of the time these two functional processes accord with each other, but fraught dilemmas may cause a form of intranspsychical conflict that results in a felt dissonance, strain, and arguably poorer overall decision-making outcomes. The failure to make decisions that result in best overall outcomes, says Greene (2008: 36), ‘cast[s] doubt on deontology as a school of normative moral thought’ and signifies a blind spot of our neurological capacities to rightly determine the ‘good’. This, of course, is an enormous claim with potentially paradigm shifting consequences across multiple disciplines.

To summarise, Greene’s neuroethical form of consequentialism seeks our assent on the basis of the following logical progression. Firstly, we must accept that five people dying is of greater consequence than one and that, given no other information, right action in this scenario entails the death (incidentally or otherwise) of one person instead of five. Secondly, we must concede that it is now – or will soon be – possible to observe that your decision to not effect this five-for-one outcome could be empirically proven to have been ‘thwarted’ by cognitive processes geared towards emotional salience that overrode your capacities for measured rational thought. Thirdly, therefore, if the above has been observed within a sufficiently rigorous experimental construct we must conclude that your brain is in some sense deficient with respect to wider societal expectations (but in ways that may be open to ‘correction’). Thus we have a supposed rationale towards reconfiguring the faulty subject toward socially desirable ends, achieved in a way akin to the functionalist correlation of brain lesions with differing cognitive capacities in much early neurological research. But would such a reconfiguring effectively disaggregate the ethical subject into a bundle of neurological functions determined by contingent circumstance, and what looping effects may be generated in becoming subject to such parsing of our ethical stances? One result could be an ironic subversion of subscribing to a normative ethic system in the first place, for the ‘ends’ are lost in the tracing and refining of a form of hyper-reflexivity that blazes straight past the subject itself. To be informed that your vm-PFC ‘overrode’ your ds-PFC may prove unsettling grounds on which to reorient our ethical subjectivity, with looping effects difficult to predict.
This neuroethical reconfiguring of the subject speaks to a particularly audacious ‘circulating reference’ (Latour, 1999: 24-79), where a transformational step-chain is enacted in order to render some property – in this case nothing less than ‘deontological normative ethics’ – commensurable with the statistical aggregations of sophisticated software programs that (through their own complex transformational chain) can trace blood oxygenation levels by way of magnetic resonance. Of course a great many more processes occur in this chain in order to remove ‘noise’ from the final output (see Joyce, 2006, 2008), but eventually the transformation is complete, with the resubstantialising of ‘deontology-in-action’ to causal mechanisms in the brain now labelled either operational or deficient. Yet while we may admire the ambition and technical sophistication of these efforts, too little appears to be said of the ‘irreality’ and tight circularity of these referential constructs (Rose and Abi-Rached, 2013: 78; Cohn, 2011), not to mention their usually WEIRD\(^\text{22}\) samples of research participants and questionable experimental designs (Henrich, Heine and Norenzayan, 2010). This irreality, circularity, and narrow sampling is worrisome given the weighty properties under investigation. Does the artificiality and crude cleaving from context of the experimental construct of a dilemma of life-or-death importance result in output that captures how the ethical subject might actually react in a comparable real world scenario, or might the construct capture something else entirely? And what of the body, excluded in all its visceral being of contemplating pushing men off bridges by being required to lie perfectly still for the MRI scan to be deemed reliable? Furthermore, the assumption that an undergraduate student – the typical participant in these studies (Henrich, Heine and Norenzayan, 2010: 65) – could saliently fathom the gravity of such courses of action in ways that are representative of the wider population, along with satisfying other standard requirements of measurement validity in experimental constructs, altogether seems highly questionable. Suffice to say improvements in the spatial and temporal acuity of MRI will do little to resolve these persistent incongruities. As it stands we may achieve little, presume much, and self-fulfil more in seeking to produce morality in a vat.

Nevertheless, there are those who wish to shift the terrain upon which we consider morality, positing that rather than observing morality at the interpersonal, institutional, or cultural level, we instead need to dig further into our neurological constitutions. This is a claim to epistemic authority in proposing that only when we understand the molecular mechanisms through which morality is enacted can we truly know our ethical capacities, and hence determine what

\(^{22}\) This acronym denotes Western, Educated, Industrialised, Rich and Democratic societies. The Henrich and colleagues meta-analysis cited here pertains to a persistent problem in psychological and neuroscientific research, wherein study participants are usually recruited from the student population in Western universities, a sample that has decidedly proven itself to be utterly unrepresentative of our species.
the good subject is and can be (Hartmann, 2011). Consequently, the material scaffolding of our being is now deemed ‘normatively significant’ in ways that are historically novel (Greene, 2014: 26-7). In this way intentional acts may be decomposed into neuronal mechanisms that brought said action into existence, and so threatens to reinscribe the brain as a rigidly bounded entity, an organ to be assessed with regard to its functioning as an ethical entity. The result of such a project, I will suggest, is a conflation of multiple branches of ethical inquiry that may in time prove unhelpfully restrictive.

Conflating ethics and the ideal subject into the brain terrain

At this stage the reader may be wondering why ‘ethics’ and ‘morality’ are deployed largely interchangeably throughout this discussion. The primary reason is that, in practice, the kind of empirical moral philosophy and applied neuroethics that I am concerned with here does not recognise a distinction between the two. Whether it be ‘theory’ and ‘practice’, ‘internal’ or ‘external’ referents, and ‘character’ or ‘custom’, all these previously held distinctions and counter-referents of ‘morality’ and ‘ethics’ become subsumed under that which can be traced inside the skull. The main branches of ethical inquiry – descriptive, normative, applied and meta-ethical – are conflated in the cause of establishing a ‘common currency’ of wellbeing (Greene, in interview with Suttie, 2013). Such common currency is sought through the intensive gaze upon our neural mechanisms, so that ‘once those inner workings are revealed we may have less confidence in some of our judgments and the ethical theories that are (explicitly or implicitly) based on them’ (Greene, 2014: 2). Understanding these ‘inner workings’, suggests Greene, will allow the development of a ‘metamorality’ which we could reasonably be expected to subscribe to as neurological citizens furthering the interests of collective flourishing (Greene, 2013: 15).

The philosophical and ethical debate of centuries is thus reduced to a biomarker, neatly contained within single subjects lying in MRI machines, and made readable in the equally technical and artful constructions of brain images. In this configuration, the complex loops and tangles of ‘nature’ and ‘nurture’ are ‘not jettisoned, so much as absorbed, never to re-surface because the overall research trajectory sufficiently continues to ensure only new areas of doubt or complication will arise’ (Cohn, 2011: 188). From the data generated from these experimental constructs Joshua Greene (2013: 289-346) claims to have found the basis for a comprehensive ethical framework of ‘deep pragmatism’. This framework, Greene suggests,
could resolve the seeming incongruence between the obligations we uphold to those in our immediate vicinity and our failures to recognise comparable obligations to those further afield, thus addressing some of the supposed deficits of our ‘common sense morality’, as I discuss further in Chapter Three.

Once translated into the common currency of the functionally localised brain the once elusive ethical property to be measured now takes on a ‘denuded nature’, one that renders it more flexible (albeit in narrow, pre-set parameters), and able to swiftly move up and down the chain of transformation; from molecular assembly to shaping policy development (Cohn, 2011: 196).

What is especially distinct about empirical neuroethics, moreover, is the degree to which increasingly abstract and contextually nuanced qualities are now intensively gazed upon, and correlated to material differences in the brain that are not necessarily the result of trauma, disease, or other comparable aberrations. Rather, such qualities are widely prevalent, arguably normally distributed differences, yet now are being tied to weaker propensities to accord oneself to prevailing normative standards. This poses a radically new means by which to reconfigure subjects.

Greene (2008: 38) is unflinching in leading such a charge to circumscribe normative ethics under the gaze of neuroethics, even to the point of directly challenging the authority of philosophy in this territory:

‘It is assumed that philosophers know exactly what deontology and consequentialism are because these terms and concepts were defined by philosophers. Despite this, I believe it is possible that philosophers do not necessarily know what consequentialism and deontology really are.

How could this be? The answer, I propose, is that the terms “deontology” and “consequentialism” refer to psychological natural kinds. I believe that consequentialist and deontological views of philosophy are not so much philosophical inventions as they are philosophical manifestations of two dissociable psychological patterns, two different ways of moral thinking, that have been part of the human repertoire for thousands of years. According to this view, the moral philosophies of Kant, Mill, and others are just the explicit tips of large, mostly implicit, psychological icebergs. If that is correct, then philosophers may not really know what they’re dealing with when they trade in consequentialist and deontological moral theories, and we may have to do some science to find out.’

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Recall the eliminative materialist position that opened this thesis, an uncompromising stance in which scientific inquiry ‘can be seen as a gradual process whereby speculative philosophy cedes intellectual space to increasingly well-grounded experimental disciplines’ (Churchland, 2008: 409). The above thesis from Greene, proposing the ‘natural kind’ affixing of normative thought, is this very kind of eliminativist program in action (see also Greene et al. 2004). In Greene’s estimation the expounding of ethical systems was never really the domain of philosophers to begin with, for Kant, Mill, and others have merely overlain neatly aligning rational abstractions on what was already present in ‘underlying structures’ or ‘essences’ of volitional being (Greene, 2008: 38). That is – to channel neuroethical views discussed earlier – we used our most ‘human’ quality of rationality only to justify weaker, ingrained preferences not driven by our ‘higher’ humanity. Greene’s ‘deep pragmatism’ is based upon the conclusion that deontological judgments are typically swayed by emotional, immediate responses, while consequentialist judgment is usually more considered. From this the assertion is made that Kantian ethics and deontology in general – while in principle defensible through ‘fancy philosophising’ (Greene, 2008: 39) – is in practice often simply a coherent narrative overlay for emotional dispositions that subjects are averse to untethering themselves from, resulting in cases of ‘intuition-chasing’ (Greene, 2014: 37). Hence the entire school of deontological ethics is open to dismissal as ‘a kind of moral confection’ (Greene, 2008: 63), presumed to be ‘affective at its core’ (65), and dodging the supposed real labour of being a moral citizen in adopting ‘just so’ (68) explanations that too easily accord with comforting preconceptions.

Responses to Greene’s attempted dismantling of deontology argue that he too hastily reduces deontology to the unyielding observance of duty, and then unduly expands the breadth of consequentialism in positing it as equally capable of respecting the humanity of others, despite this being the generally agreed comparative advantage of deontological stances (Timmons, 2008; Nagel, 2013). Timmons (2008) goes further with this rebuttal in tentatively suggesting that we should not be dismissive of the comfort derived from a principle of action that can be willed for others; that is, there is consolation that may come in knowing that we all subscribe to categorical imperatives, even if such obligations may not ‘maximise’ overall outcomes in measurable ways. Further to this, and a more sociological standpoint, would call for greater epistemological humility in recognising that single moral dilemmas shorn of social contingencies – so that they may serve as independent variables – are highly artificial constructs of experimental method, rather than perfectly mimetic representations of reality (regardless of our chosen point of entry into ‘reality’ that may come to inform how we conduct ourselves as ethical subjects). Corollary to this, the aversions to action that Greene associates with ethical failure are not necessarily instances of neurologically ‘faulty’ reasoning, but rather
learnt dispositions, whereby the undertaking of highly confronting acts such as, say, pushing someone off a bridge, requires not only that we overturn our initial affective reaction of revulsion. It also entails that in this correction we effectively concede and confess ourselves to be flawed as ethical subjects, plagued by evolutionary hangovers not befitting the complexity of modernity and the maximising of wellbeing. Greene’s empiricism risks generating hard prescriptions that seem unlikely to hold together in practice unless we consent to individualised practices that subvert affective responses – that our ‘intuition-chasing’ be dulled and diverted – which in turn will likely have unforeseen consequences for the subject if we opt to enact such a regime.

From its beginnings sociology has dedicated itself to tracing such effects, but in recent decades sociological efforts have tended to eschew the analysis of ‘morality’ in favour of the study of structure, conflict, stratification etc. (Hitlin and Vaisey, 2013: 52-3). There are, however, notable exceptions to this trend that look to reinvigorate a ‘sociology of morality’ (Bellah, 1985; Lamont, 1992; Hitlin and Vaisey, 2010; Stets and Carter, 2012). Furthermore, given the emergence and increasing scope of the new life sciences and other ‘third culture’ efforts that seek to ground assessments of conduct and wellbeing in the fixity of our biological and neurological constitutions, perhaps the sociological study of ‘morality’ and ‘meaning’ is worth further developing in response. Such efforts – which this thesis in part seeks to contribute to – aim to elucidate the entangled quality of moral being, and the futility of attempts to cleave ‘morality’ from its contextual binds:

‘If the old sociology of morality was Durkheimian—seeing morality as a property of entire societies and binding its members together—then the new sociology of morality is more Weberian… Moral sharing exists, but at many cross-cutting and competing levels. Moral motivation exists, but these motivations struggle with one another and with nonmoral concerns in their expression. Morality can bind groups together but it can also be the subject of negotiation, contestation, and exclusion. The new sociology of morality looks beyond just norms and values, casting a broader net that includes narratives, identities, institutions, symbolic boundaries, and cognitive schemas.’

Hitlin and Vaisey, 2013: 53-4

Morality is thus multiply valanced, and not to be easily bound in one single ontological terrain. It is both independent and constitutive of the subject; something of a moral reality exists separate to us, but we cannot conceive of ourselves as agents without reference to it. With this and the possibility of looping effects in mind, we should therefore remind ourselves to practice an epistemological humility in not presuming to have finally ‘revealed’ – or indeed to
ever ‘reveal’ – the underpinnings of our morality, for if the concept is to retain its productive and instructive quality we must recognise how morality circulates through multiple substantialities and contexts.

It should be noted that Greene is (somewhat) cognizant of these considerations, and likewise does not wish to see ‘morality’ become entirely cleaved from the willing and feeling subject, and wider social contexts. Greene (2008: 76) concedes that there may be limits to the ‘empirical debunking of human moral nature’, for we must consider how to best ‘draw the line between correcting the nearsightedness of human moral nature and obliterating it completely’. Similarly Thomas Metzinger (2009: 212) advises that with the ‘Consciousness Revolution’ promised by some neuro-advocates must be tempered against the risk that a ‘vulgar materialism may take hold’. It is this tension between ‘correcting’ and ‘obliterating’ our supposed faults without rendering ourselves into vulgar forms that will now be addressed.

The assumption built-in to Greene’s moral dilemma studies is that through observing the machinations of ethical thinking at the neurological level we may avoid the problems of interpreting (often unreliable) personal testimony in comparable studies that often rely heavily on self-reporting. The participant as ‘blackbox’ – and moreover the sociological complexity of morality – can thus be sidestepped, for the effects of the neatly constructed, iterative stimuli of moral dilemmas can be observed as they are molecularly realised in close to real time, with a presumably fixed and wholly representative substantiality hitherto unseen. As noted earlier, the assumptions regarding the construct validity of these stimuli are questionable, and appear to require a strict bounding of the space in which morality is considered operative. The risk is of generating an epistemic circularity, one that presupposes certain worldviews now rendered into universal ‘immutable mobiles’ (Latour, 1986) within the brain, when in actuality they are inescapably socio-historically contingent. This newly immutable, universal property may then be transferred into practical applications. For an illustrative example of this potential immutability informing practice, observe the following quote from Greene (The Situationist, 2010) during an interview:

‘I think that it is really the automatic settings, the emotional responses, we’re opposed to that. And when we understand how they work, and where they come from I think we’re going to realize that they’re good for some things, but not for other things, and not generally good for public policy, and I think that a better scientific understanding is likely to push us in a more utilitarian or consequentialist direction... And once it’s in that light, certain values are likely to trump other values in competition with each other.’
Consider also this proposition from Neil Levy:

‘If, for instance, it can be shown that some (and only some) of our moral responses are irrational, because driven by raw emotion, then we have a powerful reason for rewriting policy to discount these responses.’

Levy, 2010: xxi

What Greene and Levy are essentially proposing is a form of neuroscience-based ‘deliberative democracy’, where our various positions on issues may be screened and processed through the neurological gaze (Sokolon, 2012; Rose, 2010). Greene’s perspective on our ‘automatic settings’ and public policy are also echoed by the (now disgraced due to academic misconduct) evolutionary biologist Marc Hauser (2006: x) who argues that it ‘is not only possible but likely that some of the intuitions we have evolved are no longer applicable to current societal problems’ and so require repurposing through targeted intervention. The wider implication here is that one’s ethical stance at any given time is open to pathologisation through the cool gaze of those who claim authority over the ‘neu-normal’ parameters of citizenship.

As sociologist of culture and cognition Karen Cerulo (2010: 118-9) has observed, such applications of insight from the cognitive sciences to complex socio-political issues are already occurring, particularly around the use of specific rhetorical strategies in the formal political arena as a means of targeting sub-conscious loyalties and volitions. Similarly, moral psychologist Jonathan Haidt – a research collaborator with Joshua Greene (Greene and Haidt, 2002) – has applied his social intuitionist model of morality to the practices of political rhetoric and persuasion, and the persistence of seemingly incommensurable and irreconcilable gaps between differing actors and their ideological stances (Haidt, 2012; Haidt and Graham, 2007; Graham, Haidt and Nosek, 2009). Historian of science Joelle Abi-Rached (2008) has also observed the willingness of neuroscientists to insert themselves amongst topical political debates, with the most egregious recent example being a New York Times op-ed, wherein a number of neuroscientists predicated how ‘swing voters’ would vote in the upcoming Presidential elections based on fMRI scans conducted while subjects were viewing images and videos of the various Democratic and Republican candidates. As Abi-Rached (2008: 1158) notes, these assessments were not preceded with or followed by peer-reviewed research, which amounts to a worrisome forgoing of the usual due process such claims should go through, especially given their relatively weighty sensitivities. In any case, with the increasing translation of neuroscience into ethical and political arenas it is our faulty (but reparable and improvable) brains that are increasingly blamed for our collective ills, and framed as the promising new site of enacting our reconfiguration as subjects.
The hope for some neuroethicists is that neuroscience may serve as an independent arbiter of our capacity to contribute to society as enfranchised citizens, or to be held as legally responsible agents in certain contexts. Yet the sting of past failures should remind us to be exceedingly wary of views that would grant authorities the epistemic privilege to ‘discount’ specific utterances by reference to ‘natural’ properties. If not conducted with due caution such undertakings speak to forms of hubris that may not so much deftly reveal the underlying strata of selfhood, but rather bludgeon pre-existing worldviews into new containers and overlays. Moreover, the belief that one may find themselves subjected to having their views processed for the corrupting influence of what Levy describes as ‘raw emotion’ (see above) is likely to result in looping effects difficult to foresee, and thus negates the very precision such ‘neuro-policy’ seeks to implement. We should approach with caution the prospect of having productively elusive ideals of wellbeing and right thinking hardened, affixed, and then bequeathed to authorities who will exercise an epistemic privilege over this new domain.

Here then, to conclude this chapter, is where I will first signal an alternative approach further developed in the following chapters, one that seeks to undo some current idealisations too often left unquestioned. For one, as critical theorist Sara Ahmed (2010: 199-204) pithily observes, the catch-all and seemingly unassailable concepts of ‘happiness’ and ‘wellbeing’ may well be ‘philosophy’s foundational tautology’, the arbitrary stopping point that ‘might suspend obligation to refer to anything else in making a good argument’ (Ahmed, 2010: 203). But if these properties are imported into the brain this tautological foundation may further take on a substantiality that renders ‘happiness’ and ‘wellbeing’ even more difficult to interrogate. Under such a guise measures of these properties are purportedly cleaved of contingency, girded by objective empiricism and hypothetico-deductive rigour, but in actuality are potentially obscuring mechanisms ‘orthogonal to the real value judgment’ (Rosenquist and Rothschild, 2012: 173). Such rigid and strictly circumscribed epistemic capture of wellbeing risks producing, suggests Ahmed (2010: 123), what Nietzsche admonished as that peculiarly ‘English’ variety of utilitarianism; seeking a precision of maximising wellbeing that arbitrarily reduces such things to hollow and bland maxims that simply reinscribe in diminishing fashion already prevailing norms. Today this process may take on a greater urgency as ideologies of good citizenry are increasingly mapped into their material correlates, thus adding layers of hard verisimilitude by way of creeping reductionism.

Philosopher and critical theorist Catherine Malabou (2008) similarly illustrates this process in action by tracing how narrow understandings of ‘neuroplasticity’ are being folded into current overarching norms as ethical injunctions of living well. Enthusiastic proclamations of the ‘plasticity’ of the brain are abundant in current discourses, elucidated in popular science books
designed to capture the public imagination and inform new personal ethics of potentiality. This trend, argues Malabou (2008: 8), is one of both promise and peril, for conceiving the brain as a ‘plastic’ entity may well create the potential for ‘neuronal liberation’, but only if we can resist trends towards a ‘cybernetic frigidity’ that reduces and contains the brain within ‘a domain of implacable organic necessity’, while also rejecting ‘liberation’ framed in purely neoliberal drives towards maximising one’s value-bearing capacities.

Malabou (2008) contrasts ‘plasticity’ with ‘flexibility’ in terms of both conceptions of the brain and overarching societal structures and normative expectations. To be ‘flexible’ is to be adaptable only in a submissive sense, but to be (truly) ‘plastic’ is to be adaptable to a realm of potentials. When framed as such within the relation between technologies of production, biopower, and governmentality, we see that Malabou (2008: 30) is proposing that we are currently amidst an ideological struggle of great consequence, for ‘our brain is in part essentially what we do with it’. As it stands, the brain is often pedagogically framed within the modes of operation characteristic of Post-Fordist capitalist society, wherein we are called to exercise our capacities as ‘flexible’ subjects, adaptable to according ourselves to those tasks that produce the greatest possible value in a given setting (Malabou, 2008: 40-46). This flexibility is spun as an aspirational term, making a virtue of the willingness to maximally realise one’s market potential as a commodity of labour (Malabou, 2008; see also Slaby, 2010; Hartmann, 2011). However, if the ethical injunction inherent in ‘flexibility’ is rendered equivalent to the popularly-invoked rhetoric of ‘plasticity’ – in the neurological sense – then contingent ideological stances risk being firmly inscribed into the brain terrain. Slaby (2010) echoes this observation, fearing that neuroscience may smuggle ideological presumptions into our ‘natural’ constitutions, thus substantialising it in ways that tacitly support overarching imperatives.

Yet our neuroplasticity is a much too complex and entangled phenomenon to be wrangled into narrow ends of our own devising through currently crude moral spectroscopes and synaptic ledgers. Neurology, the body, and the social interdetermine each other, but, suggests Malabou (2008: 9), we seem unable to recognise this relationship, for it fades into the background noise of a ‘naturalisation effect’ (see also Wilson, 2004, 2015, who regularly describes these inter-relations and co-dependencies as processes of ‘imbrication’). However, a re-imaging of the brain that recognises this entanglement promises a generative – rather than simply ‘productive’ – plasticity (Papadopoulos, 2011). If we are willing to humbly admit, to paraphrase Deleuze (1987: 257) channelling Spinoza, that we simply don’t know what a brain can do – of how it is unpredictably malleable, and modifies itself in ways we do not yet even hope to fully understand – then through this admission we may be better oriented
towards realising possibilities of the brain in ways we cannot yet envisage, but should hope to allow to emerge.

However, it appears that today the neoliberal, Post-Fordist ‘spirit’ of capitalism elevates those subjects who seek to accord themselves and thrive within a constant state of flux, and endorses a supposed ‘freedom’ found in narrowly derived ‘flexibility’ (Malabou, 2008; Vander Valk, 2012: 10). Such conceptualisations didactically feed into equally narrow conceptualisations of the brain within the formalised machinations of bureaucratic and political arenas. This is made strikingly evident in projects like the ‘Foresight Mental Capital and Wellbeing Project’ in the UK, an exploratory initiative that produced a final report titled ‘The Mental Wealth of Nations’ (Beddington et. al 2008). This report, observes Jan Slaby (2010: 406), places a form of neurological care of the self as a means to the ‘good life’, one that is conveniently also ‘a perfect fit to the neoliberal market orientation’. Making this perspective abundantly explicit, the report authors frame their discussion through the notion of cognitive ‘capital’, and note that this analogue naturally sparks association with ideas of financial capital and it is both challenging and natural to think of the mind in this way (Beddington, 2008: 2).

That this type of brain – a resource to invest in, leverage, and extract value from – is considered ‘both challenging and natural’ aptly captures the strange ethic we may come to find ourselves labouring within. The brain is framed as a resource of iterative dividends, a property to be conscientiously exploited in accordance with wider dictates and processes of rationalisation. However, to foreshadow a discussion in the following chapter, such labouring over our brains is in turn purported to be ‘natural’ to our sense of species-being, so that this relationship to our neurological makeup is part of our uniquely ‘human’ quality, rather than merely the current anomalous mode of our infinitely malleable subjectivities. Furthermore, the brain is subjected to ideals of perpetual growth and the re-circulation of capital, and so effectively ‘recommends a lifelong regime of control, regulation, and intervention to assure the maximizing of mental capital’ (Slaby, 2010: 407). The brain is increasingly seen as operating within an array of possibilities and potentials to be enacted, a paragon of adaptability and willing, and therefore a ‘site of choice, prudence, and responsibility for each individual.’ (Abi-Rached and Rose, 2013: 52). As I will argue in the next chapter, this framing of the brain as a site of malleable utility may generate a cruelly perpetual labour.
Conclusion – Who is the ‘secret joke’ really on?

To conclude, we shall gradually shift her e from the intensive gazes discussed above to the expansive ends that will be addressed in the next chapter. Joshua Greene opens a book chapter – titled ‘The Secret Joke of Kant’s Soul’ – with this epigraph, taken from Nietzsche’s *The Gay Science*:

‘Kant’s Joke’—Kant wanted to prove, in a way that would dumbfound the common man, that the common man was right: that was the secret joke of this soul. He wrote against the scholars in support of popular prejudice, but for scholars and not for the people.’

Greene juxtaposes Nietzsche’s critique with another epigraph, this time from Kant’s ‘Concerning Wanton Self-Abuse’ in *The Metaphysics of Morals*, wherein Kant rails against the ‘mere unpurposive use of one’s sexual attributes as being a violation of one’s duty to himself’. The inference Greene wishes the reader to draw is that given Kant’s anti-onanist prudishness—which appears to be unduly dictating for him what he determines to constitute an ethical principle—we should reconsider Kant’s authority in laying claim to cool, measured judgment over duties to oneself and others. Leaving aside the obvious question of whether this may be a finicky and ungenerous way of critiquing Kant, we might in turn respond by noting that some lines of inquiry within neuroethics seem in large part founded upon devising ways of rendering more apparent what simply amounts to today’s form of ‘popular prejudice’. The common currency that ‘hard’ neuroethics advocates such as Sam Harris, Michael Gazzaniga, and Joshua Greene are leveraging is the popularly-held view that definitive assessments of wellbeing can be arrived at through hypothetico-deductive methods, promising insights that somehow negate the muddying vicissitudes of the contemporary subject. That is, we are assured that we can derive measures of the ‘good’ through increasingly intensive gazes into our material ontogeny. Yet there are underlying assumptions – again, certain ‘popular prejudices’ – at play here when it comes to wellbeing and the maximisation of utility, and these assumptions will be explored further in the next chapter.

Moreover, while Nietzsche was certainly averse to any convenient post-hoc moralising (that Kant may or may not have been guilty of), nor is it likely that he would have readily embraced the ‘reading’ of the moral actor through the hemodynamically-measured stimuli of trolley problems given by disembodied voices to ‘WEIRD’ subjects in loud plastic tubes, with findings then used to speculate on the continuing validity of deeply-held normative stances. The collapse of spatial, temporal and affective considerations in exchange for simply comparing
hypothetical choice against localised function – not to mention the heavy reliance on language to carry the emotional impute of considering a life-and-death scenario and one’s grave responsibility to effect a beneficial outcome – altogether makes for an awful lot of variables negated or regressed in service of illuminating weighty and elusive ideas. Nietzsche, Greene’s supposed champion against Kant, was long suspicious of such too-neat unities:

“All intense moods bring with them a resonance of related feelings and moods; they seem to stir up memory. Something in us remembers and becomes aware of similar states of their origin. Thus habitual, rapid associations of feelings and thoughts are formed, which, when they follow with lightning speed upon one another, are eventually no longer felt as complexes, but rather as unities; in truth they are rivers with a hundred sources and tributaries. As is so often the case, the unity of the word does not guarantee the unity of the thing.’

Nietzsche, 2004: 22

My larger point here is that while Greene may contend that we can isolate ‘psychological natural kinds’ of ethical stances through his experimental model, what he is instead reading within, and then translating down into our neurology, is something far less immutable and unified. Once such claims make their way out of the lab, however, and as the next chapter will show, then what is risked is inadvertently hardening and reifying current varieties of ‘popular prejudice’. As already noted, such fashionable prejudices include the aspiration to be ‘plastic’, but only in narrow ways aligned to the productive neoliberal subject. It comes to pass then that the ‘secret joke’, ultimately, is on us, entrained and labouring to uphold a mode of ethical thought grounded in flawed empiricism that worms and loops itself further into our self-construction. Again, this affixing of the ideal subject through mistaking the contingent tributary for the universal property will be explored further in the next chapter.

Nietzsche (2004: 13-4) wonders why philosophical inquiry for the past two millennia has largely concerned itself with the question of ‘how can something arise from its opposite … reason from unreason, sensation from the lifeless, logic from the illogical, disinterested contemplation from covetous desire, altruism from egoism, truth from error?’. Alternatively, Nietzsche poses that this is the wrong question to ask, or at least, one should not even presume to have found – in a teleological fashion – the appropriate properties to ‘oppose’ to one another. Applied to the neuroethical case at hand, perhaps ‘morality’ and ‘neurology’ are not the epistemic estuaries of the Nietzschean tributaries we are trying to find. More specifically, ‘consequentialist v. deontological ethics’ and ‘hemodynamically-read localised brain function’ are not teleological unities, but their own small paths carved from much more
elusive understandings of ethics and consciousness. Finding our way out of these ontological tributaries will not be achieved if we too hastily funnel both our gaze and that which we gaze upon.

To sum up, this chapter has traced the emergence of neuroethics as a discipline in its own right. In particular I have been concerned with a small but ambitious cadre of neuroethicists who proclaim – in both academic and lay contexts – that their field may lead the way to a ‘second Enlightenment’ by revealing our ethical constitutions at the neurological level. By reducing the complexity of ethical thought and behaviour to the ‘common currency’ of their differing activation in the brain, proponents hope that a ‘universal ethics’ might be revealed through an epistemic privilege to which they lay claim. However, given the looping effects of assessments of our ‘essential’ human qualities, such endeavours threaten to have greater effects in their propounding to wider society, rather than through the actual validity of their findings. Moreover, I have suggested that some neuroethical experimental constructs are laden with false categorical neatness unbefitting the import and complexity of the properties they seek to measure, resulting in narrow materialised analogues that may corrupt and diminish the very ideals they seek to protect.

The challenge we are left with then, as social scientists, is to trace and monitor the claims of neuroethics, looking to collaborate where possible, but also to sharply critique narrow demarcations that threaten to close off promising lines of inquiry before they are even glimpsed. A collective of hard neuro-empiricists proclaim that ‘the world of measurement and the world of meaning must eventually be reconciled’ through neuroscience (Harris 2010: 10). However, given the delicate epistemological and ontological sensitivities involved we should resist such rhetoric of the supposedly imperative need to precisely delineate all that we consider ‘ideal’ in our humanity, only so that we are then obliged to engineer its propensity at the neurological level. Such a project will likely only inscribe current normative contingencies in ways that may later prove detrimental. If a proposed ‘science of human flourishing’ succeeds by dint of epistemological validity – or, perhaps more likely, through self-fulfilling prophecies and looping effects generated through governmentality and care of the self – then there will come a time where assessments of the ‘right’ and ‘good’ are subjected to the clinical gaze, and so (further) opened to pathologisation.

Hence we must tread carefully, for as variously noted by Foucault (1998: 255), Hacking (1995: 361-9), and Paul Rabinow (1992: 241-2) those sciences which purport to illuminate the subject through law-like explanations of behaviour loop into effect forms of self-production laden with normative expectations, that is, the pronouncements of how we are ‘naturally’ constituted.
inevitably come to pedagogically instruct us on how we should live. We should consider then how neuroethics might shape new ‘regimes of normativity’ (Pickersgill, 2012) through the ways in which we consider the brain a property to be instrumentalised, and of what qualities of being we impute to this molecular terrain. This may prove especially pertinent given the hopes for practical applications of neuroethics on a wide scale in order to solve collective problems of the global risk society, as discussed in the next chapter.
Chapter Three

Not Fit for Purpose? – On Enhancing the Ethical Citizen and Neurological Care of the Self

‘Formerly one sought the feeling of a grandeur of man by pointing to his divine origin: this has now become a forbidden way, for at its portal stands the ape, together with other beasts, grinning knowingly as if to say: no further in this direction! One therefore now tries the opposite direction: the way mankind is going shall serve as proof of his grandeur and kinship with God, Alas, this, too, is vain! At the end of this way stands the funeral urn of the last man and gravedigger (with the inscription ‘nihil humani a me alienum puto’). However high mankind may have evolved – and perhaps at the end it will stand even lower than at the beginning! – it cannot pass over into a higher order, as little as the ant and the earwig can at the end of its ‘earthly course’ rise up to kinship with God and eternal life. The becoming drags the has-been along behind it: why should an exception to this eternal spectacle be made on behalf of some little star or for any little species upon it! Away with such sentimentalities!’

Nietzsche, 1881[1997]: 47

Introduction – ‘What we most essentially are’

The previous chapter traced the rise of neuroethics as a discipline comprised of increasingly influential proponents who envisage their field as the route by which a ‘universal ethics’ may be developed. This claim holds significant implications in how we may view ourselves as ethical subjects, perhaps regardless of the ultimate legitimacy of importing the measurement of the properties that purportedly constitute wellbeing and proper conduct into the neurological terrain. Through empirical studies – such as the fMRI-based correlation of normative ethical positions with neurological states – this line of neuroethics seeks to produce a ‘moral spectroscopy’ and ‘synaptic ledger’ that converts the complexity of moral practice into the common currency of our molecular assembly. The supposed causal mechanisms of ‘deontology’ and ‘consequentialist’ thought and feeling are to be translated through the

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23 ‘Nothing human is alien to me’
‘wetware between our ears’, and so in the process narrowly blackboxing once elusive measures of how we may best conduct ourselves.

Sociologists, and the social sciences more broadly, have raised ample concerns about the forms of hasty reductionism that underpin these claims, and specifically I am concerned here with those knowledge claims that then fold back onto the subject as injunctions upon their conduct. As Foucault (1998: 255) pithily observed ‘Every psychology is a pedagogy, all decipherment is a therapeutics’, and thus every knowledge claim regarding our constitutions is part of an ongoing dialectic in the ‘making up’ of subjects (Hacking, 1985). This process of coolly and precisely delineating the bounds of the ethical subject – as some neuroethicists are wont to do – aspires to the generation of ‘human kinds’ to match the law-like properties of ‘natural kinds’ (Hacking, 1985). However, a manifest distinction between the two is that ‘human kinds’ inevitably have ‘intrinsic moral value’ (Hacking, 1985: 367) that ‘affects the field of possible intentional actions’ (368). This, argues Ian Hacking (1985: 369), results in a ‘looping effect’, for ‘to create new ways of classifying people is also to change how we can think of ourselves, to change our sense of self-worth, even how we remember our own past’. There is a constant churn of ‘new causal knowledge to be gained’ and ‘old causal knowledge to be jettisoned’ that works against the definitive affixing of the subject (Hacking, 1985: 369). This looping effect should not be considered a source of frustration for those scholars who hold ‘romantic cravings’ of revealing our ‘universal’ properties (Hacking, 2002: 7). Rather, we should consider ourselves as productively elusive and reflexive in ways yet unknown, and so as social scientists we are obliged to trace the ways in which our ‘historical ontology’ has been brought to bear in various contexts (Foucault, 1984; Hacking, 2002: 1-26).

This task is crucially important, for it encourages caution towards current knowledge claims and what ideological stances may underpin them. Today, such universalising claims often emerge through ‘the notorious tendency of life scientists to support socio-political arguments by transposing their research on animal models – such as fruit flies or mice – directly to the realm of human society and culture’ (Rose, 2013: 12). Philosopher of mind Daniel Dennett likewise describes such overreaching translations as forms of ‘greedy reductionism’ where

‘... in their eagerness for a bargain, in their zeal to explain too much too fast, scientists and philosophers often underestimate the complexities, trying to skip whole layers or levels of theory in their rush to fasten everything securely and neatly to the foundation.’

Dennett, 1996: 82
The naïve rationalism that characterises aspects of neuroethical thought should be cause for concern, for as I demonstrated in the previous chapter there are growing ambitions to intensively work prevailing models of morality and normative ethics into the brain terrain. This chapter is concerned with the looping effects that may result, that is, the question of how current understandings of our ethical subjectivity as it relates to our neurological constitutions fold back into injunctions for how the morally upright citizen-subject should conduct and care for themselves. Too often in their ‘greedy’ rush to map morality onto neurology some neuroethicists neglect to consider the validity and viability of the properties they seek to import to the brain. For example, with a confidence in the essential rationality of human beings that feminist, postcolonial, and other critical scholars might find galling, Neil Levy (2008: 2) confidently claims that

‘Our rationality is not only definitive of what we most essentially are, it is also what is most prized in us, providing us with a standard to live up to. For Aristotle once again, the life of reflection was the highest to which we could aspire; for Socrates the unexamined life was not worth living and for John Stuart Mill it was better to be a Socrates dissatisfied than a pig satisfied. For us, the merely animal (unreflective) life is a life that is unworthy.’

Levy, 2008: 2

Levy’s appeal to historical authority aside, many social theorists would shrink from this universal kind of ‘iconic image’ of the citizenry that ‘combines the biological, discursive and moral expansion of human capabilities into an idea of teleologically ordained, rational progress’ (Braidotti, 2013: 13). Still, Levy (2008: 2-3) insists on the legitimacy of this aim of heightening our ‘higher’ capacities for rationality, and in the following example does so by tying the enhancement of rationality to an evolutionary imperative:

‘System 1 [unconscious, automatic, rapid] processes are evolutionarily more ancient; they are the kind of cognitive process we share with many other animals, whereas system 2 processes [conscious, deliberative decision making] are the kind distinctive of us. If we are rational animals, and that is what distinguishes us, it is only inasmuch as we deploy system 2 processes that this is true.’

This delineation of higher, rational functions and processes as essentially human is certainly not peculiar in neuroethical discourse, nor is the implication that these species-unique qualities should be set in contrast and competition with the ‘automatic’ and ‘lower’ cognitive processes we share with the rest of the animal kingdom (see Evans, 2003). Yet while such
conceptualisations might sit well with the kind of ‘species ethic’ that Jurgen Habermas (2003) and Francis Fukuyama (2002), for example, defend (see below), for many other social scientists such confident assertions of our ‘humanity’ would recall deeply problematic histories for scholars attentive to questions of race and ethnicity, gender and sexuality, and other axes of difference. Still, some influential and publicly prominent ‘hard’ transhumanists – who aspire to ‘enhancing’ ourselves as subjects through direct interventions upon our biological assemblies – promote this essentialist perspective of the rational subject with relative impunity:

‘When we make decisions to improve our lives by biological and other manipulations, we express our rationality and express what is fundamentally important about our nature. And if those manipulations improve our capacity to make rational and normative judgements, they further improve what is fundamentally human. Far from being against the human spirit, such improvements express the human spirit.’

Savulescu, 2008: 38

The ‘fundamental’ properties of our humanity are thus construed as a perpetual project of malleable self-objectification, which, as it so happens, would appear to conveniently align with current overarching ideological frameworks of the ideal subject in late modernity. This entwining and conflation of what is ‘fundamental’ of our being with what is particular to our socio-historical context generates some unsettling proposals as to how we may best conduct ourselves in the world. For instance, advocates of ‘moral enhancement’ by way of neurological intervention often frame justifications in terms of the imperative need to foster ethically upright citizens in order to avoid collectively edging ourselves towards global catastrophe (Douglas, 2008; Persson and Savulescu, 2008, 2010, 2012, 2013; Buchanan, 2011a, 2011b). Allen Buchanan (2011b: 2), for example, suggests that ‘to solve problems we have created—such as environmental pollution, over-population, and global warming—human beings may have to enhance their cognitive capacities and perhaps their moral capacities as well’. We are considered to be actors who generally know the ‘good’ and the ‘right’, but too often suffer a weakness of will that causes a rift between our first order desires (what we want) and our higher order desires (what we want to want) (Frankfurt, 1971; Wasserman, 2004; Persson and Savulescu, 2012: 123). The proposed solution, then, is of reconfiguring our purposes and propensities for the better by way of consciously but self-subversively modifying the underlying mechanisms of our intentionality (Sorenson, 2014). That is, intervening at the neurological level as a means of better governing ourselves as ethical citizen-subjects (for examples of those broadly in favour see Gazzaniga, 2006; Douglas, 2008; Buchanan, 2011a,
This is an intensive gaze directed to evermore expansive goals.

Justifying such a view in a modern liberal democratic setting, however, has resulted in proponents framing these interventions as the means by which we might better realise ‘higher’ goals, and so achieve a greater form of individual freedom by unbinding ourselves from ‘weaker’, baser desires (Chemland, 2002; Savulescu, 2010). We are called to make a vocation of instrumentalising our neurology in order to cultivate our ‘best’ and most autonomous selves within the free enterprise market of personalised consumption (Buchanan, 2011a: 172-182; 2011b: 243-277). This ‘double movement of autonomization and responsibilization’ has given over to the subject the freedom to pursue ends of their own devising, but – in exchange for this devolution of overt state control – subjects are urged to take on an ethos by which they consider themselves most fulfilled through upholding qualities that foster a ‘transactional reality’ of community living (Rose, 2000: 1400-1). In other words, we must be so composed as to frame our intentions and actions in ways that align self-interest with collective betterment. How this collective betterment is defined, though, is clearly a highly contested debate. As the following will demonstrate, it appears that there is a particular model of the ideal socio-political subject privileged in hard transhumanist views. This subject is steeped in rational thought, and dedicated to a consequentialist view of wellbeing in an individualised society that values those acts of self-improvement which also contribute to collective prosperity. This individualism is predicated upon an ethic of personal responsibility over an increasing gamut of ways we can manage our constitutions and mechanisms of our higher being, including through the possibility of neurological enhancement. In response, some thinkers of a broadly conservative or classically humanist bent are concerned over what neuro-enhancement means for maintaining a supposed ‘natural wholeness’ (President’s Council on Bioethics, 2003: 287). However, such naturalist appeals presuppose a clean delineation of the natural from the sociotechnical that new materialist and related critical perspectives would find deeply problematic (Connolly, 2002; Wilson, 2004; Braidotti, 2013; Coole and Frost, 2010).

Furthermore, the often unacknowledged but mutually constitutive qualities of neoliberal frameworks with current understandings and practices of our biology have been aptly demonstrated in numerous sociological and geographical works (Rabinow, 1992; Harvey, 2000; Martin, 2000; Waldby, 2000, 2002; Cooper, 2008; Pitts-Taylor, 2010). Melinda Cooper (2008), a sociologist specialising in biomedical economies, has been particularly insightful here in tracing the production of ‘life as surplus’, demonstrating that developments in recent decades in the life sciences and the accompanying biotech industry cannot be considered separate
from the ‘neoliberal revolution’ and its overarching models of the subject and their value-bearing capacities. Cooper further observes that the ‘biotech revolution’ of recent years has served ‘to relocate economic production at the genetic, microbial, and cellular level, so that life becomes, literally, annexed within capitalist processes of accumulation’ (2008: 19). When combined with the neoliberalist ‘tendency to couple the idea of the self-organizing economy with the necessity for continual crisis’ – and then shipping the resolution of this crisis to norms of personal responsibility – the body thus becomes a site of perpetual accumulation (Cooper, 2008: 43). Such a propulsive mechanism is characterised by ‘delirium’ (Cooper, 2008: 20), for our future as both individual subjects and functioning collectives is thought to be predicated upon pushing the possibilities of our biology as a resource to be utilised, of constant regeneration to counter ever-escalating risk (Cooper, 2008: 49). No longer do practices of mental hygiene instil within us an accord to moderation and temperance, but rather to living ‘beyond the limits’, maximising ourselves with regard to whatever qualities are deemed valuable in a given context (Cooper, 2008: 20). It is significant, suggests Cooper, that ‘these new ways of theorizing life are never far removed from a concern with new ways of mobilizing life as a technological resource’ (Cooper, 2008: 33).

This translational drive to instrumentalise our biology is also addressed in Catherine Waldby’s (2000, 2002) tracing of ‘biovalue’, wherein our growing technical sophistication produces proliferating ways in which we may extract value-potentials from our material constitutions. This requires making the body ‘visible’ in evermore varied ways, a body to be ‘rendered as compendia of data, information archives which can be stored, retrieved, networked, copied, transferred and rewritten’, so that our bio-composition may ‘become permeable to other orders of information, and liable to all the forms of circulation, dispersal, accumulation and transmission’ (Waldby, 2000: 7). The paradox of this, notes Waldby (2000), and as will become clear throughout this chapter, is that such projects espouse new ways of mapping our ‘essential’ ontology while in turn disaggregating our being into discrete packets of data, bounded and laden with functional possibilities dictated by current overarching frameworks. These efforts generate ‘iconographic’ representations of the high-functioning human according to certain prevailing instrumental logics, which ‘open the human to multiple incursions, demonstrating the body’s possibilities for commodification, for instrumentalisation, demonstrating also its use value within technically driven orders of rationality’ (Waldby, 2000: 8). In this way we may be made and remade in accordance with this shifting ‘iconic’ image. In current emerging discourses around the neurosciences and their genuflection to neoliberal imperatives this iconographic evangelism is evident in the popular rhetoric of neuroplasticity, where the brain is considered to be ‘limitless’ and ‘flexible’, yet the ways in which we are
encouraged to harness this plasticity are constricted to narrow and already prevailing presumptions of how our ‘best’ selves may be realised (Malabou, 2008; Pitts-Taylor, 2010). We presume to already know what to do with our brains.

When such urgings to self-manipulation are laden with normative assumptions we must consider the looping effects that may ensue in how we are enjoined to conduct ourselves as subjects. In particular this chapter is concerned with two lines of emerging ethical injunctions regarding our brains. The first is the notion that – due to the escalation of global risk within modernity – our moral capacities are in need of upgrading, lest we find ourselves ill-equipped to conduct ourselves as a species into an uncertain future. However, this proposal for ‘moral enhancement’ smuggles in many disconcerting presuppositions that, if such a regime of enhancement were to be enacted, may actually prove self-defeating. The second injunction I will discuss pertains to the rapid rise of the ‘brain training’ or ‘neurobics’ industry, wherein appeals to harnessing the potential of our ‘neuroplasticity’ are funnelled through narrow conceptions of the high-functioning brain that also happen to neatly align with contemporary ideals of the productive subject. Though the direct efficacy of such products is highly questionable it cannot be ignored that these programs are often laden with ethical appeals regarding the ‘virtuous’ quality of diligent brain training, and thus may prove influential in our ongoing constitution as subjects. Finally, the chapter will briefly turn to some alternative, more humbly expansive ways we might approach our relation to our brains. Firstly, though, I will briefly outline the recent emergence of proposals for ‘moral enhancement’ by way of neurological intervention.

**Recalibrating the moral citizen**

Moral enhancement by way of neurological intervention, argues Thomas Douglas (2008), is significantly distinct from other avenues of biomedical enhancement, for while other interventions may benefit some to the relative harm of others moral enhancement will axiomatically be of benefit to society, on balance. Such views are echoed by Allen Buchanan (2011b: 35), who believes that the ‘Personal Goods Assumption’ against enhancement – whereby benefits accrue only to the person who enhances themselves, thus risking perpetuating already prevalent inequalities – represents a flawed take on the wider effects of self-improvement. Rather, suggests Buchanan, given that enhancements are chosen by
individuals within parameters shaped by their social value – ie. individual choices are weighed within what the greater collective accords worth – then presumably the rational subject will align their choices with these valued properties, and so contribute to collective betterment. Perhaps we might consider this rationale to be that of the invisible hand of the market of virtue. Other advocates raise the possibility of enhancing civic virtue and social cohesion through neurological interventions that foster liberal democratic principles and the recognition of an expanding circle of others as worthy of our care (Jefferson, Douglas, Kahane and Savulescu, 2014). Though there are several objections that can be raised here already it would be worthwhile to first provide one proposed definition of moral enhancement:

‘A person morally enhances herself if she alters herself in a way that may reasonably be expected to result in her having morally better future motives, taken in sum, than she would otherwise have had.’

Douglas, 2008: 229

Of course, ‘having morally better future motives’ than one might have had previously is a quite vague and somewhat circular framing. Digging deeper into the proposed applications of moral enhancement, however, reveals that proponents have quite specific ideal subjects and motives in mind. Ingmar Persson and Julian Savulescu (2008), for example, suggest that moral enhancement by ‘traditional’ and ‘cultural’ means has been far slower than development in our other capacities, resulting in a growing incongruence between the destructive potentials of the technologies we develop and our ethical fortitude to use them wisely. These appeals to the imperative need to enhance our morality are ‘infused with futurity’, stretching the reach of governmentality into the management of possibilities and uncertainty at the level of the individual psyche (Abi-Rached and Rose, 2013: 13). Within this precarious milieu some neuro-advocates – looking to minimise risk without subverting the very principles they seek to defend – propose ‘not abandonment of the democracy, but enhancement of the morality of its voters’ (Persson and Savulescu, 2012: 90). Yet this is clearly a question-begging proposal, for embedded within these aims are presuppositions of the ‘ideal’ citizen-subject, thereby smuggling in conceptions of the self that, while now contemporaneous in the Western world, are anomalous socio-historical constructions. Robert Sparrow (2014a) has described such proposals of moral enhancement as unfounded acts of epistemic elitism, for ‘it presumes that those who embark upon it know what being more moral consists in’. Under such a regime, assessments of ‘virtue’ may come under an epistemic privilege, with designated authorities urging us to accord ourselves to intensively-derived normative ideals by way of neurological
self-fashioning. Therefore such claims – which come packaged in pragmatic rhetoric, yet in reality are weighty acts of epistemic colonisation – should be approached cautiously, lest we affix a model of the citizen-subject that may be difficult to later reconfigure, perhaps to our ongoing detriment.

One outcome of this intensive gaze coupled with expansive scope is that neuroethics, as a scientific field of knowledge with translational appeal, can serve as a ‘strategic phenomenon’ deployed to act as ‘a pillar of support for edifices of extra-scientific origin’ (Vander Valk, 2012: 9). In this way knowledge claims filtered through hard experimental constructs may be used to justify the composition of a new socio-political subject. Thomas Metzinger (2009), for instance, proposes drastic future overhauls to public policy based upon insight from the neurosciences, changes he argues can ensure principles of ‘neuronal liberty’ for all subjects.

Needless to say this will place an enormous strain on our regulatory capacities if we choose to exert control over phenomenal states, as evident here in Metzinger’s (2009: 230) wide-ranging proposal:

‘The key question is, which brain states should be legal? Which regions of phenomenal-state space (if any) should be declared off-limits? ... we must decide which of these altered states can be integrated into our culture and which are to be avoided at all cost. In free societies, the goal should always be to maximize the autonomy of the citizenry. That being said, we should adopt a sober perspective on the problem. We should minimize the price we pay in terms of deaths, addiction, and the damage that might be done to our economy by, say, a marked loss of productivity.’

Note the dual appeals to typical liberal democratic ideals, such as autonomy, with the neoliberal imperative to maintain sufficient levels of productivity. This delicate balance of maximising autonomy while also minimising harm as we look to further instrumentalise our brains, we are told, requires a new ‘consciousness ethics’, whereby rather than delineating ‘good action’ we must take step back in the transformational chain by determining ‘a good state of consciousness’ (Metzinger, 2009: 233). Thus through a ‘normative neurophenomenology’ where ‘the task is to assess the ethical value of various kinds of subjective experience’ the subject will be disaggregated into their varying phenomenological states to be assessed by cool gazes (Metzinger, 2009: 233).

Again, the notion that certain designated authorities might assess the ethical weight of a subjective state seems question-begging, but in any case Metzinger’s hope is that we may be able to map a ‘good state of consciousness’, then accordingly labour upon our ‘wetware’ to induce such a state, and so in theory create overall better citizens. Such potential oversight of
permissible brain states entails a new shift in practices of self-examination through
technologies of the self (Foucault, 1988: 46). In practicing this new form of mental hygiene so
that we may protect and uphold Metzinger’s ‘neuronal liberty’ we will be further compelled ‘to
be money changers of our own representations of our thoughts, vigilantly testing them,
verifying them, their metal, weight, effigy.’ (Foucault, 1988: 37). We become ‘hermeneuts of
ourselves’ (Foucault, 1988: 47), engaging in practices of interpreting and crafting our own
neurological assembly. This new layer of hyper-reflexive ‘biological citizenship’ (Rose and
Novas, 2008) thereby threatens to become a burdensome addition to the ways and means in
which we are ‘obliged to be free’ (Rose, 1999: 87).

Still, there are some who espy great promise in the ‘revival of biological arguments in the
interpretation of what makes us human’, for here in the inscribing of morality into our
neurology may lie a true Cartesian ‘universal method’ and a new ‘intellectual authority’ for
governing ourselves (Meloni, 2012: 26). At times these hopes and claims verge on the
fantastical, perhaps dangerously so:

‘My hypothesis is that the prospect of moral principles “firmly grounded” in
neurobiology … as well as the promise of bringing to light – via neuroscience – the
building blocks of ethics and even politics, have gained attractive force today as they
provide a vital solution to two profound intellectual needs of the post-1989 world. On
the one hand, neuroscience … has started to work as a substitute of the grand
narratives discredited by the shortcomings of the twentieth century (Marxism,
psychoanalysis, and also a certain Kantian rationalism in political and moral theory),
filling the void they have left behind. On the other hand … neuroscience’s project of
bringing to light the natural, bare substrate of human faculties, no longer
contaminated by cultural and linguistic differences and resistant to the pressures of
society and political regimes, seems to offer solid ground, and a safe anchor against
the return of many of the traumas of the twentieth century: neuroscience appears to
promote a message of universal brotherhood (as we all share the same
neurobiological structures of which all cultural differences are just superficial variants)
and, with its emphasis on our natural, hardwired inclination to moral life and empathy,
seems to provide a firmer basis for a newly possible ethics.’

Meloni, 2012: 37

These claims from social theorist Maurizio Meloni are deeply unsettling, and ironic in ways
likely not intended. Was not many of ‘the traumas of the twentieth century’ also predicated
on the belief of having finally arrived at an objective measure of the ideal composition of our species? Should we place any trust in an intellectual authority that seeks to remove the ‘contamination’ of cultural and linguistic differences in order to reveal the ‘natural, bare substrate’ of our species? How would such an authority quarantine themselves from this supposed contamination, finding an Archimedean point by which to delineate the bounds of our humanity? The previous chapter has already demonstrated that current aspirations towards a ‘universal ethics’ seem anything but universal, and instead are highly contingent and indeed socio-historically anomalous impositions. Would we wish such tenuous frameworks to be our ‘safe anchor’ against the traumas of the past, pinning our hopes on this narrow brainhood to ‘promote a message of universal brotherhood’? To frame the neurosciences as a ‘foundational narrative … with normative force’ (Meloni, 2012: 37) would seem to commit the very forms of hubris and excessive faith in the life sciences that may well hasten the rationalised onset of the next mass atrocity we commit upon each other.

This is the very kind of narrow epistemic colonisation that Emily Martin (2000) presciently warned against, expressing concern that the urge to map our sociality and subjectivity onto the brain would only serve to flatten these properties into a pale reflection of their actual complexity, but which would then become the determining reference point to by which we trace and measure these qualities into the future. That is, a looping effect would kick in that further entrenches these flattened, hollow conceptions of self and sociality. Moreover, Meloni’s above claim ‘of bringing to light the natural, bare substrate of human faculties, no longer contaminated by cultural and linguistic differences’ commits a form of ‘ontological apartheid’ that Elizabeth Wilson (2004: 68) urges us to reconsider, rejecting commonly held stances where the psy, the bio, the neuro, and the socio-cultural are presumed to ‘operate in disjunctive realms’. Instead, Wilson (2004: 21-2) calls upon us to recognise the porous, co-constitutive, and ‘obliging’ qualities of these entwined ontologies. Kirmayer and Gold (2012: 317) similarly warn against this one-way conflation into the brain, for

‘The self is not an arrangement of synapses and the cultural world is not an aggregate of individuals’ cognitive or neural representations. The brain cannot stand in for the person and the person cannot stand in for society or culture.’

Simply put, the brain is not the holding silo for self and society. Notwithstanding such critiques from the social sciences and humanities, the hope remains amongst some hard transhumanists for a new and scientifically rigorous form of citizenship by way of illuminating our neurological scaffolding. It is through understanding the molecular underpinnings of our agency that proponents aim to better govern towards an ‘ethopolitics’, a rationalised program
for instilling those ‘self-techniques by which humans should judge themselves and act upon themselves to make them better than they are’ (Rose, 2001: 18). In time, suggests Vander Valk (2012: 260), such developments may provide us with the means to remake politics ‘as the deliberate cultivation of particular patterns of response across multiple levels of being, on several temporal scales, and both within and outside of individual human bodies’.

Such hopes have already entered into the formal development of exploratory policy papers that aspire to implement neurological insight through various existing and speculative interventions upon the subject, seeking societally legitimate means of enhancing our capacities for optimisation, self-governance, and resilience (Broer and Pickersgill, 2015b). The most ambitious of these policy documents invoke a translational drive that will allow us to ‘work with and not against the grain of human nature’ (Grist, 2009: 34). Such proposals raise the possibility of cultivating a ‘neurological reflexivity’ so that we may truly realise Anthony Giddens’ ‘third way’ model of politics (Grist, 2009: 33-6), itself described by Rose (2000: 1397-8) quite unfavourably as old ideas repackaged with a veneer of ‘therapeutic individualism’ and the endorsement of ‘active responsible citizenship’ (thus shifting once ‘social’ problems to problems of the ‘individual’). Proposals of this kind, which combine our understanding of the brain with fashionable models of liberal democratic governance, demonstrate the wide and varying terrain that conceptions of the neurological subject can now traverse. While, for the most part, these working policy papers are generally measured, cautious, and tentative in their proposals (see, for example, The Royal Society’s Brain Waves working policy papers), others breathlessly argue for the necessity to truly understand our brains so we may discern whether we are working with the ‘wrong model’ of ‘human agency’ (Grist, 2009: 5), thereby edging us closer to realising the ‘progressive possibilities of our social, pro-social and happy brains’ (64).

We are supposedly obliged as citizens

‘... to reflexively evolve the social institutions that protect against our myopic brains, and develop our pro-social brains fully. For example, the problem of tackling climate change can really be seen as, writ large, the human endeavour of counteracting myopia through self-control and pro-social commitments.’

Grist, 2009: 65

This cultivation of the ‘pro-social brain’ is thought to be of aid in overcoming our ethical blinkers such that we may extend the sphere of those to whom we recognise a duty of care. This neurological reconfiguring of the bounds of ethical recognition and group membership is considered to be a ‘crucial socio-political challenge for our age’ (Keestra, 2012: 222). For many proponents of this gaze upon the subject the increasing ability to pinpoint our neurological
shortcomings opens the prospect of overcoming and perhaps even repurposing them to new ends, all for our collective benefit in a time of escalating global inequality and risk.

We should observe the magnitude of such claims, for under this proposed regime the neurological aetiologies of your various socio-political persuasions in themselves may now become a legitimate matter for surveillance, judgment, coercion, and intervention by designated authorities. To reiterate a concern raised in the previous chapter this step back in the causal chain results in desired states now being contained in newly bounded material spaces, which in time may shift our conceptualisation of such qualities in ways difficult to predict, but may well diminish and narrow the scope of possibilities for generating new ways of considering ourselves as ethical beings. Yet proponents of neuroscience-based *moral enhancement* often underpin their views by suggesting the imperative need to find solid grounding upon which to remake the citizen-subject, before our cognitive weaknesses damn us. They suggest that we must dive further into our ontological makeup, digging down to the molecular level of our being, in order to best address problems of ever-increasing socio-political magnitude. It is on this question of the *imperative* need to know and corral our risky neurology that I will now turn to.

**Appeals to the imperative need for moral enhancement**

To reiterate, this epistemic colonisation achieved by importing qualities of self and wellbeing into the brain is often framed in broadly neoliberal terms: autonomy and freedom of choice must be preserved, productivity is closely correlated with overall wellbeing, and ultimately the market shall determine what attributes open to modification deliver social utility. This line of translation is then paired with the actuarial view that – given the ever-increasing complexity and manufactured risk inherent in our societies – without a willingness to modify our capacities we may find ourselves ill-equipped for the future. This sense of our impending ‘unfitness’ and the consequent need for social engineering may even extend to the global socio-political dimension. For example, note the not-too-subtle implication here from Oxford bioethicist Julian Savulescu on implementing eugenics-informed reproduction:

‘There are reasons to think we will need some rules and some regulation, but much less than we have today in some parts of the world. You’re not allowed to test for things that are obviously beneficial, such as genetic dispositions for higher intelligence,
in most of Europe and Australia; whereas the Chinese have a billion-dollar project for these sorts of genes and will be using that information in their reproductive decisions.’

Savulescu, in interview with TED, 2014

Again, note the preference for personal autonomy against the regulatory hand of the state. Observe also the assumption that higher intelligence is ‘obviously beneficial’. And finally, in observing that global superpower China are forging ahead on these projects note how Savulescu is implying that we may risk losing our relative international standing and global competitiveness if we persist in resisting calls to eugenically enhance our cognitive capital. The sense of the imperative stoked here is that we must be willing to reconfigure ourselves in order to protect our very way of life. Such appeals and more are also present in arguments from Michael Gazzaniga (2006: 73-4):

‘One could argue that evolutionary theory suggests that if we are smart enough to invent the technology to increase our brain capacity, we should be able to use it. It is the next step in the survival of the fittest. We all attempt to find a mate who is the smartest, richest, most attractive, and most engaging we can find—this is sexual selection at work. Yet no matter whom we end up with, we turn in the millions to products and services provided by the culture to enhance ourselves and our children. While some people’s avidness or narcissism in pursuing these activities can be annoying and offensive, the freedom to engage in them should ultimately be in the hands of the individual, not society.’

Here we see appeals to: evolutionary imperatives; grossly unjustified assumptions that the invention of a technology entails our ability to countenance its wider ramifications; an equivalency drawn in the ways we already consume products to ‘enhance’ ourselves; and the unwavering subscription to preserving individual autonomy. This is all despite the understanding that – even if we cannot agree on exactly what model of justice we should subscribe to – very few of us (I suspect) would be comfortable in framing neurological enhancement as ‘the next step in the survival of the fittest’. Again, what is evident here are the strange dual appeals to essentialist ideals of our species, while also urging the imperative need to remake ourselves in light of flawed constitutions deemed not fit for modern life.

It should be clear by now that some neuroethicists – and especially those within the field firmly advocating for ‘hard’ notions of ‘neuro-enhancement’ – appear to be anachronistically framing justifications within decidedly Western late capitalist parameters, while simultaneously proclaiming the need for a new ontological subject for the ‘approaching post-
human era’ (Kahane, Savulescu and ter Meulen, 2011: i). This growing chorus comprised of bioethicists, moral psychologists, and cognitive philosophers posit that some aspects of cognition – whilst perhaps beneficial in an evolutionary sense – are now clearly no longer conducive to maximising wellbeing in post-industrial societies, and thus should be opened to external scrutiny and modification.

Perhaps most influential in this area has been Julian Savulescu, a forthright advocate for enhancing ourselves directly at the neurochemical level, along with endorsing other means of targeted transhumanism. With philosopher Ingmar Persson, Savulescu suggests that we are currently ‘unfit for the future’ (2012) and so have an obligation to enhance the moral character of the human species (Persson and Savulescu, 2008) by aspiring towards a ‘moral transhumanism’ (Persson and Savulescu, 2010). Shortfalls in our capacities as ethical agents, argue Persson and Savulescu, make collective action towards reducing threats of mass catastrophe (with terrorism and climate change being their primary examples) all but impossible, and perhaps we simply do not have the necessary capabilities at the neurological level to resolve these issues. Buchanan (2011b: 2, 78) similarly endorses like-minded imperatives of mitigating global risk, adding ageing and over-population to the list of problems requiring enhanced citizens, while Douglas (2008: 231) posits as a permissible use of moral enhancements the reduction of implicit aversions to certain racial/ethnic characteristics that may lead to undesirable anti-social behaviours. These proponents argue that it ‘is crucial that we be aware of the moral limitations of our nature, and do whatever we can to correct these limitations, by traditional or new scientific means’ (Persson and Savulescu, 2012: 133). This, essentially, is a proposal for ethics as an actuarial exercise informed by sociobiology.

A number of justifications are given for this proposal. One is that our ‘default’ moral settings – in those that pertain to our evolutionary lineages at least – were not adapted for the societies we live in and the collective problems we face. Rather, argues Savulescu (2011), we remain precariously wedged as small group animals, competing with one another for resources as subjects neurologically tethered to our violent ancestors, of whom 40% died at the hands of another of our species. We are also prone to temporal biases and other heuristic flaws that risk causing unnecessary harm (Persson and Savulescu, 2011: 27). Moreover, the range of our altruism tends to be highly conditional, for our relative scope insensitivity entails that we are incapable of proportionately contemplating the suffering of many relative to the suffering of one (Persson and Savulescu, 2012: 30). As a consequence, Persson and Savulescu argue, our

24 It is for his wide-ranging and unflinching ‘hard’ transhumanist claims that Julian Savulescu has been described by fellow philosopher John Harris (2011a: 110) as ‘one of the smartest people I know’ but ‘also one of the most dangerous’.
current moral constutions – when directed to address large scale collective problems unique to late modernity – often finds itself in a state of dissonance, paralysed to act, splintered by interests to which our currently evolved brains are not tailored.

Parallel with these counter-productive evolutionary volitions is the exponentially greater harm we can cause thanks to technological developments, including the potential to cause Ultimate Harm: that which is incredibly destructive, irredeemable, catastrophic etc. (Persson and Savulescu, 2012: 46). In emphatically ramming home this catastrophic possibility Persson and Savulescu (2012: 126) cite the astronomer Martin Rees (2003: 8), who estimates that there is a 50% chance the human race will meet its end within the century, by our own hands. The clear implication is that there is a fundamental mismatch, indeed ‘a horrifying trend that must be broken’, between the potentials of our technology and our capacities as an ethical species equipped to responsibly handle such catastrophic possibilities (Persson and Savulescu: 2012: 126). Therefore, it is proposed, we should look towards embracing a subject-citizen made by design (Powell and Buchanan, 2008). In this time of late modernity harm is increasingly committed at a geographical and temporal distances, where tiny little transgressions (eg. producing more carbon emissions than we might need to) can cumulatively amount to potentially disastrous outcomes. The subsequent implication, then, is that we are not ‘psychologically set up’ to orient ourselves through the problems we have manufactured (Savulescu, 2011). Rather, our ‘common sense morality’ is stuck in narrow, outdated modes of operation, and is in desperate need of upgrading (Persson and Savulescu, 2012: 122-3).

Persson and Savulescu (2012: 103) posit that ‘it is necessary to widen the horizons of our moral consciousness’, for large-scale and fiendishly complex issues such as anthropogenic climate change, global inequality, and sensitive geopolitical relations will remain intractable under current circumstances. We are thus framed as failed citizens, testing the bounds of our willingness to express due recognition and care for an expanding circle of others for whom it appears we currently lack the requisite empathy. Our continuing existence may therefore require a program of society-wide moral enhancement, for ‘the ideology of human equality must exercise a stronger motivational influence and overcome the limitations of our altruism and sense of justice’ (Persson and Savulescu, 2012: 105). Disconcertingly, it is even proposed that such a program may be enforced compulsorily by the state:

‘If safe moral enhancements are ever developed, there are strong reasons to believe that their use should be obligatory, like education or fluoride in the water, since those who should take them are least likely to be inclined to use them. That is, safe, effective moral enhancement would be compulsory.’
Yet coupled with such statements are still found appeals to the ideal of maximising personal autonomy, with moral enhancement presumed to provide greater capacities by which we can exercise our already existing desire to do good (Persson and Savulescu, 2012: 112-3). Hence such methods of intervention upon the citizen-subject

‘... does not restrict freedom; it rather extends it, by making the subject more capable of overcoming urges which counteract the doing of what is seen as morally good... when we influence the motivational states of people, this could be liberating rather than constraining’

Persson and Savulescu, 2012: 114

Here we return then to the supposed desirability of reconciling first order with higher order desires. A purported freedom found in serving one’s better inclinations through the ‘rather modest extension’ of neuro-enhancement that consists in simply ‘motivating ourselves to do what we already believe to be right, of overcoming our moral weakness of will’ (Persson and Savulescu, 2012: 123). With respect to Persson and Savulescu it should be acknowledged that the underlying concerns that motivate their equally fascinating and unnerving argument are not by any means unreasonable. Their views are presented with an urgency that comes in considering the genuinely rapid and unpredictable proliferation of manufactured risk. We are inescapably aware of global suffering, and of social, political, and environmental problems that may seem intractable, and yet such problems are often brought about through little cumulative failures of ethical agency that add up to calamities we cannot seem to alleviate. Perhaps, then, it is apparent that ‘the predicament of humankind is so serious that all possible ways out of it should be explored’ (Persson and Savulescu, 2012: 123). But does mitigating this risk of ‘Ultimate Harm’ require reconfiguring ourselves as citizens at the neurological level? As Hartmann (2011: 76) observes, such dictates ‘reduce rationality to instrumental rationality’, whereby we render ourselves as apparatuses within technocratic assemblies, modified to serve pre-determined ends, rather than communicative agents endowed with capacities to collectively shape those ends. Needless to say, the looping effects of such regimes of self-objectification are difficult to foresee.
Cautionary responses

Before continuing this exploration of calls for neuro-enhancement I would like to briefly interpolate here a particular vein of critical responses, for running counter to neuro-enhancement interests are firm cautionary voices, ones that (ironically) often adopt positions inflected with their own essentialist ideals of humanity. In this regard perhaps the most prominent and outspoken voice of resistance in recent years has been the President’s Council of Bioethics (PCoB), in operation during the Presidency of George W. Bush. This conservative-leaning group expressed great disquiet over many proposed biomedical enhancements, arguing that such prospects are driven by ‘hubris’ in failing to ‘show proper respect for what is naturally and dignifiedly human’ (PCoB, 2003: 286-7). Such bioconservative stances have sought to defend ‘the naturally given’ and the dignity of ‘full human flourishing’ (PCoB, 2003: 287), however loosely and contingently such properties may be delimited. In any case, not to be forgotten is that this delimitation was almost certainly informed by conservative Christian principles throughout the PCoB’s existence under both Leon Kass and Edmund Pellegrino (though Kass’ tenure is the period we are primarily concerned with here).

The PCoB (2003: 287) stridently warned against ‘any ill-considered attempt at “improvement”’, suggesting that interventions ‘beyond therapy’ may distract us from cultivating our ‘natural wholeness’, and instead induce an acute anomie resulting from ‘absent natural standards’ and arrogant aspirations of mastery. One could certainly raise an eyebrow here regarding our supposed ‘natural wholeness’ and the corollary insistence that we can and should distinguish between ‘treatment’ and ‘enhancement’. Such essentialist and retrograde appeals are often vague in their argumentation, and may consciously or otherwise serve as obscuring smokescreens for ideological appeals towards preserving an alternate idealised subject that is equally anomalous, contingent, and rigid as that proposed by the transhumanists they so vehemently oppose. However, it is understandable that some conservative responses are beholden to forms of hard-won classical humanism, and although cracks and fissures may be showing in this model of the subject it is (maybe) still worth defending against (some) ill-considered alternatives. Such stances may serve as a bulwark against rapid societal change and those forces of rationalisation which threaten to render us ‘less’ than human, or remove a sense of authorship from our own lives (Kass, 2002; Fukuyama, 2002; Habermas, 2003; Sandel, 2007). Francis Fukuyama (2004) – who was also a member of the PCoB – has been one of the most outspoken in defending this notion of the modern subject as the product of the long struggle of humanist ideals:
‘The first victim of transhumanism might be equality. The U.S. Declaration of Independence says that "all men are created equal," and the most serious political fights in the history of the United States have been over who qualifies as fully human...
Underlying this idea of the equality of rights is the belief that we all possess a human essence that dwarfs manifest differences in skin color, beauty, and even intelligence. This essence, and the view that individuals therefore have inherent value, is at the heart of political liberalism. But modifying that essence is the core of the transhumanist project. If we start transforming ourselves into something superior, what rights will these enhanced creatures claim, and what rights will they possess when compared to those left behind? If some move ahead, can anyone afford not to follow?’

Like many other bioconservative approaches it is not exactly clear what Fukuyama means by a ‘human essence’ supposedly under threat, and given what follows in this passage we can surmise that this supposed holistic ‘essence’ actually pertains to defending a very particular socio-historical construction. Let me reiterate that this is not to denigrate views that seek to defend our current socio-political models and institutions against radical change. Such perspectives are generally whole-hearted and sincere, but when they are argued for through essentialist frameworks there is a risk of stultifying the productively malleable historical ontology of ourselves, all in the very same way such advocates fear it may be done by others. So, while we might admire the earnestness of such arguments that seek to protect broadly humanist principles we should be wary of doing so by conflating such principles with our ‘essential’ qualities.

Still, Fukuyama (2004) fears that the ability to enhance ourselves through targeted interventions will perpetuate already existing inequalities, and so what was won ‘slowly and painfully’ may be undone in one fell swoop of industry where our ‘Promethean desires’ allow over-zealous transhumanists ‘to deface humanity with their genetic bulldozers and psychotropic shopping malls’. Some enhancement advocates took offence from this overwrought broadside against hard transhumanism, among them risk philosopher Nick Bostrom (2004), who responded to Fukuyama’s appeal to protecting our ‘human essence’ by noting that given recent developments in ethnology and evolutionary biology ‘a thick concept of human essence has arguably become an anachronism’. Bostrom also posited that a potential growing inequality of intellectual capacity need not necessarily result in a parallel inequality with regard to rights, if anything, our acuity to these issues could be greatly improved through neuro-enhancement of our morality, thus protecting such principles all the better.
An approach similar to Fukuyama’s can be found in Michael Sandel’s *The Case Against Perfection* (2007), in which Sandel calls upon us to recognise the forthcoming onslaught of biotechnological innovation and the accompanying ethical necessity to thoroughly interrogate the means and ends of these developments:

‘...we need to confront questions largely lost from view in the modern world – questions about the moral status of nature, and about the proper stance of human beings toward the given world. Since these questions verge on theology, modern philosophers and political theorists tend to shrink from them. But our new powers of biotechnology make them unavoidable.’

Sandel, 2007: 9

It should be noted that Sandel was also part of the conservative-leaning PCoB, and that the Council’s arguments on our ‘naturally given’ qualities are similarly found in Sandel’s own work. Sandel’s (2007: 26) views amount to an updated version of the Council’s stance, urging us to recognise the ‘giftedness’ of our capacities, and not to presume to know our best ends through a Promethean ‘hyper-agency’ that aspires to ‘mastery’. As such Sandel is exceedingly wary of current calls for biological enhancement, taking Julian Savulescu head on with regard to the question of whether we are ethically obliged to ‘enhance’ our children:

‘According to Savulescu, parents not only have a duty to promote their children’s health; they are also “morally obliged to genetically modify their children.” Parents should use technology to manipulate their children’s “memory, temperament, patience, empathy, sense of humor, optimism,” and other characteristics in order to give them “the best opportunity of the best life.” But it is a mistake to think of health in wholly instrumental terms, as a way of maximizing something else. Good health, like good character, is a constitutive element of human flourishing. Although more health is better than less, at least within a certain range, it is not the kind of good that can be maximized. No one aspires to be a virtuoso at health (except, perhaps, a hypochondriac). During the 1920s, eugenicists held health contests at state fairs and awarded prizes to the “fittest families.” But this bizarre practice illustrates the folly of conceiving health in instrumental terms, or as a good to be maximized. Unlike the talents and traits that bring success in a competitive society, health is a bounded good; parents can seek it for their children without risk of being drawn into an ever-escalating arms race.’

Sandel, 2007: 48-9
Here, in its starkest form, is the distinction between those who, like Sandel, wish to maintain a distinction between ‘treatment’ and ‘enhancement’ and to defend a broadly classical humanist view of the subject, against those, like Savulescu, who wish to reconceptualise ‘health’ in terms of functions to be maximised within an equally contingent neoliberal subject. However, Sandel’s guilt-by-association argument in likening Savulescu’s proposals with ‘bizarre’ state fair-promoted eugenics is not especially convincing, and popular momentum is certainly with the pro-enhancement camp. As will be discussed further below assessments of one’s ‘fitness’ are emerging in new ways through the growth of self-improvement industries – such as ‘brain training’ or ‘neurobics’ – where seemingly precise measures are given of one’s value-bearing cognitive capacities. The neuro and biological subject is increasingly framed today in terms of malleable aptitudes of productivity, rather than neatly bounded states of health or illness (Lupton, 2016). As a consequence, Sandel finds himself defending a position perhaps already lost and unlikely to ever be reclaimed, for ‘health’ has now become an abundantly ‘accommodating rhetoric’ that can incorporate conceptions of the ‘good life’ into its epistemological terrain, charged with appeals to perpetual maximisation (Thornton, 2011b: 66). The insistence on defending some supposed ‘natural’, ‘given’, or ‘gifted’ quality of the subject through attempts to distinguish between ‘treatment’ and ‘enhancement’ appears increasingly arbitrary, and thinly obscures underlying ideological stances. That said, while Savulescu may urge us to conceive of health as ‘instrumentally valuable’ we should be exceedingly wary of what ends such transhumanists consider of value, for these assessments risk exacerbating rigid ways of framing the ideal subject.

A duty to neuro-enhance?

For now, it appears that constructs of the ‘ideal’ citizen envisioned by pro-enhancement advocates are relatively fixed in current contingencies, even when the underlying justifications for such proposals are frequently conflicting. Michael Gazzaniga, for example, adopts a form of parity argument (ie. that this is only a continuation of practices already undertaken) in defending the ethical legitimacy and relative safety of neuro-enhancement. Here, for example, Gazzaniga (2006: 81) looks to placate concerns regarding the outcomes of enhancing intellect on a wide scale:
‘Backstopping many of the ethical concerns about unleashing millions of really smart people on the world is the fact that millions of really smart people are already here...
Increasing the pool size of smart people won’t change or challenge our values.’

This is both naïve and blithely dismissive, for what would be the point of enacting large-scale programs to increase our collective intelligence if not to effect some kind of change in our values, even if only to better realise already prevailing norms? The mere positing of ‘intelligence’ as a capacity we should direct our efforts towards enhancing is a value statement in itself, for it presumes that we will better achieve our ‘essential’ humanity by enhancing our higher, rational capacities. Despite their shared advocacy for neuro-enhancement, Gazzaniga’s assuaging parity arguments contrast dramatically with the views of other aforementioned transhumanists, who contend that we must embrace enhancement in order to be ‘fit’ to face the challenges of the future. That is, contra Gazzaniga, these proponents are hoping that the shifting of our values is exactly what neuro-enhancement will achieve (but only in certain pre-set ways they have already determined to be ideal).

Hence whatever it is we mean by ‘values’ is precisely what is at stake here, and such debates are now gradually being imported into the brain terrain. This makes manifest a strange form of neuro-essentialist, instrumental logic, whereby we must decide what aspects of our ‘humanity’ to embrace and cultivate at the neuronal level (Racine and Costa-von Aesch, 2011). Here, for instance, is Thomas Metzinger (2009: 213) demonstrating this parsing of all that constitutes ‘humanity’ through the brain:

‘How are we to live with this brain? Which states of consciousness are beneficial, and which are harmful to us? How will we integrate this new awareness into our culture and our society? What are the likely consequences of a clash of anthropologies—of the increasing competition between the old and the new images of humanity?’

Such a framing of humanity entails that in time we may disaggregate the self into neurological functions and causations that are deemed either ‘operational’ or ‘defective’ in any given context of citizenship. This may confer a new form of somatic ethic upon the individual, with many theorists noting the ironic constructions of ever greater responsibilities apportioned to the subject to accord themselves to societally-desired values, yet are achieved through increasingly minute and targeted forms of surveillance and intervention upon our selves (Rose, 1992; Malabou, 2010; Pitts-Taylor, 2010; Ortega, 2011; Thornton, 2011b). We are informed that we must labour upon ourselves ever more intensively in order to expand our capacities as ethical agents. We are also informed that we are plastic, malleable entities, laden with potential, adaptable, but of course always beholden to and inextricably entangled with the
material. As such we are expected to labour further down this transformational chain of being, pre-emptively cultivating dispositions and phenomenological states according to prevailing norms, and so enacting yet another means typical of modernity by which we labour to ‘articulate and decompose bodies that are already dismembered.’ (Kittler, 1990: 215, cited in Pruchnic, 2008: 167). We are breaking up into smaller, more discrete packets of data that which was already contingent and lacking in substance in its ‘whole’ form.

Such an array of considerations are emerging concurrently with extensions of self and agency via emerging technologies, resulting in a hybrid ontology of virtual extension and molecular intension (Pruchnic, 2008: 168-9). This, for Jeff Pruchnic (2008: 169), generates not necessarily alienation, but certainly an ‘internal alterity’ of a subject now expected to diligently trace these lines of ontology as they are translated from one substance to another. Our neurology has thus become ‘persuadable’, and so it may prove to be seen a virtue to practice brain-persuasion on oneself (Pruchnic, 2008: 194). All that we supposedly need then, say the hard materialists of neuroethics, is sufficient knowledge of this malleable, persuadable substance inside the skull and this ‘descriptive knowledge of the brain will inform us on what we should do’ (Schleim, 2014: 3). Then it will simply be a case of enjoining the dutiful citizen to take up a vocation of ‘neuroasceticism’, an ethic of self-care towards developing techniques to best corral our brains to our chosen ends (Ortega, 2011). Such practices are timely, say Persson and Savulescu (2012: 2), for in this age of escalating risk ‘It is desirable that only beings who are morally enlightened, and adequately informed about the relevant facts, should be entrusted with such formidable technological powers as we now possess’. We must be kinder and wiser, according to a standard they presume to know. But does whatever we mean by ‘autonomy’ and ‘morality’ retain its appeal and coherence if it is ‘enacted only at the price of relying upon experts of the soul’ (Rose, 1996: 17)?

Altogether this amounts to an ethic of purposefully – but also subversively, for interventions are directed at the neurological level – modifying ourselves in ways adhering to overarching dictates that we presume to be universal and unimpeachable. Tangled up in this process are ‘recurrent histories’ (Canguilhem, 1988), ‘situated knowledges’ (Haraway, 1988), and ‘immutable mobiles’ (Latour, 1986) of authority through which we gaze upon the self in order for designated mechanisms to determine how we may best conduct ourselves. In this way multiple temporalities are put to work in justifying an enhancement regime: our primitive ancestors were violent, small-minded, fiercely communal creatures beyond reason, while our Enlightenment and Age of Reason forebears valued rule of law, secularism, individual rights, and responsible autonomy. In navigating between these duelling legacies of our animalist and rationalist bio-psycho-social constitution, the future presents itself as an array of risks to be
mapped and managed, perhaps only traversable by way of reconfiguring our neurological makeup. All these temporalities and their contextual baggage arrive at once in considering subjectivity and citizenship today. But if governing of the neoliberal subject is ‘to act upon action’ (Rose, 1999: 3) in ways that do not constrain agency and ‘freedom’ but rather governs through such aspirations by aligning individual volitions with societal imperatives (1999: 62, 69; 1996: 155), then how will the citizen-subject be formed in a time where an ethos of self-governance makes a virtue of hyper-reflexivity, urging subjects to labour upon the molecular mechanisms of their ‘freedom’?

In such a complex entanglement it seems that current rationales for enhancement are too closely tied to rigidly affixed frameworks, precluding the possibility that we may not actually know our ‘best’ ends. Further to this is the disquieting irony that, in attempting to maximise the upholding of espoused broadly liberal democratic principles, we would take action that subverts those very same principles by potentially intervening upon ourselves through a governmentality of ‘moral perfectionism’ (Sparrow, 2014a). Those of us wary of the hard transhumanist program may thus inadvertently find ourselves wedged in defending a more traditional form of humanism that has arguably become banal and equally rigid beyond worth, for it is stuck with notions of our ‘essential’ and ‘inalienable’ qualities that obtain less and less in our ‘nomadic’ and ‘hybrid’ ontologies, but require more and more upkeep to uphold (Braidotti, 2013: 16-26). Enhancement advocates Persson and Savulescu, to their partial credit, do not entirely duck this consideration of whether we should offload certain cherished liberal democratic principles in order to better realise our capacities, and indeed rather chillingly suggest that in tandem with moral enhancement by neurological means we must also be willing to sacrifice some weighty ideological loyalties:

‘We believe that in order to come to grips with the risk of terrorist attacks with weapons of mass destruction liberal democracies will have to become less liberal, by intensifying the surveillance of their citizens and, thus, curtailing their right to privacy.’

(Persson and Savulescu, 2012: 1, see also 124-5)

Yet this curtailing of personal freedoms is presumed to occur simultaneously with a society-wide regime of ‘moral enhancement’. Does this compromise not generate a discomfiting irony, for as we are morally ‘enhanced’ we must acquiesce privileges that our former and supposedly morally lesser selves were granted? This is a strange position, one pithily likened to ‘Hobbes with a technological determinist twist’ (Sparrow, 2014b). A frightening, dystopian-baiting regime is on offer here, one that has little faith in our current socio-political institutions and their actors to deal with current global issues, but does have faith in the equally ambitious
task of implementing society-wide moral enhancement. Indeed, it is difficult to envision how a widespread regime of moral modification at the neurological level does not risk becoming co-opted by the very same inequalities, elite interests, or narrow and flawed perspectives it seeks to negate.

Though I do not wish to belabour the point what is also odd about this neuro-governmentality is how much baggage it carries from prevailing normative ethical thought. All too often what we are being presented with is not the possibility of reconfigurations that allow for extensions of the self in ways not previously envisaged, but rather the invocation of imperatives that serve to constrain the citizen-subject in set paths; ‘enhanced’ towards a narrow universalism that fails to recognise its narrow contingency. John Harris (2011a: 104) similarly observes a ‘fundamental problem’ in current debates around moral enhancement in that ‘the sorts of traits or dispositions that seem to lead to wickedness or immorality are also the very same ones required not only for virtue but for any sort of moral life at all’. We therefore risk hollowing out whatever it is we mean by ‘ethics’ and ‘morality’ through strategies that advocate a crude and restrictive circumscribing of the thinking and feeling subject:

‘These strategies propose operating directly on the mainsprings of action, on emotions or other dispositions, and in particular they operate by cutting out or bypassing what they perceive as a dangerously paralyzing or dilatory process that might somehow get between an impulse and the moral action it impels. This sometimes, but not necessarily, dilatory process is thought or reflection.’

Harris, 2011b: 2

Thus we may find ourselves practicing an ethic of hyper-reflexivity that blazes straight past the reflective subject in itself. This ‘bypassing’ of that which may be seen as inefficiently ‘dilatory’ can be likened to the earlier delineation between higher order and first order volitions, whereby some proponents of moral enhancement hope that our impulsive wants might be corralled and aligned with our more thoughtful and considered inclinations, thus producing a citizen imbued with volitions that default to realising the ‘good’. The result is that whatever we mean by morality risks becoming fixed and rigid, subverting and foreclosing variabilities we may not yet fully understand.

Coupled with calls to enhance our morality are related appeals to enhance our executive cognitive capacities, often under the rationale that subjects cannot perform their duties as citizens of liberal-democratic societies if they lack the requisite intellectual capacities. For instance, Savulescu (2010: 4) cites research from the US Department of Education suggesting
that a significant proportion of the population ‘are below the literacy level required for ‘competing successfully in a global economy and exercising fully the rights and responsibilities of citizenship’. Furthermore, citing DARPA’s claim that even minor cognitive enhancement on a large scale could ‘have an impact on the world economy rivalling that of the internet’, we are enjoined to embrace a program of society-wide neuro-enhancement so that we may better accord ourselves to the complexity and possibility of modern living, and thereby collectively raise overall quality of life (Savulescu, 2010: 4). Such views echo and extend a prevailing ethos of modern liberalism, in which citizens ‘must come to recognize and act upon themselves as both free and responsible, both beings of liberty and members of society, if liberal government is to be possible’ (Rose, 1999: 68). Envisioned here is a subject who will duly accord themselves to overarching logics of governmentality with a sense of hope and enterprise, finding self-actualisation through the articulation and comportment of their minds and bodies within the parameters of value-producing ends:

‘It was not a question here of active involvement in public affairs, in local democracy, in the conduct of politics. Rather, the model of the active citizen was one who was an entrepreneur of him- or herself. This was not simply a re-activation of values of self-reliance, autonomy and independence as the underpinning of self-respect, self-esteem, self-worth and self-advancement. It is rather that the individual was to conduct his or her life, and that of his or her family, as a kind of enterprise, seeking to enhance and capitalize on existence itself through calculated acts and investments.’

Rose, 1999: 164

This ideal citizen is fitted to participate within the pre-given scripts and mechanisms by which society perpetuates itself. Such an enterprising subject will ‘seek to maximize its own human capital, project itself a future, and seek to shape itself in order to become what it wishes to be’ (Rose, 1996: 154). Guided in part by neuro-expertise, the ideal enterprising subject today not only observes rules and prescriptions, but contributes to their perpetuation by labouring upon those cognitive properties they believe to be conducive to maximising emancipation from their own perceived inadequacies.

One might suggest that interventions that enable persons to better function within the complex rationalised and bureaucratic mechanisms of late modernity are not at all unreasonable. But what if the ‘duty’ to neurologically enhance ourselves were to extend beyond those spaces in which we conduct ourselves as public citizens? Julian Savulescu and Anders Sandberg (2008), for example, propose that we consider the prospect of the neuro-enhancement of ‘love and marriage’. The rationale for this call – similar to the
aforementioned broader call to enhance our morality as citizens – is that rapid socio-cultural shifts have resulted in gaps between the complexity of social life and the cognitive tools we can use to parse this space. As a result ‘trends in divorce, as well as findings in evolutionary psychology, suggest that love might need a helping hand’ (Savulescu and Sandberg, 2008: 31). Thanks in part to our longevity our relationships are ‘on borrowed time’, for ‘our biology wasn’t constructed to keep people together for that long’ (Savulescu, in interview with Storr, 2013). Justifications for neurochemical intervention into ‘love’ often look to the example of the humble vole:

‘There is intriguing overlap between the brain areas involved in vole pair bonding and those associated with human love. Dopamine-related reward regions of the human brain are active in mothers viewing images of their child. Similar activation patterns are seen in people looking at photographs of their lovers.’

Young, 2009

Note the numerous implicit translations emerging in just this brief passage. Collated together are measures of wellbeing, the pair bonding of voles, maternal love, and marital love, all imported and converted into the common currency of the neurochemical. Love and the institution of marriage thus threatens to come under the gaze of this ‘normative facticity’ of neurology (Hartmann, 2011: 75), rendering as an act of matrimonial duty – or indeed an obligation towards whatever we mean by love itself – the acquiescence to neurochemical intervention. We shall remake ourselves in the image of the faithful vole. Strangely, Savulescu and Sandberg (2008: 38) even invoke a deontological skew in suggesting a ‘duty to love’, questioning Kant’s famous rejection of this idea:

‘Love is a matter of feeling, not of willing, and I cannot love because I will to, still less because I ought to (I cannot be constrained to love); so a duty to love is an absurdity.’

Kant, 1797: 161

But, submit Savulescu and Sandberg, in this forthcoming age of moral enhancement one can potentially repurpose the self and engineer such feeling via neurochemical means, or at least

‘... we can make love more probable by manipulating its biological determinants, in the same way as setting the lighting to a romantic level. If there is a duty to be faithful to one’s partner, or a duty to do the best for one’s children (and so remain in a stable relationship), these could ground a duty to try to influence love through biological enhancement.’
Suffice to say ‘setting the lighting to a romantic level’ is an oddly drawn equivalency that we might wish to question. Savulescu and Sandberg’s (2008: 35-7) proposed ‘love’ enhancements that they deem of parity to amorous light-dimming include the use of pheromones, testosterone, along with oxytocin and vasopressin for ‘pair bonding’, and even enactogens like MDMA. They suggest that potential fears of diminishing widely-held ideals are unfounded, rather Sandberg (in interview with Storr, 2013) seeks to assuage our potential misgivings by stating that ‘it might be that the systems underpinning the pair’s bond are giving up for completely biological reasons. Nothing to do with you or your partner’. In response, we might ask if the strengthening of our treasured ‘pair bonds’ via neurochemical means would not feel hollow and inauthentic somewhere in the recesses of our psyche, for – given that our prior falling out of love had ‘nothing to do with you or your partner’ – what credit, comfort, and delight could we then take for our better, stronger, love generated by neurochemical self-subversion? What looping effects might this potential dissonance generate? Through such modelling of ‘love’, whatever we mean by this elusive ideal may find itself disaggregated into parts that are perhaps less than its sum.

It is strange to consider that we may be normatively expected to cultivate our dispositions at the molecular level, so that we may dutifully uphold our ‘happiness scripts’ (Ahmed, 2010: 59). But might such acts of literally ingesting or injecting one’s propensity to marital fidelity displace the ‘virtue’ of marriage to the substance itself, while further entrenching the purported wider societal benefit of the good old nuclear family? Moreover, through injunctions to neurochemical intervention the ‘family unit’ may once again be reconfigured as one of the societal surfaces of emergence: the spaces and collectives within which normative frameworks classify and arrange subjects in daily life, and through which rationalise permissible interventions upon them (Foucault, 1972: 41). In this way ‘neuro-enhancement’ may become laden with normative expectations so overdetermined as to be hollow caricatures of virtue. In a future society of widespread neuro-enhancement we are at risk of chemically bludgeoning each other into preformed categories, rather than exploring new socio-political possibilities afforded in exploring our psychosomatic complexity. Rather than going down the obvious well-trodden path in critiquing the rise of psychopharmaceuticals, however, I would like to turn to an emerging industry, one seemingly less invasive, but often accompanied by ethical injunctions that may prove similarly formative in shaping our relation to our brains.
Neurobics as technologies and techniques of the self

So far in this chapter I have discussed how hard transhumanists have proposed we embrace a ‘culture of enhancement’, in part for reasons of both virtuous personal endeavour and collective benefit (Sandberg and Savulescu, 2011: 106). Such a culture is to be variously enacted and perpetuated through: an ethos of ‘healthism’ over an expanding terrain of the self (Crawford, 1980); personal ‘responsible-ization’ combined with the ‘marketization’ of life (Rose, 2007: 4) that encourages a very particular form of ‘reflexive hermeneutics’ (Rose, 1996: 32, 77); the spread of technosomatic instrumental rationality (Hartmann, 2011: 71; Pickersgill, 2011: 449); the ‘valorization of self-control’ (O’Connor & Joffe, 2015: 727) and ‘neuroascetic’ (Ortega, 2011); and altogether propelled by the promissory, evocative rhetoric embedded in the touting of new, scientific means of ‘objective self-fashioning’ (Dumit, 2004). A contemporary, everyday example of this heady confluence can be found in the rapid emergence of the ‘brain training’ or ‘neurobics’ industry, which, despite its increasing popularity, has largely escaped the critical gaze of the social sciences, with some notable exceptions (see Brenninkmeijer, 2010; Ortega, 2011; Pitts-Taylor, 2010; Thornton, 2011b; O’Connor and Joffe, 2015, Pickersgill, Martin, and Cunningham-Burley, 2015).

Brain training, as it is currently conceived, operates under the presumption that through carefully designed and cognitively-demanding activities – usually packaged as small gaming tasks – a person may improve their cognitive abilities in ways that generalise beyond the iterative and highly scripted bounds of the ‘training’ undergone (see Hardy, Farzin and Scanlon, 2013). Since its emergence proponents of neurobics have vigourously sought to ground the industry in scientific rigour – though the actual efficacy of brain training still remains hotly contested – while also appealing to desires for maximising our intellectual capabilities and our fear of cognitive decline. Neurobics is therefore of particular interest here, given that current debate over its efficacy entails that the ‘looping effects’ of these habits – ie. how neurobics reflexively shapes the way we think of ourselves – may prove far more influential in reconfiguring the subject than the actual intended therapeutic and enhancement effects. Neurobics is also curious for being wrapped in the pleasures of consumption and leisure, a rejection of the ascetic virtue of old in favour of the co-production of both fun and self-improvement. The lively and promissory rhetoric of neurobics marketing urges consumers to see potential in their malleable brainhood, and the accompanying possibilities of self-fashioning through neuroplasticity. In this way ‘sculpting the brain’ may become ‘a form of moral practice’ (Thiele, 2012: 119), with evolutionary analogies combined with neoliberal...
imperatives likewise advising that we should hone a ‘synaptic survival’ ethic in order to adequately adapt to modern life (124). Popular outputs touting our neuroplasticity inform us that

‘... moment by moment we choose and sculpt how our ever-changing minds will work, we choose who we will be the next moment in a very real sense, and these choices are left embossed in physical form on our material selves.’


This ethos of brain optimisation has gained (some) traction amongst lay subjects, with the effort to train one’s brain viewed a ‘virtuous, admirable objective’, while those ‘who flouted this norm sometimes attracted disapproval’ (O’Connor and Joffe, 2015: 17). However, we should be careful not to overstate the current influence of ‘brain training’ for, as observed by Pickersgill, Cunningham-Burley, and Martin (2011), neuroscientific discourses are not yet totalising the subject’s conduct as they accord themselves to the demands of the social world in everyday life, rather, the neuro constitutes only one part of our practices as ‘bricoleurs’ of various logics and normative regimes. That said, the authors also note in a later paper that the reflexivity of lay subjects shown towards brain training is remarkably varied, and will likely inform ongoing socio-cultural framings of how we might position ourselves in relation to our brains (Pickersgill, Martin and Cunningham-Burley, 2015).

These qualifications aside, what I would like to suggest here is that – through the promise of enhancing oneself by means of ‘brain training’ – the terrain of the neurological becomes a new site of an ‘accumulation strategy’, a new space through which capital may circulate (Harvey, 2000). The subject – embarking upon a project of ‘accretive’ life building (Berlant, 2011: 98) – willingly presents themselves for assessment before the ‘calculated technology of subjection’, and so becomes ensconced ‘in that circulation process as consumer and reproducer of self’ (Harvey, 2000: 110). Altogether this is a perfect assemblage of all those volitions that sustain and perpetuate late capitalism, of subjects having fun while also improving their value-bearing capacities, and moreover paying for the privilege. The mind and body are always an ongoing project to be worked on by the individual, another site for the production of ‘biovalue’ (Waldby, 2000, 2002) and ‘life as surplus’ (Cooper, 2008). But such ledgers are always shifting; what constitutes cognitive surplus at any point in time is of course contingent upon socio-geographical context (Harvey, 2000: 98). In this way assessments of our value-bearing capacities are now working their way into our neuronal wetware, even if the scientific rigour behind such assessments matters less than its looping effects and ‘normative facticity’ (Hartmann, 2011: 75). In this way we position ourselves in relation to our own brains as a
resource to be maximally cultivated and then extracted for its ‘mental capital’ (Slaby and Gallagher 2015; Pitts-Taylor, 2010; Thornton, 2011b).

This neurological self-fashioning occurs through technologies and techniques of the self ‘by which a human being turns him- or herself into a subject’, labouring within given prescriptions and affordances ‘so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality’ (Foucault, 1988: 18). This labouring upon the self has increasingly taken on qualities of a prudential, anticipatory ethos, sustaining a ‘political economy of hope’ (Rose and Novas, 2008: 442, see also Pickersgill, 2013b: 328). Idealised biological citizens will speak of themselves in frames that disaggregate and apportion propensities and measures of ‘wellbeing’ and ‘happiness’ to the (dys-)function of biological mechanisms, an approach to self-fashioning informed and shaped by rhetorical channels of designated expert gazes (Rose and Novas, 2008: 445-6). To live well, then, is determined by one’s willingness to heed such dictates of personal responsibility and self-governance, and to diligently apply them, even if that means one has ‘to take up Sudoku and mind gyms in the belief that if they act this way, they may be saved’ from neurodegenerative disease and decline (Rose, 2013: 7). The ‘soul’, which is today resubstantialised as the ‘brain’, must be rendered visible and tangible through mechanisms that are predicated on confirming what is already valued in the socio-political sphere, and it is through this circulating logic that the soul/brain will come to know itself (Foucault, 1988: 25).

It is within this context of prudence, hope, and rendering oneself more visible, that the neurobics industry has thrived, looking to crack ‘the brain fitness puzzle’ and ‘the key to self-empowered aging’ (Fernandez, 2015). Marketing and popular media outputs on brain training have often framed complex phenomena as ‘essentially neurobiological’, and espouse the brain as something to be ‘trained’ (Pickersgill and Van Keulen, 2011a: xiii-xiv). We are, for instance, frequently warned of the forthcoming ‘epidemic’ in the prevalence of neurodegenerative disease, while also being informed of ways we might be able to stave off such cognitive decline (see next chapter). With this considered in light of the somewhat stalled progress from the ‘pharmaceutical machine’ it is not surprising to see other commercial entities stepping into the fray to both assuage and exploit our concerns (George and Whitehouse, 2011: 591). It appears that ‘brain training’ fits our contemporary ethos of self-improvement that is seen to be grounded upon scientific foundations, for to be considered astutely self-governing today ‘is to be condemned to seek an authority for one’s authority’, and thus we willingly give over assessments of our own wellbeing to parameters set by the expert gaze (Rose, 1999: 27). In many ways, therefore, the rise of the brain training industry is part of the broader trend of the
'quantified self', where seemingly precise metrics and measures are overlaid, or simply supplant, more holistic and self-generated assessments of our wellbeing (Lupton, 2013; 2016).

Proponents of neurobics have striven to assert the empirical credentials and scientific legitimacy of their products and services through frequent appeals to neuroplasticity (see, for example, Hardy, Farzin and Scanlon, 2013: 2-7). However, evidence for the efficacy of such methods of brain training is still inconclusive, with some studies suggesting moderate improvement in cognitive function (Au et al. 2015; Smith et al. 2009), while other studies have found no evidence of generalizable benefit (Melby-Lervag and Hulme, 2013; Owen et al. 2010). This debate has become quite contentious, recently entering the public arena through opposing open letters penned in 2014, each signed by dozens of scientists, with the first arguing that

‘... claims promoting brain games are frequently exaggerated and at times misleading... aggressive advertising entices consumers to spend money on products and to take up new behaviors, such as gaming, based on these exaggerated claims... However, as the findings accumulate, compelling evidence of general and enduring positive effects on the way people’s minds and brains age has remained elusive.’

Stanford Center of Longevity, 2014

The second open letter firmly countered that

‘... a substantial and growing body of evidence shows that certain cognitive training regimens can significantly improve cognitive function, including in ways that generalize to everyday life. This includes some exercises now available commercially.’

Cognitive Training Data, 2014

Yet while it cannot yet be conclusively proven that ‘brain training’ – as it is currently conceived – is efficacious or otherwise (Jak, Seelye and Jurick, 2013), there does appear to be a promissory imbalance given that the ‘popularity of products designed to slow brain aging might have outpaced credible scientific data to show that these interventions are effective’ (Papp, Walsh and Snyder, 2009). Such popularity has occurred, in part, through the increasing emphasis placed upon the individual to labour towards cultivating their mental acuity, both to improve their day-to-day performance and to perhaps forestall the onset of neurodegenerative disease and disorder. Rationales for this personal ethic are captured aptly in this statement from Sharp Brains (Fernandez, 2015: 37), an entity that positions itself as ‘an
independent market research firm tracking health and performance applications of neuroscience:

‘When we conducted in-depth focus groups and interviews with respondents, the main question many had was not what has perfect science behind, but what has better science than the other things people are doing—solving crossword puzzle number one million and one, taking ‘brain supplements,’ or doing nothing at all until depression or dementia hits home.’

The implication here – and very much endorsed by ‘Sharp Brains’ – is that although efficacy may not yet be conclusively proven, this does not absolve the individual from undertaking a personal regime of brain training, for as upstanding ethical citizens something must be done with an eye to tending to our cognitive capacities, otherwise one would be seeming to embrace an indolent, defeatist lifestyle, waiting for depression or dementia to ‘hit home’. Crosswords are implied to be a monotonous, repetitive, and quaint method of the past, crude placeholders before the rise of rigourous and practically applicable neuroscience, while ‘brain supplements’ are in turn only briefly noted with a pejorative, sceptical tone. Overall this amounts to a clever rhetorical appeal to embrace ‘cross-training our brains’ (Fernandez, 2015), with frequent analogies to aerobic exercise evincing

‘...the belief that this new generation of strenuous games, puzzles, and brainteasers can encourage the growth of synapses and dendrites and enhance cognitive health just as aerobic workouts improve pulmonary health...’

George and Whitehouse, 2011: 591

However, while excessive claims do seem to abound wherever the neuro prefix emerges, we should not dismiss the entire gamut of brain training as snake-oil opportunism. The increasing prevalence of dementia, for instance, has become an enormous public health issue and source of personal concern (see next chapter), so we can (perhaps) forgive some speculative proclamations and accompanying hopes of averting neurodegeneration through new forms of care of the self. Furthermore, the typical labours of current brain training are largely harmless in any direct sense, although we should cast a watchful eye over the longer term looping effects that may emerge through the fervid desire to tame and train our brains in accordance with prescribed standards.

To this end, the following discussion will address the current most popular product within the ‘brain training’ industry: the web-based subscription service Lumosity. This product is one amongst a litany of similar services that combine self-help with leisure through the
‘gamification’ of cognitive attributes deemed virtuous, valuable, or otherwise desirable (Rabipour and Raz, 2012). Lumosity has become hugely popular in just a few years, and currently boasts 70 million paying members, tempted by the offer of ‘cutting edge neuroscience personalized for you’. Like other commercial brain training products, the veracity of Lumosity’s claims have been widely questioned, both in academia (Redick et al., 2013), and in the popular media (Cook, 2013). In response, Lumosity has sought to establish their scientific credentials through their ‘Human Cognition Project’ and ‘Lumos Labs’, where ‘In-house scientists refine and improve the product’ (Lumosity, 2014), along with producing research papers that effectively double as customer and investor pitches (Hardy, Farzin and Scanlon, 2013). Lumosity (2015b) also draws the potential customer’s eye to research that has been conducted using their service. In addition advertising attempts to contextually place Lumosity within the history – and now at the forefront – of neuroscientific research (Lumosity, 2015a).

Like so many popular science books and other mass media outputs it is tempting to simply dismiss Lumosity as exaggerative marketing blather, not worthy of our scholarly attention. But such a dismissal would be to turn a blind eye to the ways in which we are constituted as subjects by such everyday popular rhetoric and practice, for it is

’... at this vulgar, pragmatic, quotidian and minor level that one can see the languages and techniques being invented that will reshape understandings of the subjects and objects of government, and hence reshape the very presuppositions upon which government rests.’

Rose, 1999: 31

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25 While it remains highly questionable as to whether Lumosity’s games can actually produce generalisable improvements in cognition there is no doubt that the sheer popularity of the product has generated an incredibly valuable data set. By January 2013, Lumosity games (or ‘cognitive exercises’) had been played over 600 million times (Sternberg et al., 2013). Thus even without conclusively proving the efficacy of their product this data set has provided a fruitful cache for other research (collected at a profit, no less). Peer-reviewed research published by Lumosity employees or others using the Lumosity platform can therefore provide some useful insights on the general correlation between self-reported sleeping habits, alcohol intake, age, and exercise with performance in Lumosity games, all without actually needing to prove the cognition-improving efficacy of the product. Indeed, the promoted studies published ‘using Lumosity as a cognitive training tool for diverse populations, including healthy adults, cancer survivors, elderly people, and children with a genetic disorder’ (Zhang, 2014) tend to be of this general statistical aggregation kind, rather than actual measures where the effectiveness of the product itself is the independent variable to be tested (see, for example, Kesler et al., 2011; Rattray and Smee, 2013; Geyer et al., 2015).
As such Lumosity is worthy of further investigation, if only because of its great success and savvy rhetorical strategies, presenting logics that espouse a particular ethical relation we should adopt towards our brain; a type of brain, moreover, that has been reduced to a narrowly derived set of functions which we are enjoined to maximise. Here, for example, is how Lumosity (2014) pitches itself to consumers:

‘Lumosity is a personal trainer that helps you exercise your brain. We’ll help create a training program that’s right for you, based on neuroscience research from top universities around the world. Here’s how it works: Lumosity scientists have taken common neuropsychological tasks out of the lab, designed some new ones, and transformed these scientific tasks into over forty fun games. You’ll play five games in each of your daily work outs. Every game targets an ability important to you, like memory, attention, problem solving, and more. Train 15 minutes a day, three to five times a week, to challenge and exercise your brain. Then track your progress over time, see how you compare to people like you, and enjoy your brain training journey. Start a workout right now and discover what your brain can do.’

There are a number of appeals made in this short pitch. The first is of equating neurobics with other forms of ‘fitness’ and habits of vigourous self-discipline by emphasising the similarity to using a personal trainer, and where sessions are ‘work outs’ designed to ‘exercise your brain’. The recommendation to ‘train’ fifteen minutes a day, three to five times a week also speaks to this aerobic fitness analogy. Also noteworthy is the offer of a personalised and tailored service, giving the user the ability to focus on what is ‘important to you’. This implies the promise of comfortably domesticating Lumosity not only into daily routines and practices, but also enables the program to serve as the storehouse and measure of one’s aspirations to wellbeing. Appeals to precision are also present, whereby consumers can closely monitor their progress and compare themselves to their cohort. There is also an appeal to the ‘fun’ of brain training in the above pitch, and, lastly, there is a petition of potential waiting to be realised, for with Lumosity you will ‘discover what your brain can do’.

Such appeals are somewhat more subtly embedded in other promotional material, as evident in the screenshot below, purported to be depictions of Lumosity members. Note the resounding emphasis on young, physically active users, generating an aspirational ethos by equating health, youth, vitality, and an adventurous approach to life with caring for and maximising one’s brain. Members from 182 countries across the globe certainly constitutes a diverse group, but, we are told, ‘no matter where they come from or what they do, they can challenge their brains with Lumosity’. Such rhetoric espouses a democratic ethos of self-
improvement, open to all who are willing to accord themselves to a positive program of neurological self-fashioning.

In 2012 Lumosity launched a marketing campaign to introduce, normalise, and ultimately sell the ethos of brain training to consumers. The ‘Why I Play’ campaign combined elements of aspiration and emulation, along with presenting to potential customers a new science-based means of care of the self. This campaign featured a series of commercials, designed primarily with television in mind, but also used in other media outlets. Each commercial, thirty seconds in length, was fitted to the same template: an actor portraying a happy Lumosity user would speak to a personal example regarding the imperative need to enhance their brain, while also not neglecting to emphasise the pleasurable aspects of the product. The actor appears to be addressing an interviewer off screen, and each commercial is shot in a seemingly public area, thus creating the impression of an impromptu vox pop endorsement of Lumosity from a random passer-by. As the actor waxes lyrical lively animations play around their heads to signify buzzing cognition, with imagery matched to whatever the actor is discussing. Each
actor was, of course, impossibly attractive and the perfect embodiment of the late modern subject, one who possesses an unending personal drive for both self-improvement and the consumption of pleasure, thereby tying Lumosity to an aspirational ethos.

Each advertisement in the series ended with the same voiceover:

‘Any brain can get better, and Lumosity.com can help, it’s like a personal trainer for your brain, improving your performance with the science of neuroplasticity, but in a way that just feels like games. Start training with lumosity.com right now, and discover what your brain can do’

This rhetoric results in curious cleavings and attachments, for the brain is given a bounded quality, framed almost as if it were external to the subject, and somehow both an agent in itself and a property to be tended to. This external agent/object is corralled and tamed by the subject, ‘trained’ in order to take advantage of its neuroplasticity in ways that improve ‘performance’. This process of externalising the brain and then re-integrating it into a new instrumentalist framework results in an ethos ‘not only of one’s personal destiny, but even of reality itself’, for to repurpose the brain is to reconfigure the very way in which one approaches the world (Ortega, 2011: 42, see also Brenninkmeijer, 2010: 108-9, 115-118). As George and Whitehouse (2011: 591) observe, the result of this both ascetic and pleasurable
ethos is ‘a certain “fetishization” of the brain that renders the 3-pound organ in our heads both an object of alterity and veneration’.

Such a fetish-ethic is encouraged by Lumosity advertising, wherein the actors posing as devoted adherents will speak of their desire to ‘stay sharp’, and that with Lumosity ‘I am happier with my brain’ or ‘my brain feels great’. Analogies to aerobic and weight-training exercise occur throughout these advertisements, espousing the goodness of training the body, and expressing gratitude that now there is a way to similarly train the brain eg. ‘Now my body is strong and so is my brain’. Several of these faux-enthusiasts also praise ‘the science behind the games’, along with noting the desire to maintain their cognitive capacities as they age (thus gently touching upon the dread of neurodegeneration, see the following chapter). This gentle invocation of the imperative of neurological self-care – then smoothly tied to the uptake of a habitual practice – resonates with Foucault’s observation that the modern subject now moves within a regime of ‘permanent medical care’, a vocation where they ‘must become the doctor of oneself’ towards an end of ‘a certain complete achievement of life’ (Foucault, 1988: 31). This ‘complete achievement of life’ is bounded within overarching imperatives that determine the success of one’s day-to-day ‘completion’, and along these lines another Lumosity ‘Why I Play’ commercial draws attention to the burdensome expectations placed upon our brains today:

‘I’ve got emails, phone calls, news to stay up on, it’s like my brain’s under siege out there! I just needed an edge, and Lumosity has all these games based on neuroscience, and my brain can really tell the difference. I’m still under siege, I’m just better armed.’

Again, there is an insistence on this ethic-fetish of both being and having a brain, a property to be tailored and trained so that it ‘can really tell the difference’ and give you that ‘edge’ to succeed in the siege warfare of late capitalism.
Another variant of this ‘Why I Play’ template gently instills the notion that brain training may even be a necessary obligation for those who desire to be the kindest, most caring persons they can be:

‘I started Lumosity for me, but it’s been pretty good for the people around me too. I remembered my friend’s birthday, which is good, but I also remembered this bag she liked and I remembered the store where we saw it. Better friendship through neuroscience, who’d a guessed?’

A similar appeal is made in another ‘Why I Play’ iteration, wherein a mother expresses her relief that now ‘each brain in the house gets a little better’. The implication is that to care for another is to care for their brain, along with maintaining and enhancing your own. Such examples of better friendship and parenting ‘though neuroscience’ also touches on the ‘generosity’ of psy and neuro discourses in fostering the translation of once rarefied frames and jargon into everyday vocabularies and habits (Rose, 1996: 33-34). This ‘generous’ translation is even made apparent in the visual imagery of advertisements, where (see above) hearts stand in for neurons as little potentiating synapses of affection. To train one’s brain is thus framed as an admirable quality of those who seek to be a source of joy, comfort, and care for others.

Upon starting their ‘brain training journey’ Lumosity users are spurred on with encouragement to ‘build your personalized training program’!’. Novice trainers are asked questions around
what time of day they feel most productive, their sleeping habits, their general mood, exercise habits, age etc., along with what qualities of their cognition they would most like to improve. A competitive drive is stoked, urging users to ‘see how you stack up against different types of members’. To further ensure the association between brain fitness and aerobic fitness users are informed that ‘Our neuroscientists recommend 3-5 workouts a week to maximize the results of your training’, while also enabling the user to integrate data from a ‘Fitbit’ device (a self-tracking device typically used to measure aerobic fitness). The neurobic and the aerobic thus become twinned as complementary endeavours.

After a prescribed number of daily training sessions are completed the user will receive their ‘Performance Report’, which includes a comparison of their results with others arranged by occupation group, implying – in a broadly neoliberal fashion of maximally realising one’s value-bearing capacities – which line of work your particular brain may best be suited. Users can also regularly look over their ‘Brain Profile’ to see their ‘Best Brain Areas’. This is where crude looping effects and narrow reductionism threaten most perniciously, for in the schema given by Lumosity the ‘brain’ is divided into the five categories of ‘Attention’, ‘Flexibility’, ‘Speed’, ‘Problem Solving’, and ‘Memory’. That these all happen to be the ideal capacities of the conscientious and productive neoliberal subject hardly needs pointing out, but more worrisome is the implied ontological refiguring of these qualities into properties of the brain itself. The five qualities measured by Lumosity make up your entire ‘Brain Profile’, and the ‘Brain Performance Index’ ensures that ‘users know where they fall with respect to their own performance using a single number’ (Hardy, Farzin and Scanlon, 2013: 10). As a result the wondrous complexity and infinite potentiality of our cognitive assembly is reduced to a narrow ‘profile’ of functions, percentages, and indexes, all framed and labelled through the buzzwords and mantras of the corporate world.

So while it remains contentious as to whether such services may, as they claim, ‘train’ a brain by harnessing our neuroplasticity, be apprised that the claims of this rapidly growing neurobics industry most certainly contribute to entraining and championing a particular kind of subject. This ideal subject thinks of themselves with regard to their always improvable capacities of – in the case of Lumosity’s ‘Brain Profile’ – attention, flexibility, speed, problem solving, and memory, and turns over the assessment of these narrow properties to the objective, rigorous gaze of a purportedly lab-developed program. Within these parameters and prescriptions subjects will be ranked against their peers (all 70 million of them) down to one tenth of a percent. Care of the self thus extends to the subject conscientiously tracing their relative performance against the cohort, conducted through a mechanism that purports to be the objective ledger of their cognitive capital.
Lumosity is designed to be a habitual practice, routine while also fun, an exemplar of the consumption of virtuous leisure in a socio-economic milieu that heaps praise upon the ‘hypercognitive’ subject and fears the degenerating one. Within the rapidly increasingly prevalence of neurodegenerative disease George and Whitehouse (2011: 591) suggest that brain training enterprises have thrived in this ‘therapeutic void’, so that

‘Rather than being understood as one of many vulnerable organs within an intricate biological system, the brain is perceived as a separate privileged entity that healthy individuals must constantly stimulate, rewire, rebuild, nurture, and attend to if they are to maintain soundness of mind and selfhood.’

The brain is consequently rendered both as equivalent to one’s self, while also being a terrain the owner must assiduously cultivate, and practice good stewardship over. In typical fashion for late capitalism, though, these appeals to care of the self are made palatable by the promise of fun and the realisation of their best selves, altogether generating a hopeful, anticipatory ethic of ‘perfecting themselves from the molecular level outwards’ (George and Whitehouse, 2011: 592). But these promissory discourses – especially when tied to evocative ethical appeals that dictate the ascetic virtue of ‘training’ the brain – are potentially harmful, for espousals of personal responsibility and agency regarding how we care for our brains implies a relation to this organ that is both narrow and unrealistic, and thus in time may prove burdensome.

Lumosity, in part, develops its measures based upon what they believe the consumer will find of most value, but in turn the consumer also gives themselves over to the program’s built-in prescriptions, believing the program’s measures to be capable of capturing both what is societally-valued and personally virtuous. This mutual reinforcement brings a particular kind of relation to our brains further into practice. A new form of both ascetic and pleasurable subjectification is found in the current commercial offerings of brain training, where persons give themselves over to a form of expertise that turns their clicks, taps, and swipes into the making up of their ‘Brain Profile’. Consumers willingly acquiesce to this pleasantly-packaged authority, while these games also serve as an act of tolerable ‘confession’, for before and through them we lay bare the extent of our cognitive capacities (Rose, 1990: 244-5, Foucault, 1978: 59-67). Ultimately this fetish-ethic may serve to become a cruel labour, for it adds a supposed layer of technical precision to conceptualisations of the brain that in actuality are hollow contingencies of present predilections.
Towards an alternative approach

Of course, consumer-friendly brain training products like Lumosity are at the low-intensity end of interventions upon the neurological subject and path-setting of the ways and means by which we are ‘obliged to be free’ (Rose, 1990: 217-232). As such I do not wish to overstate these discourses and practices as completely totalising in their shaping of the subject. Nevertheless, even at this seemingly harmless level can be found invocations of highly charged ethical appeals and promissory rhetoric that may generate an unease that ‘divides, imposes burdens, and thrives upon the anxieties and disappointments generated by its own promises’ (Rose, 1996: 3). I am concerned with how these logics that measure only a narrow range of cognitive capacities may become more normatively-laden over time, yet also constrains the space within which we work towards improving ourselves. Holistic, if imprecise, measures of performance and wellbeing are thus replaced by precise, but ultimately hollow measures.

Here, then, we may relate these concerns regarding the escalating labour of ‘neurobics’ and similar enterprises to Lauren Berlant’s (2011) Cruel Optimism. Such a relation ‘exists when something you desire is actually an obstacle to your flourishing’ (Berlant, 2011: 1) and ‘whose realization is discovered either to be impossible, sheer fantasy, or too possible, and toxic’ (Berlant, 2011: 24). Neurobics certainly fits either or both of these criteria at any point in time, it may initially seem ‘too possible’ that – if one ‘trains’ hard enough – they may preserve and enhance their cognitive capacities. But sooner or later either one’s neuroascetic virtue will fail, or the labour will be shown to be driven by the ‘sheer fantasy’ of averting neurodegeneration. This ethic of self-care may thereby sustain and perpetuate the sufficiently productive subject, but only through squeezing a narrow array of capacities of the individual; it does not necessary sustain us as expansive subjects but rather as an intensively disaggregated bundle of functions, and thus is potentially ‘toxic’.

We invest our time and energies, attaching ourselves with optimism to a promissory object, toiling within its given parameters in the hope that ‘nearness to this thing will help you or a world to become different in just the right way’ (Berlant, 2011: 2). Such an optimism becomes cruel when we are bound to it, equally reassured and disheartened by its unflinching reflection upon us, wedging us in ‘a situation of profound threat that is, at the same time, profoundly confirming’ (Berlant, 2011: 2). The hope in achieving our best selves through quotidian labours and precise assessments risks creating ‘a landfill for overwhelming and impending crises of life-building and expectation’ so that ‘the activity of living demands both a wandering absorptive
awareness and a hypervigilance that collects material that might help to clarify things’ (Berlant, 2011: 3-4). Our ‘hypervigilance’ requires that we seek firm ground on which to know ourselves, and to this end our Lumosity ‘Brain Profile’ and ‘Performance Index’ – compiled through rigorous metrics developed by trained neuroscientists – provide the authority for this practice of vigilance, gently instructing us on how and when to ‘train’, and then assessing our performance in precise quantifications and rankings against others, urging us to ‘challenge yourself to reach the top’.

In this framework we become cruelly attached to the perpetual promise of realising our best selves, with ‘best’ here narrowly bounded in objects and scripts to which we bequeath the authority to assess us. Products like Lumosity may package themselves in fun promissory containers through the offer of attainable vigilance and self-improvement through play, but even here the rhetoric of imperatives made to the consumer risks generating burdensome appeals, instilling ever greater personal responsibilities but in ways reduced to ever more rigidly defined tasks. It is this narrow ‘profile’ of the ideal brain that generates ‘the drag of practical sovereignty, of the obligation to be reliable’ (Berlant, 2011: 116), for notions of ‘reliability’ are already predicated upon diligently according oneself to immutable pre-determined paths. This construction of the subject might thus initially appear to be at odds with our actual daily meanderings of agency:

‘Most of what we do, after all, involves not being purposive but inhabiting agency differently in small vacations from the will itself, which is so often spent from the pressures of coordinating one’s pacing with the working day, including times of preparation and recovery from it.’

(Berlant, 2011: 116)

Brain training products like Lumosity, however, position themselves as both a small meditative relief from such pressures of coordination, while also (ostensibly) enhancing our capacities to deal with them. The ‘play’ of brain training is therefore not a ‘vacation from the will’, but rather its reinscribing and endorsement through a form of virtuous leisure. Therefore, while such products are packaged under the guise of fun and leisure, they remain a form of cruel optimism in affixing ever more tightly the ‘ideal’ subject, for they also heap more responsibility on the individual for this narrow realisation of self. This creates a perpetual labour within the milieu of hyper-competitive individualism, given that the implicit corollary of Lumosity’s empowering tagline that ‘any brain can get better’ is that so also can the brains of everyone else.
Our brains are being resubstantialised into a new terrain, rendered malleable in accordance with overarching dictates. Yet it is lamentable that what is prioritised in light of this potentiality seems so desperately unimaginative, reduced to envisioning incremental improvements on the iterative tasks of today; sufficiently ‘fit’ brains designed only for the quotidian vicissitudes of modern life. Compounding this stultifying vision is its own promissory excess, where “Technologies with a radical potential to transform ourselves and our societies seem always to be “just around the corner”” (Conrad and De Vries, 2011: 314), stoking fantastical excitement over heightened ways to instrumentalise ourselves in line with current role expectations, but never stopping to question the potential effects of configuring our brain strictly in accordance with contemporary vicissitudes.

We should thus reconsider what we might generate in our efforts to tightly affix the ideal neuroethical being – whether it be through the ‘imperative’ need to better manage collective risk, or via the hyper-reflexive self-help individualism of neurobics – so that those lines of possibility outside of current ideal types can ‘register as more than what gets in the way’ (Ahmed, 2010: 195). Surely, it would seem axiomatic that to truly embrace an ethos of plasticity requires that we not presuppose precisely how we should be plastic. Perhaps a new orientation to the neurological subject is required, one that adheres less to emerging dictates of labouring upon the substrates of ourselves in order to induce our own wellbeing.

To this end Sara Ahmed (2010, 2014) provides a fruitful means of circumscribing new forms of ontological freedom, offering a rejection of the imperative to be ‘happy’ while endorsing a turn to the ‘willful’. In rejecting what amounts to a burdensome task of perpetually ‘maximising’ our wellbeing we may be better able to interrogate the underlying rationales of such injunctions, and so open up possibilities for ‘a new political ontology’ (Ahmed, 2010: 195). Ahmed proposes that we might turn away from the construction of a subject who is urged to cultivate themselves to will ‘rightly’, and this chapter has echoed such a view in expressing concern with current aspirations towards aligning ourselves with our ‘best’ volitions through self-subversive mechanisms. There is something strange and anomalous within late modernity in the insistence of being ‘in charge’ of our wills, an injunction that results in a constant state of being ‘at variance with yourself’ given that one could always ‘will’ better (Ahmed, 2014: 7 citing Arendt 1978: 83). But, says Ahmed, perhaps there is an affirming ‘tactic’ in the occasional succumbing to one’s ‘weaker’ wills, for – echoing Berlant – the insistence on enhancing one’s will can be an exhausting and unending project, and not necessarily affirming of volitions that are immanent to us. Not only is it odd to think of ‘will’ today as a property set to work upon itself – that the ‘will trains the will; the will works on the will’ (Ahmed, 2014: 61)
but even stranger to countenance working upon the will through practices of self-help gamification.

In contrast to the categorical neatness of much current neuroethical discourse, then, Ahmed (2014: 18) suggests we reinvigorate will as a ‘sweaty’ concept. Such a ‘sweaty’ will requires a more visceral and unwieldy conception of being, of bodies through which volitions circulate to form brief coalitions to action, with paths not taken leaving residual affects that may compel us differently next time. Similar to an underlying theme in this chapter, this framing of will also requires that we shake off the ‘belief that we can know “in advance” what will improve people’s lives’, for such presuppositions only generate a tightening, self-defeating circularity of wellbeing (Ahmed, 2010: 8). Too often these qualities of wellbeing, known ‘in advance’, are then given over to artefacts that impose scripts and habits upon us within which we labour, and so the promissory becomes contained and bounded within them. Through these immutable external authorities we adopt habits of dutifully managing volitions, of cultivating dispositions, and upholding our somatic citizenship. Ahmed (2010: 28) suggests that we need to loosen our deferential binding to these authorities that induce within us a feeling of ‘anticipatory causality’ towards the object of enhancement, for ‘we might go further with happiness, if we don’t follow its objects around’ (217). The neuroascetic urge to align ourselves with current ideals through a corrupted hyper-reflexivity risks foreclosing other lines of possibility in how we may realise new ways of being.

More broadly, Rosi Braidotti (2013) has been similarly incisive in observing the strangeness of our narrow subscription to humanist ideals that presume ontologically bounded subjects, endowed with rational capacities deemed ‘fundamental’ and ‘essential’ to its being. This view of the subject, argues Braidotti, seems increasingly at odds with our shifting engagement with the world, and so we are now stuck in a ‘post-human predicament’, no longer certain of the ‘basic unit of common reference for our species’ (Braidotti, 2013: 2). This need not be crippling to our self-conception though, and instead presents the opportunity of productive reconfiguration, but only if we can carve out a space for such experimental ontology against the ever-forward motion of set paths of late capitalism.

Braidotti’s (2013: 29) anti-humanist philosophy is not an excoriation of our supposed fundamental flaws, nor a call to eschew hard-won socio-political privileges. Rather, Braidotti’s anti-humanism starts from encouraging us to recognise that the way we engage with the world – now and likely even moreso into the future – renders conceptions of ‘humanism’ a thin, dogmatic, and ultimately obscuring way to describe our various modes of being. N. Katherine Hayles has similarly warned that what is ‘lethal’ regarding the ‘posthuman’ is not that we
might lose our ‘essential’ humanity, but rather that our insistence on retaining old essentialisms and ideals may result in the ‘grafting of the posthuman onto a liberal humanist view of the self’ (Hayles, 1999: 286-7). We will not be well served by remaining beholden to such nostalgic conceptions. Our curious mix of rationalised and affective interactions with animals, the way we instrumentalise natural processes to our own ends, our desire to repurpose our genetic and neurological matter, and the global scale of our production all render essentialist appeals to humanist stances as unhelpful cries of wistfulness (Braidotti, 2013: 7). Consequently, we need a conception of posthumanism that provides a way out of ‘the twin pitfalls of conservative nostalgia and neo-liberal euphoria’ (Braidotti, 2013: 11). Further, as this chapter has shown, this instrumentalisation of narrow conceptions of ideal subjects serves to foment an ever-escalating ethos of cultivated individualism that ultimately does harm to the potential generativity of being. For Braidotti (2013: 26-35), the turn to posthumanism requires that we embrace a nomadic form of micro-politics, one that edges away from the counterposing of matter with culture, and technology with the natural, but rather sees them as entangled and continuous. This will equip us with novel – albeit perhaps less assured – ways of approaching subjectivity, and through this entanglement will afford the space necessary for a subject ‘worthy of the present’ to emerge (Braidotti, 2013: 51).

For now, however, one odd contradiction of the many proposed neuro-enhancement projects is the contrast of the great ambition of the technologies to be applied – eg. remaking the subject at the neurochemical level – with the relative banality of the desired ends, framed by those ‘who attempt to index them to either a predictable conservative profile, or to a profit-oriented system that fosters and inflates individualism’ (Braidotti, 2013: 58, see also Haraway, 1991). Further, this rigid affixing of the citizen-subject emerges through imperatives of ‘a pan-human bond of vulnerability’ – such as the threat of catastrophic climate change or terrorism invoked by aforementioned neuroethicists – that provides only a hollow, negative, and reactive cosmopolitanism (Braidotti, 2013: 63). Thus, while collective crises may usefully compel us to reconsider our relation to the world our too-reactive stances may see the further entrenchment of a stubbornly actuarial form of humanism, only this time rendered into being through the ‘spinning machine of advanced, bio-genetic capitalism’ (Braidotti, 2013: 87).

Braidotti (2013: 93) proposes that we instead develop means by which ‘to escape the regime of commodification that is the trait of our historical era, and experiment with virtual possibilities’, in part through a principle of being ‘not-One’. Within the context of this thesis, this ‘not-Oneness’ entails that we must find means by which we can undo readings of the brain as the sole container of our being, and the likewise insistence on the subject as a wholly unified agent (Braidotti, 2013: 100, see also Braidotti 2002).
Conclusion – A plea for enhancements

In this chapter I have demonstrated how neuroethical insight – particularly through those hard transhumanists who propose that we consider neurologically ‘enhancing’ ourselves – has sought to translate the knotty, nuanced, elusive, and ever-present questions about our purpose and wellbeing into precise, technical, and rigidly demarcated assessments, designed to gauge our varying (dys-)function as cognitive subjects, and to provide the means by which the ideal subject can be better brought into being through neurological interventions. Such means – even when packaged in the pleasurably virtuous play and low-intensity interaction of ‘brain training’ – may prove to be burdensome, for they come laden with ethical injunctions regarding how the ideal subject stands in relation to their cognitive capacities. Moreover, appeals to neurological enhancement from those who deem us ‘unfit for the future’ are often motivated by what Foucault (2006: 362) described as the ‘dread of unreason’: the fear that the irrationality of deviant subjects will unravel the delicate fabric of society, and thus those who do not accord themselves with given prescriptions pose a threat to our ongoing prosperity and must be attentively managed into proper conduct. As I have shown, however, the way in which neuro-enhancement is commonly framed today is with the assumption that we all, in some way, are deviating from a socially desirable state, whether it be through the potential enhancement of our morality, or through the unending possibility of improvement in our value-bearing cognitive capacities.

Therefore, a degree of humility and rapprochement is needed, for ‘just as we do not know what posthuman bodies can do, we cannot even begin to guess what postanthropocentric embodied brains will actually be able to think up’ (Braidotti, 2013: 104). The problem we are faced with is whether our potential posthuman brains will be able to ‘think up’ such possibilities if they are unsparingly subjected to a ‘hard’ transhumanist regime of neuro-enhancement that comes a priori packaged with presuppositions of the ‘good citizen’. Will ‘ethics’ still have generative power under such a program, or will it become fixed and rigid, perhaps ironically rendering ourselves ill-equipped to collectively address the inevitable – but inevitably different from now – future issues we will face as a species? Perhaps then, rather than insisting on current notions of enhancement, we should open lines of inquiry towards the enhancement of subjectivity, an approach girded by the humble admission that we are still so very far from truly understanding the interplay of cognition and ethical wellbeing.
Along these lines Foucault – in one of his final interviews – was asked about the relation between normalisation processes and the production of knowledge regarding the human subject. On this question of the entanglement of these two lines he responded

‘Through these different practices – psychological, medical, penitential, educational – a certain idea or model of humanity was developed, and now this idea of man has become normative, self-evident, and is supposed to be universal ... What I am afraid of about humanism is that it presents a certain form of our ethics as a universal model for any kind of freedom. I think that there are more secrets, more possible freedoms, and more inventions in our future than we can imagine in humanism as it is dogmatically represented on every side of the political rainbow...’

Foucault, 1988: 15

We might consider this as the more positive, but still compatible expression of the epigraph from Nietzsche that opened this chapter. Such a stance of enchancement towards ways of being that we cannot yet imagine asks us to unshackle ourselves from presumptions on how we may best be ‘human’.

What makes such an imaginative unshackling difficult, however, is the shift in practice since Foucault (1978: 59) wrote of ‘Western man as a confessing animal’, whereby we are no longer ‘forced’ either by ‘internal imperative’ or ‘violence or threat’ to rack the depths of our interiority and render them apparent to relevant authorities, all so that we may supposedly realise a new, liberating accord with the composition of our being. Instead and increasingly, the ‘confession’ of today is ‘driven from its hiding place in the soul’ (ibid.) through various non-human actors who ‘read’ our internal states, spitting out hard data to be parsed by aforementioned authorities who then refer to this data in prescribing modes of virtuous thought and proper conduct. This introduction of the mediating device and its intensive gaze, along with the parallel emerging ethos of ‘biological citizenship’ (Rose and Novas, 2008) and ‘neurochemical selves’ (Rose, 2003), has resulted in ever-increasing responsibility accorded to the subject to maintain a state of wellbeing, yet with non-human actors and agents supplanting the role of the intervening and intermediary means by which ‘wellbeing’ is measured and calibrated. Likewise, the human actor is increasingly trained to give oneself over to the measures of the non-human actor, in the understanding that to ‘confess’ requires ceding oneself to be read. Yet this confessional reading – in this case through the molecularly intensive gaze interpreted as ethical functioning – neglects the possibility that we know not what to confess to in interpreting such output, nor what remains hidden in elucidating new modes of ethical being. As I have noted throughout this chapter, such a reading results in
forms of neuro-actuarialism – where the brain is seen as a risky asset to be hedged and then leveraged for its productive capacities – that reduces subjects to upholding an ethos that ‘demands the abandonment of our intellect, of our personal will in order to come to the essential by becoming essential’ (Nietzsche, 2004: 24).

Yet, as Nietzsche (in his typically evocative way) argues in this chapter’s epigraph, we need not insist on our ‘divine’ being, nor – once that divine quality is deemed to be false or unattainable – alternatively insist on working our way back to an elevated status through the ‘progress’ of perpetually confessing our supposed shortfalls and improving those qualities considered unique and essential to our species. Too often such hubris only serves to rigidly affix a contingency that we mistake for a universal, one to which we then cruelly labour upon ourselves to instil within. Perhaps there are more ways of approaching neurological difference in the hope of chancing upon generative entanglements, more reservoirs of ontology to be discovered, and less restrictive conceptions of ‘enhancement’, and in this spirit the following chapter aims to contribute to such an endeavour in exploring the experimental depiction of dementia in fiction.
Chapter Four

Dementia in a Hypercognitive World: Fictional Representations of Subjectivity within Neurodegeneration

‘In dementia many aspects of the psyche that had, for a long time, been individual and ‘internal’ are again made over to the interpersonal milieu. Memory may have faded, but something of the past is known; identity remains intact, because others hold it in place; thoughts may have disappeared, but there are still interpersonal processes; feelings are expressed and meet a validating response; and if there is a spirituality, it will most likely be of that kind Buber describes, where the divine is encountered in the depth of I-Thou relating.’

Kitwood, 1997: 69

For this final substantive chapter I would like to turn from the ambitious proposals of neuroethicists and hard transhumanists in configuring the ideal ethical citizen by repurposing our brains, and instead look towards a seemingly mundane but, I would suggest, far more urgent and promising task. This urgent task is found in rethinking neurological subjectivity in ways not only sensitive to cognitive difference and diversity, but also in considering whether escalating efforts towards neuro-enhancement of ethical capacities both further marginalise those who are neuroatypical, while also neglects to consider avenues of realising alternate modes of ethical being. The promise of this task is made apparent, I will argue, in contrasting the elevation of the ‘hypercognitive’ (O’Neill, 1997; Post, 2000) subject espoused in the previous chapter, with the consequent discourses around, and interactions with, persons living with dementia. Neurodegenerative diseases that result in dementia are capturing the public imagination through fears of succumbing to devastating cognitive debilitation, amongst wider concerns regarding our collective ability to manage practices of care and wellbeing as the prevalence of such conditions rises into the foreseeable future. However, such fears, while understandable, may prevent us from approaching neurodegeneration and neurodiversity in more productive ways. Perhaps, in our fevered desire to maximise our rationality and all those other ‘hypercognitive’ capacities that align with the demands of today, we neglect to consider
the potential expansion of the sense and experience of life that we can achieve if we are willing to understand our varying cognitive qualities in more diverse and inclusive terms.

Works of literary fiction – with their special ability to experiment in depictions of interiority and subjectivity – can play an important role here as a means of becoming cautiously entangled and opening up parallel narratives to prevailing neuroscientific discourses around function and difference. In the spirit of being open to ‘experimental entanglements’ (Fitzgerald and Callard, 2015) with the neurosciences, then, this chapter seeks ways in which we can rethink the recognition we accord to others based on perceptions of their neurological makeup, and so is also an attempt to make a worthwhile contribution to the broader movement of ‘neurodiversity’ (Ortega, 2009) against the narrow prescriptions of aforementioned neuro-enhancement advocates.

Popular accounts of dementia have largely focused on the perspectives of family and primary caregivers, rather than looking to explore the subjectivity of the person with dementia. However, more recent efforts in literary fiction suggest that this creative form may be a powerful means of ‘bringing the social back in’ to representations of dementia (Lyman, 1989). The novels of dementia to be discussed in this chapter wedge their protagonists between third age promises of what possibilities in life may still be realised and fourth age anxieties of reckoning with the loss of capacities and autonomy (Higgs and Gilleard, 2014). These works emphasise the importance of moment-to-moment self-actualisation achieved not through neuroethical hyper-individualism, but rather – as Tom Kitwood suggests in the epigraph – through an interpersonal exchange less reliant on higher cognition than on the fostering of affirming volitions, however they may be realised.

**Introduction: Dementia as entangled phenomena**

There is perhaps no other condition that contrasts more strikingly with the elevation of the ‘hypercognitive’ subject of our advanced Western societies than that of dementia (O’Neill, 1997; Post, 2000). This broad umbrella category of symptoms resulting from neurodegenerative diseases and other conditions (eg. Alzheimer’s disease, Lewy’s body dementias, Parkinson’s disease, cerebrovascular complications, amongst other causal agents) has a prevalence never before seen, and is likely to worsen into the foreseeable future (Ferri et.al. 2005). In many ways, dementia is the exemplar of the double-edged quality of progress and rationalisation, for after either eradicating entirely, curing upon onset, or otherwise
reducing the incidence of many other once terminal afflictions, we are now increasingly undone by an insidious process that we do not yet fully understand, and instead only possess meagre measures by which we can trace its course. We who are fortunate enough to live in the highly developed world are living longer than any of our forebears, thereby pushing the fragile ‘wetware’ of our brains into unprecedented territory.

Our aging populations, combined with a lack of laboratory breakthroughs and effective clinical interventions, may culminate in a predicted quadrupling of Alzheimer’s cases worldwide by 2050, afflicting 1 in every 85 people or around 120 million worldwide (Brookmeyer et al., 2007). In the US, Alzheimer’s disease alone is listed as the sixth leading cause of death, and this is likely an underestimate given the vagaries around formal determinations of cause of death (Alzheimer’s Association, 2014: 25). Between 2003 and 2013 Alzheimer’s and other forms of dementia-inducing conditions have risen from the sixth to second leading cause of death in Australia (Australian Bureau of Statistics, 2015), while in the UK dementia-related deaths currently sit as the third most common across the population, but the most likely cause of death for women (Office for National Statistics, 2015). But of course such figures, startling though they may be, do not really capture the social impact of disease, emergent through the ‘nexus between biological event, its perception by patient and practitioner, and the collective effort to make cognitive and policy sense out of those perceptions’ (Rosenberg, 1989: 4). Yet for now, unfortunately, it seems that prevailing considerations of dementia are rather limited in scope. Public discussion of dementia – once again slipping into neoliberal frameworks of assiduously measuring our value-bearing capacities – has often framed the rise of neurodegenerative disease as an urgent crisis in health policy, a forthcoming ‘expenditure time bomb’ that raises the pressing need for somatically responsible citizens ‘to take steps to prevent the wastage of their mental capital’ (Beddington et al. 2008: 1060, MacDonald and Cooper, 2007). Such ‘apocalyptic demography’ (Robertson, 1990) can dominate public forums to the detriment of micro-sociological questions of autonomy, agency, care, and the value of ‘emotional labour’ (Hochschild, 2012) in ensuring quality of life for those with dementia.

The collective effort to develop effective counter-measures within standard frameworks of health and wellbeing has proven fiendishly difficult, for dementia as a medical category ‘oscillates uncomfortably between neurological and psychological referents’; often diagnosed through behavioural and cognitive measures, but only confirmed post-mortem in the brain’s neurofibrillary tangles, plaques, and erosions (Kitwood, 1989: 3). Attempts to precisely categorise types of dementia are likewise beleaguered by the brain’s highly variable manifestations of pathology, which are ‘expressed more clearly in text than in tissue’ (Gilleard, 2000: 102). Adding to dementia’s categorical problems are problematic social constructions of
ageing and accompanying assessments of value and self-worth (Post, 1995; Gergen and Gergen, 2000; Beard, Knauss and Moyer, 2009).

Clinicians and laboratory scientists alike hold that the aetiology and causal agents of dementia are the result of complex heterogeneous interactions, with causality almost impossibly difficult to disentangle from: processes of age and degeneration; mental illness (especially depression, see Jorm, 2000); and elusive theories of a ‘cognitive reserve’ that may stave off functional loss despite neuropathology being present (Samet and Stern, 2011; Stern, 2006). Practitioners are also acutely aware of causing unnecessary distress and inadvertently enabling stigma through diagnoses of dementia, particularly in cases where no effective therapeutic intervention is available (Johnson, Bouman and Pinner, 2000). Consequently, this diagnostic reluctance may have knock-on effects in accurately measuring rates of prevalence (Vernoorj-Dassen et.al., 2005). Furthermore, long-debated considerations of both categorical nuance and social stigma have led to the recently released DSM-5 removing the term ‘dementia’ from the manual entirely, replacing the previous diagnostic ascription with ‘minor’ or ‘major’ neurocognitive disorder. This is arguably a welcome development given that ‘dementia’ has a battery of ingrained connotations that may generate harmful presumptions of incapacity, of being ‘demented’. However, this change may also prove unhelpful, for the vagueness and lack of cultural cachet of the new terminology may render advocacy and other political engagement all the more difficult. That said, for the following discussion I retain the umbrella term of ‘dementia’ despite its socio-historical stigma and etymological origins of being ‘without mind’. For better or worse, ‘dementia’ has ‘symbolic power’ worth protecting while we simultaneously labour to remove its associated stigma (Lock, 2013: 241). I think it is unlikely that the categories of ‘minor’ and ‘major’ neurocognitive disorders will be taken up in the wider public consciousness and, for this reason, I maintain that scholarly and advocacy interests are better served by retaining ‘dementia’ as an orienting and rallying term, and from this terminological foundation working towards adjusting popular misconceptions.

Issues of taxonomy and terminology aside, the phenomenon of dementia certainly raises fraught ethical quandaries, for principles of beneficence, avoidance of harm, and the accordance of autonomy and respect take on complexities not typically present in other cases of terminal illness. A notable example of this complexity is the consideration of when and whether it is permissible to lie or mislead persons with dementia for their own benefit, a dilemma not normally encountered in comparable illnesses (Schermer, 2007; James et al.

However, while I retain the use of the category of ‘dementia’ there will be little reference to those living with dementia as ‘victims’, ‘sufferers’, or the ‘demented’. Rather, in accordance with guidelines from advocacy groups (Alzheimer’s Australia, no year), less evocative and reductive language is used, such as ‘living with dementia’ rather than ‘being’ one’s dementia.
The already weighty considerations of end-of-life processes may become even knottier when they butt up against the cognitive deficits and associated social isolation of those suffering dementia (Schulz et al., 2003). Prior to this late stage of dementia, the sufferer often finds themselves in a situation of having to reckon with a life that is being stripped of its narrative drive; the narrative propulsion towards a synthetic and linear sense of ‘my life’ becomes more and more disturbed. Once fulfilling and self-affirming occupations and activities may need to be relinquished, further disaggregating the self and disrupting its narrative, and social engagement becomes increasingly difficult as language capacities diminish (Bender and Cheston, 1997; Fontana and Smith, 1989; Gubrium, 1987, Holst and Hallberg, 2003; Lyman, 1988; Sabat and Harre, 1992; Werner, 2005). Objects lose their previous referents, temporalities clash and collapse, shrinking the temporary coalition that makes up the self into ever smaller windows of coherency (Cappa et al., 1998; Orona, 1990). Once casual displays of personhood will become strained undertakings, punctured with the increasing frequency of failures in the ability to pass as neurologically ‘normal’, and so resulting in increased dependence on close confidants to uphold performative aspects of identity (Fontana and Smith, 1989). Ascribed statuses may shift and stigmas can wound and fester, with all behaviours now framed by others through the new master status of being ‘demented’ (Van Gorp and Vercruysse, 2012; Milne, 2010; Blay and Peluso, 2010).

Neurodegenerative diseases are incredibly idiosyncratic in manifestation and rarely run a smooth course of manageable decline, hence such conditions are not easily amenable to precise, rationalised programs of care (Kitwood and Bredin, 1994; Kitwood, 1992). Capacities can wax and wane, sudden losses are frequently observed, while varying degrees of ‘dementia’ (temporary regaining of abilities) are also quite common. What manifests, then, is a gradual disorganisation of self, a process requiring a cautiously negotiated ‘structuring and destructuring’ of the self and its changing relation to the world (Gubrium, 1987).

This relational, interdependent labour – characterised by the gradual refiguring of the bounds of capacity and negotiating how a person may best feel affirmed within the constraints of neurodegeneration – contrasts wildly with the ideal subject envisioned by hard transhumanists discussed throughout this thesis, who stubbornly focus on the accumulation of ‘higher’ cognitive capacities. Combined with an overarching ethic of personal responsibility, such neuroethical frames may generate a cruel perpetual labour, with care of the self bent upon feverish ‘brain training’ in the largely Sisyphean hope of averting neurodegenerative disease. However, if we can reorient neuroethical approaches in ways that do not insist – via intensive, self-disaggregating means of highly prescriptive ‘enhancement’ and ‘training’ – on heightening our rational and ‘productive’ capacities, then we may also discover ways of rethinking our
approach to dementia, and to the question of subjectivity and ethical wellbeing more generally.

The emerging somatic ethic bequeathed to the neurological subject – described throughout this thesis as undertaken via intensive means, but directed to (narrowly) expansive ends – needs to be understood in the context of an equally generalised fear of cognitive decline, with dementia ranking amongst the most feared ailments (Blay and Peluso, 2010; Corner and Bond, 2004; Cantegreil-Kallen and Pin, 2012). Given the condition’s growing prevalence, a more productive rearticulation of what is at stake in the diverse experiences gathered under the umbrella term of dementia seems crucial. In particular, this chapter is concerned with how works of fiction might serve to rescue framings of neurodegenerative disease from the current wedged position between: a terminal illness to which we look to the laboratory for preventative and curative breakthroughs; a parlous, maligned state as the seeming antithesis of our ‘hypercognitive’ society; and finally the experiences of those who must live with these conditions, usually for several years, and so find themselves in a state of ongoing ontological precarity.

Fictional works, I suggest, provide insight that can alleviate these sociological discords, while also looking to mimetically capture something of the elusive subjectivity of living with dementia. This is a pressing task, for it has long been observed that characterisations of dementia in popular discourses have unduly skewed towards the horrific and monstrous qualities of neurodegenerative disease (Clarke, 2006; Kirkman, 2006; Robertson, 1990; Segers, 2007; Van Gorp and Veycuysse, 2012). This focus understandably reflects a commitment to gritty realism, but is also an inadvertent outcome of the effective work done by early advocates in attempting to raise public awareness, and to attach to the disease a sense of legitimacy and urgency (Herskovits, 1995). Indeed, much of the advocacy-focused literature produced in order to stoke awareness and monetary donations has been characterised by its tragic rhetoric:

‘It’s a nightmare. And you can’t wake up ... Alzheimer’s will strike 986 more Americans today. And tomorrow. We don’t know who will be in that group of victims. It could be someone you know. Someone in your family. Your closest friend. It could be you. We just don’t know. We know this: 986 more will be taken today, and every day, until we stop it!’

Taylor, 2008: 322 (Quoting advocacy material from the Greater Dallas Chapter of the Alzheimer’s Association)
One unintended consequence of these nightmarish, fear-inducing representations has been the imposition of stigma, whereby those diagnosed with dementia are presumed to have crossed a threshold into the incommunicable. We too readily ‘lean on’ these presumptions of incapacities and failings presented to us by overarching discourses, resulting in a ‘discrediting effect’ that may bear no fair relation to a person’s actual functioning, but brings disabling stigmas into effect (Goffman, 1963: 2-3; Mackenzie, 2006). The identity of the stigmatised person is thus, as Goffman (1963) famously put it, ‘spoiled’, insofar as a measured deviance from the norm marks it as an ongoing object of management. Particularly for those in early to moderate stages of dementia progression, forms of ‘malignant social psychology’ can be generated through the imposition of stigma and subsequent impacts on social engagement (Kitwood, 1990, 1997). It should be stressed that, in considering the contextual elements of the disease’s progression, the point I wish to emphasise here is certainly not to reduce the shifting relations born of dementia to a social construction. Rather, my focus here speaks to the quotidian but vitally affirming interpersonal labour of maintaining for another the sense of life as a propulsive, meaningful narrative. As neurological insight and the experiences of those living with dementia indicates, the materiality of the disease is such that those who live with dementia for long enough will likely reach a stage where relational ties between themselves and others have changed irrevocably. Yet, what may persist for a lengthy period prior to any final debilitation is a desire to be in the world, to be affirmed as a willing agent still capable of affective exchange. Maintaining these lines and potentials of relationality is thus a major part of the emotional labour in dementia care, a labour that tells us much about the necessity to accord recognition to the diversity of neurological modes of being.

Thoughtful and well-researched constructions of dementia in fictional texts can provide a much needed ‘epistemology of humility’ by taking seriously the interiority of subjects undergoing this transformation of being-in-the-world, rather than simply reducing them to their medico-legal condition (Post, 2001: 18). In this way explorative and experimental narratives can help ‘resuscitate the humanity’ of those living with dementia, and may even challenge hardened categories of the normal and the pathological by demonstrating the complexly entangled qualities of degeneration, ageing, and sociality (Herskovits, 1995). While important research has been done to bring the experiential dimension of neurological difference to the fore, the sheer diversity of experiences in living with a condition such as dementia is grossly under-represented in the broad cultural sphere, implicitly dispelled to the margins of the non-hypercognitive subject within neuroethical discourse. This, in part, contributes to the stigma and fear so often attached to neurological difference. To counter this paucity of perspective, the breadth and slow-burn approach of fictional works can vividly
achieve the deftly contextualised weaving of narrative with the gradual onset of a neurological condition, and may therefore play a crucial role in representing and opening alternate trajectories.

For this chapter, which explores the entanglement of selfhood, dementia, and narrative, it is necessary to firstly indicate the limitations of popular media representations in order to best underscore the significance of the literary fiction texts that will inform the rest of the analysis. These texts will be addressed through: their attempts towards mimetic depictions of the interiority of dementia; the importance they accord to the narrative persistence of their protagonists; these characters’ willing urgency; the impact of collapsing temporalities; the ebb and flow of psychosomatic and affective experience; and the sense such novels give of how we might expand our conceptions of the neurological subject towards more pluralist modes of being.

The biomedical and experiential status of dementia

In providing some historical context it should be noted that any formally recorded social impact of Alzheimer’s disease and other dementias prior to the 1970s was relatively scarce, primarily due to the condition and its prevalence being poorly understood (Beach, 1987; Fox, 1989; Adelman and Verbrugge, 2000). Too easily equated with ‘normal’ ageing, diagnoses of dementia were rarely applied with confidence, let alone supplemented with provisions of support (Fox, 1989; Ming and Fernandez, 2001). Dementia as a biomedical category was effectively stuck in a ‘no man’s land’ in which it was ‘neither neurological nor psychiatric disorder’ (Lock, 2013: 35). While some progress has been made in diagnostic methods since then, clinical breakthroughs are not forthcoming, with current pharmaceutical treatments serving largely as palliative treatments or mild stalling agents if administered in the early stages of disease progression (Birks, 2012).

While current efforts towards pharmacological interventions are ostensibly welcome developments, decades of research have perhaps been successful only in lowering our expectations of thoroughly understanding the degenerating brain, and most scientists and clinicians know better than to promise cures or efficacious preventative measures in the near future (Lock, 2013; George and Whitehouse, 2008; Diamond, 2010). This, however, has not stopped the proliferation of wishful and overblown rhetoric that often emerges when scientific
endeavours align themselves with the machinations of the formal political sphere and popular media hype cycles. One recent example of this is the ‘US National Plan to Address Alzheimer’s Disease’, which aims to ‘Prevent and Effectively Treat Alzheimer’s Disease by 2025’ (Office of the Assistant Secretary for Planning and Evaluation, 2014). Such an ambitious target was met with public praise, but the reality is that hopes of more effective drugs are dispelled with dispiriting regularity, with over twenty promising compounds failing Phase III trials since 2002 (Diamond, 2010).

But while biomedical researchers continue to make incremental progress, social scientists have a role to play in providing a more attentive and nuanced sense of what it is actually like to live with dementia (Lyman, 2000; Beard, 2004; O’Connor et al. 2007; Kitwood, 1997). Certainly, a great deal of progress has been made in the past few decades in according due respect and improving the quality of life of those with dementia. Following the construction of dementia as a formal medical category, advancements were made in bioethical issues around informed consent and end of life care (eg. tube-feeding, DNRs, and other advance directives), and bioethical debate continues on the legitimacy and implementation of these directives (DeGrazia, 1999). These, of course, are all very important issues in minimising unnecessary suffering, but they may also amount to a reduction of the subjectivity of the sufferer to a pathological form of selfhood, and this may distract from more quotidian realities relevant to quality of life (O’Neill, 1997). In this respect, the shifting emphasis among many scholars from ‘end of’ to ‘life with’ dementia is a welcome change, for current standard biomedical models have little to offer to those who bear witness to a radical change in their very ontology:

‘No theory of medicine can explain what is happening to me. Every few months I sense that another piece of me is missing. My life, my self, are falling apart. I can only think half thoughts now. Someday I may wake up and not think at all, not know who I am. Most people expect to die someday, but whoever expected to lose their self first.’

Cohen-Mansfield, Golander and Arnheim, 2000: 382

There is no doubt that bearing a form of partial witness to your own ontological oblivion is a harrowing prospect. But the point is not that we should pity those who find themselves countenancing such devastating futures, for sympathy by itself ‘misevaluates what is actually important in human life, placing material suffering over spiritual independence’, and so counter-productively diminishes the one who is suffering (Berger, 2014: 175). A popular focus on the terminal stages of dementia may unhelpfully skew representations of those living with the condition, constrictively framing them within schemas of grossly reduced autonomy, and
reducing the voice of subjects who are already presupposed to require others to speak for them and act on their behalf (Van Gorp and Vercruyssse, 2012; Cotrell and Schulz, 1993).

The threat of the production of social stigmas associated with dementia is abundant. Subjects with dementia are feared, found to be irritating, and seen as persons to be avoided (Blay and Peluso, 2009: 167). Such views are both generated and reflected by popular media, which is, here as elsewhere, ‘a powerful transmitter of stereotypes’ (Kirkman, 2006: 74). On this, Herskovits (1995: 152-3) wearily observes that:

‘The lay media are replete with clichéd metaphors and representations in which Alzheimer’s is characteristically drawn in colorfully dramatic terms that paint vividly disturbing images. Words used to describe AD include killer, thief, terrifying, ruinous, living death, never-ending funeral, and private hell of devastation and destruction. People with Alzheimer’s are outlandish, bizarre, deranged and wacky, shells of their former selves.’

For its part, the popular media skews towards a ‘ghoulish interest with extremities to which dementia can lead’, producing accounts that, while ostensibly truthful, are often not fairly representative of the wide spectrum of life with dementia (Zeillig, 2014: 261, see also Clarke, 2006). These popular narratives of dread and hopelessness are ironic outcomes of rhetoric that aims for hard veracity but instead generates either hollow affectations or sensationalist horror, thus inadvertently edging the supposed source of its concern further across the threshold from subject to object, person to patient (Zeillig, 2014: 262). Unsurprisingly, then, there is commonly a social distance imposed upon the subject with dementia, one that extends as symptoms become more apparent (Werner, 2005). The lamentable outcome, then, is that dementia ‘seems to act as a very powerful solvent on many kinds of social ties.’ (Taylor, 2008: 319). There is, as Beard, Knauss and Moyer (2009) observe in a novel study co-written with a person living with Alzheimer’s, a frustratingly dominant ‘discourse of loss’ that invariably presents dementia in damming, bleak, and fatalistic ways. Too often ‘horror seems to be the default genre’ in representing dementia to a wide audience (Taylor, 2008: 321).

Goffman’s (1963) now classic descriptions of stigma through the performative labelling of abnormal subjects remains insightful here, even if he may not have directly considered the role that popular media might come to play in reducing identity to narrowly ascribed medical categories. The risk here is of creating a ‘disease double’, where those with dementia suffer not only from the disease-in-itself – however that may variously manifest – but also ‘the layers of stigma, rejection, fear, and exclusion that attach to particularly dreaded diseases’ (Scheper-Hughes and Lock, 1986: 137-8, cited in Herskovits, 1995: 152). Yet, as I have suggested, to
place all the emphasis on the social construction of stigma would be to fail to attend to the
material reality of the transformation in selfhood that ‘dementia’ names, along with the
persistence of the will to remain narratively tethered to the world.

Let me also be clear in stating that this discussion does not seek to romanticise
neurodegenerative disease, for forms of dementia constitute a debilitating condition that can
be a terrifying and devastating experience, one that may result in tortuously long periods of
suffering before death, and which can impose dreadful burdens on carers and loved ones.
Persons with dementia commonly suffer a form of ‘social death’, while their primary carers
may be wracked with a wrenching ambivalence, resulting in ‘compassion fatigue’ and even, in
many cases, homicidal and/or suicidal ideation (Sweeting and Gilhooly, 1997; Day and
Anderson, 2011; O’Dwyer et al. 2013; O’Dwyer et al. 2015; Werner, Goldstein and Buchbinder,
2010). Over time the indexical self of the person with dementia will gradually slip into the
ether as the subject loses the very referents of themselves as a unified agent (Sabat and Harre,
1992). Similarly, what might be described as the ‘quotidian self’ will steadily recede as once
seemingly innate cycles of time, habit, and memory become unstuck (eg. the common
tendency of ‘sundowning’) (Volicer et al. 2001). The once autonomous socio-political sense of
agency that makes up a critically constitutive part of the modern subject will also be lost, with
the rights and obligations of citizenry and responsibility for oneself either struck out or
accorded to another.

For now, the popular production of melancholy and pity without the offer of genuine
consolation, empathy, and alleviation of suffering risks becoming oddly exploitative, reducing
those with dementia to objects of pity through which we contemplate the fine margins of life.
In this light, perhaps we should reconsider our current overwhelming focus in the public
sphere on the very latterly stages of neurodegenerative disease, as these repeated
perspectives and their accompanying behaviours may actually hasten the unravelling of
selfhood in self-fulfilling ways (Kitwood, 1990, 1997; Lyman 1988). Until the mid-1970s it
seemed ‘scarcely thinkable’ to place neurodegenerative disease within the ambit of sociology,
social psychology, and related fields (Kitwood, 1993: 541). The notable absence of reflections
on selfhood and personhood within biomedical frameworks has primarily been the result of a
narrowly rigorous approach:

‘... the psychiatry of old age has had an overwhelming tendency to make the brain
rather than the personhood of the dementia sufferer its central focus of attention; the
inquiry has been technical rather than personal.’

Kitwood and Bredin, 1992: 270
The neurosciences’ intensive gaze into the brain – at the expense of a wealth of other contextualising nuances – has been a running theme throughout this thesis. It appears that considerations of personhood and subjectivity may have proven too nebulous as concepts and categories, too unwieldy to be housed under rationalised metrics of wellbeing, and thus have been avoided in laboratory and clinical discourses or rendered in strictly ‘hard’, cognitive, functionalist terms. The result is that those living with dementia have been ‘largely invisible’ in the academic literature, with little attention accorded to their subjective experience and views (Lyman, 1989: 603, see also Herskovits, 1995). From the early 1980s this blinkered perspective was, slowly, beginning to be corrected. This progress was aided by developments in theories of dementia care, which brought the person with dementia back to the forefront (Gubrium, 1986, 1987; Kitwood and Bredin 1992, 1994; Kitwood, 1997). Further changes emerged through guidance and discussion of: the difficulties in interpreting cues from those with severe symptoms (Allender and Kaszniak, 1989); the importance of ‘active listening’ to better understand difficult to interpret intentions (Gubrium, 1986); and empirical work that demonstrated the importance of maintaining narrative continuity (Usita, Hyman and Herman, 1998).

This is a welcome shift, if only because there is clearly not an absolute correlation between cognitive decline and overall wellbeing. Some subjects with dementia in the very latterly stages will ‘still appear to be faring well as persons’, while others in earlier stages may be wracked with anxiety, depression, and apathy which may be caused and/or compounded by loss of social engagement, altogether hastening a loss of selfhood in ways that can potentially be alleviated (Kitwood and Bredin, 1992: 280). Certain routine habits, patterns of phrases, and ritualistic exchanges allow some persons with dementia to pass as fully functioning and autonomous, even though there is often a mismatch between the action performed and the social milieu in which it occurs (Smith and Fontana, 1989). Thus, while the overall concert of interaction may be lost, many comforting rhythms and routines may linger and these practices, when reflected back by others in their performances, can provide a source of ongoing affirmation of self even amidst the steady creep of neurodegeneration. It is therefore worth reconsidering the problem of the self ‘in a way that cuts across the dimension of cognitive impairment’ (Kitwood and Bredin, 1992: 280).

One means by which we might reframe dementia is by including the voice of the person living with dementia wherever possible, as firsthand accounts remain relatively rare (Cottrell and Schulz, 1993; Beard, 2004b; Clarke, 2006). Subjects living with dementia have noted the belittling and disheartening sense of becoming ‘invisible’, ‘dismissed’, ‘smothered’ and left to linger in relative solitude (Sterin, 2002). Through rationalised processes of caregiving under
tight resource constraints, persons living with dementia may be cleaved from patterns, routines, locales, and rhythms of domesticity and social life, which can exacerbate the loss of narrative grounding and emotional engagement (Schreiner, Yamamoto and Shiotani, 2005). Alternatively, including the views of those in the early stages of dementia allows them to better articulate their preferences for the future, thus potentially alleviating some dilemmas of end-of-life care. This pragmatic adjustment to autonomy provides a potential source of comfort, for persons with dementia can now exercise a form of agency that extends their temporal being, creating a greater sense of control over their own narrative (Cottrell and Schulz, 1993).

Through such adjustments in care practices the problem of the ‘missing person’ living with dementia has improved somewhat of late (Clarke, 2006). In part this shift has also been aided and enacted through the emergence of popular biographies and autobiographies of life with dementia, many of which argue persuasively for both pragmatic and imaginative conceptions that afford more autonomy to the subject. Academic papers have begun featuring authors living with dementia, lamenting the often depersonalising quality of current participation in research, where subjects and their habits, experiences and preferences are reduced to neatly discrete but meaning-bereft packets of data (Beard, Knauss, and Moyer, 2009; Knauss & Moyer, 2006; Tanner, 2012). In addition, I will argue, works of thoroughly researched and sensitively rendered fiction can also contribute to productive reconceptualising of neurological difference.

Examining this specific genre of the ‘neuronovel’ – discussed in more detail in the introductory chapter of this thesis – Sarah Birge (2012: 93) suggests that ‘neurofiction’s ability to create and explore selfhood, rather than merely “brainhood”, positions the genre to fulfil an important role in studies of consciousness’. Birge (2012: 93) further notes:

‘Neurofiction, which frequently features central characters with cognitive disabilities, provides complex portrayals of the intersection between brains and culture, serving to elucidate ways in which the interactions of biological structures and processes, physical environments, and social interactions (including institutions such as the legal and health-care systems) operate to construct individual and social understandings of cognitive disability. Neurofiction articulates and influences the webs of meaning that contribute to the cultural creation and experience of cognition and consciousness.’

In this way such works may contribute to a better understanding of how we may labour to maintain narratives capable of re-aligning the volitions of those living with dementia with their
capacities. Insofar as we are custodians of each other’s selfhood in almost any context of life, this is especially the case for those living with dementia, who will likely be more dependent upon another in maintaining an accord between cognition, emotion, body, environment, and temporality (King, 2009: 297). Within the current ‘therapeutic void’ (George and Whitehouse, 2008: 590) of ineffective clinical and pharmaceutical interventions our interpersonal efforts to alleviate these commonly occurring discords of self and world become ever more important. In turn, this shift holds promise for a productive reconfiguring of selfhood, signalling a move away from the tyranny of the ‘hypercognitive’ island of self and its ‘productive’ capacities, to a subjectivity framed in more extensive and expressive ways:

‘We may need to stop looking only to individuals as the bearers of “selfhood,” and start looking more at how “selfhood” is distributed among networks, sustained by supportive environments, emergent within practices of care.’

Taylor, 2008: 326

Through this reorientation we might also dismantle some prevailing narrow spectrosopes of ‘wellbeing’ that insist on the intensive gaze into an unrealistically unified, rational subject. Therefore, in addition to rethinking the subjectivity of those living with dementia, it is possible that we might breathe new vitality into our approach to the neurological subject more generally. As Kitwood (1989: 13) suggests:

‘... one of the crucial factors is the extent to which the ’experiential self has or has not been well-developed: that is, an integrated centre, grounded in feeling and emotion. For this can remain when the ’adapted self’ (derived from role-performance and meeting others expectations) declines – as is very often the case for people in later life.’

Thus the pathology of neurofibrillary plaques and tangles and performance on a battery of cognitive assessments should not be wholly determinative of our conceptions of the neurodegenerating subject. Such narrow conceptions and the coolly objective clinical gaze that determines them may only result in a needless denuding of the self, whereby otherwise good-faith attempts at understanding the manifestation of a condition inadvertently deprive other ways of maintaining and affirming being. As Vittoria (1998: 104-5) notes, the preservation of the self undergoing cognitive decline requires ‘communicative care’, an emotional labour not ‘done to’ the person, but ‘done with’. Arlie Russel Hochschild’s (2012) highly influential work on the various forms of emotional labour that sustain selfhood and social life in diverse contexts remains pertinent here, and the social sciences can still learn
much from the necessity and nuance of emotional labour in the case of dementia. One carer of those affected with dementia pithily described this labour as the willingness to ‘go in their world with them’ (Vittoria, 1998: 108), and the degree of adaptation required for the journey says much about the existence – and indeed the fragile contingency – of typical frames of selfhood. To pursue such a labour of mutual world-building is a demanding undertaking for the committed carer, for within the mind of the person with dementia temporalities can dramatically flatten and tangle:

‘They’re back forty or fifty years in their mind. Because everybody’s mother and father is living. Everybody’s always going to see Mom and Dad. I know they go back to their hometown. They go back to the farm and on and on and on.’


Narratives and volitions thus take on a fluidity of space and temporality to which carers – when time and other resources allow – attempt to accord themselves. This is not to ‘indulge’ or ‘humour’ the person with dementia, but rather to enter into a performative display that affirms the subject’s narrative worldview to whatever extent is practically possible. A common example of this is evident in the persistence of habits of an occupational, vocational, or similar role-based nature. Residents may slip into the personas of their former day-to-day public selves, for example once managerial types may find comforting rhythms in professionally courteous exchanges or studious bookkeeping, while those formerly in caring professions (homemakers, nurses) will in turn dedicate themselves to upkeep, cleanliness, and concern for the welfare of others (Vittoria, 1998: 112-13). These performative exchanges can prove to be effective strategies in retaining a sense of self-worth and vocation through labour for others, while also likely being comforting in their familiarity, injecting a knowing rhythm into exchanges that may otherwise be overwhelming and bewildering.

Fictional explorations of dementia are one means by which we may get closer to the interiority and temporality of the quotidian rhythms of living with dementia, but may also serve as a way of imaginatively ‘anticipating’ a highly uncertain future:

‘But when I consider my own future in a family predisposed to Alzheimer’s, I’m left with urgent questions that only fiction can answer: What do those late stages feel like? What is it like to lose oneself and still live? Could there be some essential kernel of selfhood that survives until the end? Mid- to late-stage sufferers, lost in their aphasia, can’t explain it to us.’

Block, 2014 (my emphasis)
King (2009: 297) similarly observes that ‘only imaginative reconstruction can hope to explore the experience of memory loss beyond the point when the very attempt to write fails’. Admittedly, there is inevitably a degree of speculative thought that comes with such works, but I would suggest that cautious, thoughtful speculations that seek to be productively open to contestation and debate are of greater use to us than the hasty assumptions and affixing of the ideal neurological subject that I have critiqued throughout this thesis.

The fictional characters living with dementia that I discuss below are presented as precariously teetering in a ‘liminal state’, neither as capable as they once were, nor past a point where forced reductions in autonomy will not harm self-esteem (Lock, 2014: 91). The elusive subjectivities of those living with dementia are the central focus of these novels, explored with a depth and sensitivity that allows for empathy, rather than just sympathy. In this way such narratives can be both consoling and gently instructive. Such works have the potential to open up alternative ways of seeing the ‘demented’, and offer ways of getting out of commonly invoked but often unproductive frames of dementia as a forthcoming ‘tsunami’, a ‘collective terror’, and ‘nothing more than a fatal prognosis’ (Van Gorp and Vercruysse, 2012: 1278). At its best, such fiction may also tell us much about the ‘hard’ emerging norms of subjectivity in the era of the neurosciences, and the increasing labours that must be done to uphold such often Sisyphean tasks of averting neurodegeneration; with such toiling in vain rendered strikingly visible at the bifurcations in the narrative of selfhood that dementia brings so dramatically to the fore.

**Tropes of dementia in fictional works**

Accounts of the day-to-day realities of dementia have come largely from carers and occasionally from neurologists, with several biographical works achieving widespread interest. Though welcome developments, these works ‘inevitably put the subjectivity of the carer at the centre, rather than that of the person experiencing dementia’ (King, 2009: 297). Curiously, some of the first examples striving to correct this imbalance were actually by those caring for loved ones with dementia, who would look to ‘translate’ into poetry or prose what communicative urges they believed resided within but were bodily trapped in those for whom they cared (Gubrium 1988; Herskovits, 1995). Other fictional works have sought to gently instruct and console family members of those affected by dementia, particularly children, who
frequently serve as primary or secondary carers (Manthorpe, 2005). A recent example of this fictional literature developed for children is The Dementia Diaries (Snyman, 2013), a work which was the outcome of a pioneering project by the Social Innovation Lab of Kent (SILK). Through their collaborative ‘human-centred methodology’ SILK worked with children who had close family members living with dementia to produce a lively, appealing, but also appropriately frank account of common experiences of living with a dementia sufferer. These forms of thoughtful, participatory collaboration can prove very effective in undoing stigmas and fostering communities better equipped to cope with neurological difference.

Sadly though, not all creative works presenting neurodegenerative disease adhere to such a mandate of sensitivity and authenticity. Popular films can be especially susceptible to exploiting dementia as a banal trope or convenient plot device (Segers, 2007). Block (2014) also observes a similar trend in the incorporation of dementia in some works of literary fiction:

‘Nearly every novel I’ve read that attempts to depict the internal experience of Alzheimer’s also attempts to fit the disease’s retrogenic symptoms to one sort of sentimental trope: a reckoning with a repressed or unacknowledged truth that must come before acceptance is possible.’

Such practices introduce an unnecessarily moralised quality to depictions of terminal illness, where suffering is visited upon a person as an impetus for them to correct the mistakes of the past before they shuffle off this mortal coil. These overly convenient tropes and inane sentimentalising of dementia may prove counter-productive in improving wider understanding of neurodegenerative disease.

Some fictional works, however, feature characters living with dementia in ways that are plausibly woven into wider contexts. Zeilig (2014: 262-3) cites High Hopes (1988) and A Separation (2011) as two fictional films that highlight the interweaving of the materiality of body/brain experience with social context, through an array of neurodiverse characters and plotting attuned to the trials of neuropathological ascriptions and experiences. High Hopes is set during the Thatcher years, with the treatment of a woman with dementia paralleling the cold brutishness of social and economic policy at the time. Please note, however, that dementia is not being cheaply troped in High Hopes as a metaphorical means of representing wider societal issues. Rather, the film describes the dialectical and mutually reinforcing circumstances in depicting the micro and macro effects of fostering a culture of coldly disinterested sentiment. Put another way, there are broad but often unintended consequences to rationalisation processes in which we are called to realise specific value-bearing capacities as individuals. Though such ideological frameworks are intended to raise
overall wellbeing they may also inadvertently cultivate dispositions within subjects that can prove detrimental to the quality of life for those who do not conform to the ideal types of such frameworks of citizenship. A Separation is similarly instructive in realistically portraying the familial tension, anguish, and difficult compromises that can arise for families who care for loved ones with dementia. Yet while popular representations of dementia are generally improving, Cohen-Shalev and Marcus (2012) argue that there is still a dearth of films which delve into the subjective experience of characters undergoing cognitive decline. This is somewhat understandable, given that a dilemma arises in considering how to depict the experience of dementia on film – a medium where the depiction of internal states can be difficult to do well – without embracing experimental methods that may attract the ire of viewers seeking generally ‘realistic’ portrayals.

Novels, however, can more easily access and present interiority, and may capture subjective states and intentionality with a depth and complexity that other media cannot readily equal (Zunshine, 2006). Moreover, the slow, nuanced unravelling of a novel allows for a form of slow-burn advocacy, for readers can bear witness to protagonists at their most vivacious selves, pre-dementia, and then travel with these characters as they are steadily ontologically reconfigured. Given that we generally enter into a novel by making what Paul Ricoeur described as a ‘wager’ (1967: 355) – ie. we actively seek to enter into a form of alterity and stretching of empathic capacities – then fictional works hold great potential in opening up new avenues for how we might approach neurological difference.

Point-of-view and the figuration of difference

Part of this chapter’s contribution to efforts of neurodiversity – and the accompanying rejection of the ‘hypercognitive’ subject – is through outlining the importance of point-of-view as a means by which to explore the subjectivity of dementia. The novels to be discussed below all adopt different approaches to point-of-view, with each approach making a worthwhile contribution to reframing common perceptions of the ‘demented’ subject. For the reader’s ease of engaging with the following discussion, a brief synopsis is provided of each the novels that feature prominently below.
**Still Alice – Lisa Genova (2009)**

Alice is a 50 year-old professor of linguistics at Harvard, married to a fellow academic, and mother of three children. Alice is suffering from recurrent failings of memory, and after diagnostic testing is confirmed to have a rare form of early onset Alzheimer’s. Alice informs her family of her condition but attempts to conceal her symptoms from her Harvard colleagues. Soon, however, damning student evaluations directly related to her cognitive decline compel Alice to ‘confess’ and relinquish her professional identity. Not wishing to be reduced to an existence she considers intolerable, Alice develops a self-administered exam – the ‘Butterfly’ test – to be taken daily, which serves for her as a measure of whether life is still worth living. In the event that Alice should fail the test, she has left clear, simple instructions in a computer file to enable her future, less capable, self to commit suicide. As the disease advances, Alice tries to squeeze the most from life that she can, but must also contend with her husband’s unyielding career ambitions and her children’s differing opinions of what is best for her. In these exchanges the novel demonstrates in various ways how Alice risks becoming a subject/person slowly and irrevocably rendered object/patient. *Still Alice* is the most straightforward of the fictional works featured here, primarily striving to be a vehicle of gentle but unsparingly pragmatic instruction and advocacy on the difficulties of living with dementia, along with dismantling common misconceptions. The author, Lisa Genova, is a Harvard-trained neuroscientist.

**Elizabeth is Missing – Emma Healey (2014)**

Maud is an elderly yet still sprightly woman living with dementia, cared for by her weary but patient daughter, Helen, and tactless part-time carer, Carla. For the most part though Maud is left alone to while away the hours, watching daytime television with sardonic puzzlement and following (and equal parts resisting) instructions left around the house in the form of handwritten notes. But something is troubling Maud: her friend Elizabeth seems to be missing, and Maud’s own handwritten notes remind her of this repeatedly. However, her concerns are dismissed by others, so Maud sets out to investigate, gamely attempting to compensate for her lapses of memory through diligent note-taking. As Maud searches for clues, the narrative is intercut with her memories surrounding the unsolved disappearance of her older sister Sukey, who went missing in suspicious circumstances when they were young. These haunting reveries are often triggered by sensory stimuli in the present, bubbling up announced with such vividness that Maud often finds herself caught unawares by her
accompanying behaviour. As the novel progresses these two mysteries become further entwined, generating an urgency and escalating tension heightened further by Maud’s steadily declining capacities.

**We Are Not Ourselves – Matthew Thomas (2014)**

This novel is told mainly through the perspective of Eileen, an Irish-American woman seeking the ‘American Dream’ after a troubled childhood characterised by alcoholism and familial conflict. During the cultural turbulence of the 1960s Eileen meets Ed, a young scientist specialising in psychopharmacology, and they soon wed. Reserved, but tender in his own absent-minded professor-type way, Ed represents for Eileen the promise of life soon to be fulfilled. After some time though Ed begins to develop strange habits, accompanied by an inwardness that seems to border on selfish obtuseness towards Eileen, who at one point fears that she has ‘interrupted him in a reflection on something monstrous’ (Thomas, 2014: 122). It appears that Ed can sense a cruel augur of what is to come. Eileen, however, is clouded by her fervent desire to realise their upward class mobility and status potential, and so neglects to recognise that Ed is suffering from early-onset Alzheimer’s disease. Eventually Ed is diagnosed and Eileen must contend with his cognitive decline as they struggle to manage their affairs. The point of view in this novel also shifts for brief periods to Eileen and Ed’s only child, Connell, a young man going through his formative years just as his father is steadily rendered formless.

**The Night Guest – Fiona McFarlane (2013)**

Ruth is a 75 year-old woman living by herself in a secluded coastal setting. Having grown up in Fiji and spending most of her adult life in Sydney, Ruth and her husband decide to retire to a more peaceful locale. However, soon after this move Ruth’s husband dies of a heart attack, and Ruth finds herself very much alone as dementia begins to take hold. By her own assessment, life for Ruth has just seemed to stop (McFarlane: 2013, 107). One evening Ruth’s ‘blurry brain’ (McFarlane: 2013: 1) senses the presence of a tiger in her home. Ruth does not see the tiger, and well knows that the tiger cannot possibly be ‘real’, yet the veracity of the tiger is in all other ways undeniable for Ruth, embodying something of ‘extravagant consequence’ she finds enlivening (4). The very next morning a woman, Frida, arrives at the house, announcing herself as Ruth’s new carer, assigned by the government. Ruth soon finds herself equally distrustful and dependent upon Frida, whose own presence is very much like a tiger’s: playful, but also powerful, unpredictable, and sometimes fearsome. The two
unannounced arrivals trigger a stalking sense of foreboding, instilling a deeply felt urgency within Ruth to realise unfulfilled but hazily defined desires before her remaining autonomy is entirely foreclosed. As Ruth’s dementia worsens her ability to assert herself over the domineering Frida wanes. Consequently, Ruth finds herself in a claustrophobic, threatening setting, seeking some form of reconciliation with the world before her volitional unity of being is eclipsed.

The point of view chosen in these novels is notable, for in each instance they reflect a shift towards according a greater voice to those living with dementia. Emma Healey is particularly ambitious in adopting a first-person perspective of a character with dementia throughout the entirety of Elizabeth is Missing. Lisa Genova and Fiona McFarlane adopt a slightly less restrictive third-person limited view, with interiority granted only to the protagonists living with dementia, Alice and Ruth respectively. Matthew Thomas’ We Are Not Ourselves is an exception here, for this novel is told solely through the perspectives of Eileen and Connell, who bear intimate witness to Ed’s decline. Ed’s interior life therefore remains somewhat of a mystery, but is delicately revealed through evident changes in disposition as his condition worsens.

This recent turn towards greater recognition of the subjective experience of dementia – both in fiction and non-fiction – raises productive questions around the aspiration to mimetic representation, and of how we might faithfully express living with conditions that are so often characterised by their inexpressibility. It is here we might briefly consider the work of Paul Ricoeur, the philosopher and literary theorist known particularly for his fruitful combination of phenomenology and hermeneutics (see Ricoeur, 1967, 1981, 1984, 1992, 2005). Ricoeur’s philosophy is, at its core, relational, concerning itself with how the capabilities, vulnerabilities, and perceptions of self are shaped through our extensions and interpretations into and of the world. The Ricoeurian ideal of literature is to extend the interpretative circle, and to build hermeneutic bridges between subjects through narratives informed by an ethic of reciprocity and recognition. This, for Ricoeur (1967: 350), is a ‘restorative’ criticism, capable of resurrecting texts by unfixing them from their set contexts, opening them up to reincorporation into new settings, and thereby potentially ‘restoring’ subjects otherwise dismissed or maligned (see also Sedgwick, 2003, 123-52 on ‘reparative’ reading).

Ricoeur is also invested in the relations between narrative, time, and the realisation of ethical potentials within these dialectical entanglements. Ricouer (1992) affirms the sociological truism that our identity is a function of our engagements with others, with the implication
that, while we can doggedly attempt to craft our being, ultimately others are the ‘custodians’ of our selfhood, and we of theirs (especially in the case of dementia, see Hepworth, 2000; King, 2009; Taylor, 2008). The crucial measure of ethical being may therefore not be those virtues gained by way of personal asceticism or other arbitrary measures, but rather the willed extensions of a self seeking communion with others, of reconfiguring oneself in service of another. This ethical labour takes on greater urgency where dementia is concerned, for we must seek to join and maintain the narrative of another in ways that require both creativity and a measure of vulnerability in order to ‘get into the world’ of those for whom language and high-cognitive functioning are no longer primary (Vittoria, 1998).

It is here that I should note what may appear to be a contradiction in these fictional explorations of dementia, captured by a reviewer of *Elizabeth is Missing*. This reviewer was particularly incredulous when it came to the point-of-view chosen, suggesting that the interiority presented becomes steadily more implausible as the cognitive capacities of the protagonist declines, yet we, the reader, are presumed to consider them somehow ‘secretly articulate’ (Gillies, 2014). There is some bite to this critique, for the character of Maud maintains a richly articulate interiority despite her waning capacities, as do Alice and Ruth in their respective works. But to state that this representation is implausible would appear to needlessly reduce point-of-view in fiction to a superficial function of depicting only the semantic and clearly denotive ‘internal monologue’ of characters, which in itself is an implausible construction of our interiority. Part of the very purpose of various techniques of narrative voice is to make communicable that which may initially seem inaccessible and inexpressible, for one of the functions of language is clearly as a hermeneutical bridge between different substantiations of being. Entering into any narrative requires this willing suspension, one where ‘we must understand in order to believe, but we must believe in order to understand’ (Ricoeur, 1967: 351), engaging in a dialectic of ‘exposing ourselves to the text and receiving from it an enlarged self’ (1991: 88, cited in Simms, 2003: 131). This, for Ricoeur, is a ‘wager’ we are asked to make, that we must in good faith give the gift of our credulity, willing ourselves into a space where hermeneutic bridges may work upon us, and so labouring together to liberate what might first seem opaque and impenetrable. Admittedly some aspects of qualia will always remain hidden, and the novels featured are necessarily speculative in their attempts at a reparative hermeneutics of life with dementia. Nevertheless, Ricoeur construes mimesis not simply as an attempt at reproducing the world-as-is, but rather in looking to elevate and illuminate the meaning behind action higher up in the hermeneutic circle, rendering a particular phenomenological state accessible in some form to a greater number of others (Simms, 2003: 61-85).
Ricoeur (1984: 54-76) proposed a threefold model of how mimesis may be realised, aspects of which take on curious nuances when applied to novels of dementia. Firstly, we the reader must be suitably *prefigured* by being presented with some form of wilful agent. This agent need not necessarily be ‘high functioning’, but we must be sufficiently clued into their capabilities so that we may adapt our practical understanding of narrative drive to the agent with whom we are asked to share some degree of interiority. Thus we are introduced to intellectually driven, fiercely independent protagonists such as the academics Alice and Ed, before being asked to continually readjust our figurations of them as we bear ongoing witness to their decline. For *Elizabeth is Missing* and *The Night Guest* we are also expected to recognise their respective twists on genre – broadly that of mystery and psychological thriller respectively – and align them with the lived experience of Maud and Ruth’s cognitive disorders. So while the reader will soon be aware that ‘Elizabeth’ is not actually ‘missing’ this in no way diminishes the narrative as some abuse of the mystery genre, for we recognise that the actual primary aim of using this template is to explore a form of subjectivity in new ways. Similarly, while *The Night Guest*, with its fugue-state fantastical qualities, may set itself up as yet another entry into the psychological and claustrophobic thriller canon, we quickly understand that such titillation is certainly not McFarlane’s main objective. Ruth knows the tiger is not real, as do we, but that does not preclude the phenomenological reality that Ruth is witnessing the tiger as some virtualisation of portent that is otherwise inexpressible. We are asked only to accept that the internal state of someone with dementia could plausibly manifest such a spectral being.27

We must next contemplate Ricoeurian *configurations*: the drive, the urgency, and the means by which the protagonist is compelled towards action. What lines of possibility are open to them? For Alice, this configuration is especially noteworthy, for we are acutely aware of her preferences from the time she develops the ‘butterfly’ test. It is Alice who will determine the terms of her forthcoming metamorphosis. As her condition worsens, though, the reader becomes the sole holder of Alice’s ultimate intentions, the gravity of which gradually slips from Alice herself, even while she diligently completes her test every morning. Alice steadily becomes ontologically reconfigured, resulting in a doubling of her drives: the end-of-life wishes of the highly capable, proud ‘Alice’, against those of the later ‘Alice’, who functions in ever-smaller pockets of temporal coherence, but still seeks to persist and be affirmed through connection with her family. Similarly, for Maud and Ruth, the configuration to action requires the reader accepting the urgency of the mysteries they feel compelled to solve, respectively

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27 Hallucinations of this kind are a fairly common experience of those with living with neurodegenerative diseases that have progressed to a moderate or severe stage (Holroyd and Sheldon-Keller, 1995; Sanchez-Ramos, Ortoll and Paulson, 1996).
‘Where is Elizabeth?’ and ‘What does the tiger want from me?’, along with more elusive drives for reconciliation with the world.

Lastly, Ricoeur suggests that realising mimesis requires acts of refiguration. We, the reader, must find a way to accommodate what the text might afford us in our own lives and the lives of others, thus expanding the text’s hermeneutic reach. Our labour of suspension must persist in considering how the text may extend beyond itself, to instruct, inform, advocate, and stretch our empathetic capacities. If we cannot generate such refigurations, the utility of the fictional narrative is diminished, trapped within its bindings, and the means to effect change through it is lost. The following sections will explore the ways in which these novels of dementia achieve forms of mimesis through the delicate, variegated constructions of persistence, urgency, temporality, embodiment, and emotional overflows and residuals.

Cruel ironies

A common theme in many fictional works exploring dementia is a somewhat problematic skew towards depicting the neurodegeneration of persons who are highly intelligent, and who themselves labour and hold great interest in language and the cognitive sciences (see, for example, Franzen, 2001; Genova, 2009; LaPlante, 2011; McFarlane, 2013; Thomas, 2014). The not especially subtle implication here is that they have ‘more to lose’, and are thus more worthy of our empathy. Similarly, Segers (2007: 56) has suggested that in depictions of dementia in film the persons affected are very often members of the social and cultural elite. Certainly, Still Alice risks amplifying this skew, for its protagonist is a professor of linguistics at Harvard, and so is the very exemplar of the ‘hypercognitive’ subject, one whose economic and cultural value correlates to her intellectual capacities, which in turn are entwined with her sense of status and self-worth (O’Neill, 1997, Post, 2000). In the Still Alice film adaptation (2014), for example, Alice lists as one of her most proud achievements the publication of her textbook, along with her loving marriage and high-achieving children. Alice also bravely attempts to disguise her symptoms in order to continue working as an academic, but is ultimately undone when student evaluations of her teaching reflect her creeping debility. Hence these evaluations amount to simply another efficient, rationalised, and hypercognition-based metric of Alice’s unravelling. Admittedly, at times this deployment of cruel ironies can lack nuance, for example Alice’s first inkling of disquiet is in forgetting the word ‘lexicon’
during a lecture (Genova, 2009: 10-1). Despite this somewhat heavy-handed approach, Still Alice’s focus on neurodegeneration as it pertains to an intellectual career does helpfully demonstrate an important aspect to consider regarding dementia (especially of early onset forms), for failures of competence will almost invariably be displayed publicly at some stage, with all the damages to reputation and legacy that may ensue.

Likewise, Ed of We Are Not Ourselves is a lecturer in neuroanatomy and psychopharmacology, and – in another instance of cruel irony – is ruined by those same interior structures he tries to elucidate for his students. Like Alice, Ed’s most public embarrassment occurs when – despite his almighty resolve and quiet determination – he can no longer conceal his clearly worsening symptoms while delivering a lecture, catastrophically failing in this performative arena in ways that can never be rectified (Thomas, 2014: 155-60). This devastating scene marks the end of Ed’s vocation and status as an intellectual. Ed had once been headhunted by Big Pharma to work towards treatments for neurodegenerative disease, but opted for the far less lucrative vocation of teaching disadvantaged students, and so, in order to access drugs that may briefly slow his decline, Ed finds himself asking for support from those he previously spurned. Alice too must contend with finding herself subjected to the same diagnostic tests she once participated in as cognitively ‘normal’ control subject, coolly traced through examinations she knows the names and purposes of but now cannot successfully complete (Genova, 2009: 68, 126-142). Alice is thus in some sense ironically measured against her former ‘control’ self, undergoing measures of precise tracing but negligible (or worse) therapeutic benefit. Alice’s proactive response is to take control of these disciplinary processes of confession by assessing herself against the qualities she deems makes life worth living, a rationale achieved through the ‘butterfly’ test she self-administers.

A common trope in narratives of dementia is at least one diagnostic testing scene, whereupon the clinical gaze provides a finality that is inescapable. Incapacities are starkly revealed in the presence of the methodical clinician, who surveys with a grim matter-of-factness to confirm what may be already known, but secretly dreaded. The exchange often confirms a suspicion of internal discord that has likely been felt for a lengthy period. This sense of internal betrayal is particularly evident when Ed receives his diagnosis, with the socially inept physician informing Ed that he is superficially in good health, but that this matters little given the ‘bad news’. The tactless neurologist informs Ed and Eileen:

‘... the good news is, physically you’re as healthy as a horse. A great specimen... If he didn’t have Alzheimer’s, he’d probably live to ninety-five. Heart, lungs, kidney, circulation – all tip-top. But he’s got it.’
In the doctor’s shifting attention from Ed to Eileen, we can discern that, already, Ed is being gently edged across the threshold from person to patient. The diagnostic scenes in these fictional works are all remarkably similar, providing little vignettes of set processes conducted by more-or-less friendly and professional physicians. Yet an aloofness abounds in these interactions, if only because there is little consolation to be found aside from what comes with the authoritative confirmation of one’s ailment. An array of standardised tests are run, performance is duly recorded, and Maud’s doctor ‘writes and writes’ but to what end she does not know (Healey, 2014: 156). Yet one consequence of initial diagnostic tests for dementia, which are then often followed by regular data collection processes, is that – given that there is little clinicians can do to alleviate symptoms – patients are often stuck in a regime where they are tracked for purposes that are of no personal benefit to them, but instead are repeated both blunt and precise reminders of their ongoing decline (Lock, 2014: 85-93, 200-201; Vittoria, 1998: 117-8; Bender and Cheston, 1997: 513).

These processes that come into effect once the subject has crossed the threshold into negative difference can have severe knock-on effects in diminishing their sense of self. For Ed, once proud and independent to a fault, stoicism and inwardness become steadily transformed into alternating indifference, apathy, and outbursts of frustration directed at Eileen. But even Ed’s seeming obtuseness and callousness dissipates after some time into a resigned meekness and, following his diagnosis, Eileen is left with a stark realisation that ‘he would have to become something like a child to her’ (Thomas, 2014: 337). This process of bequeathed autonomy is often marked with the inescapably cold formality of bureaucratic due process:

‘She signed with a certain stoicism a form consenting to participate on his behalf, but it was the “Record of Choice of a Surrogate Decision Maker” form that nearly made her lose her composure, because it was the only one Ed had to sign himself, and he started his signature an inch above where he should have and angled it down and through a line in a way that made it look as if he was falling down as he did it.’

Thomas, 2014: 327

Alice, a once esteemed lecturer and author of a feted textbook, must also suffer the indignity of being designated ‘untrustworthy’ by her neurologist, and formally rendered dependent upon another:
“Okay. In the future, you’re going to have to bring a family member or someone else who sees you regularly in with you. You’re complaining about a problem with your memory; you may not be the most reliable source of what’s been going on.’

Genova, 2009: 55

Diagnostic forms also instruct Alice that “This should be filled out by an informant, NOT the patient” (Genova, 2009: 72). This marks the irrevocable crossing of a threshold. Designated others, informants who surveil Alice, will now record her comings and goings, her apparent motives and behaviours, and report back to clinical authorities. This new regime will henceforth determine what is best for her. This tendency towards cruel ironies, though perhaps somewhat trite, is instructive given that the authors seek to emphasise the radical transformations of being that may take place through dementia, and this is arguably easier to demonstrate with protagonists who are initially characterised by their ‘hypercognitive’ status. But what might somebody who is living with dementia do in order to reclaim their autonomy against surveilling ‘informants’?

**Asserting selfhood**

Those diagnosed with dementia will often find themselves working between two contrasting frames and tropes of representation. The first is that of being undone by an ‘invader’, while the second is the varying capacity to retain a ‘unity’ of self (Van Gorp and Vercruysse, 2012: 1276). The project of unity through narrative propulsion will be discussed later, but for now I will consider how the person with dementia finds themselves precariously wedged in attempting to assert their selfhood against the ‘invader’ that threatens to ruin them. This trope figures prominently in novels of dementia. Lisa Genova (2009: 1) – recall herself once a lab-based neuroscientist – opens *Still Alice* with this epigraph:

‘Even then, more than a year earlier, there were neurons in her head, not far from her ears, that were being strangled to death, too quietly for her to hear them. Some would argue that things were going so insidiously wrong that the neurons themselves initiated events that would lead to their own destruction. Whether it was molecular murder or cellular suicide, they were unable to warn her of what was happening before they died.’
Prominent neuroscientist Zaven Khachaturian (1997: 21) uses similarly evocative language in anthropomorphising Alzheimer’s as a condition that ‘quietly loots the brain, nerve cell by nerve cell, a burglar returning to the same house each night’. Such characterisations of insidious, internal betrayal are also commonly found in accounts of cancer and other grave illnesses (Murphy, 1987; Styron, 1990; Frank, 1995). As highlighted earlier, accounts of life with dementia often invoke metaphors of a thief, demon, or monster, a spectral presence upending a once peaceful existence. Related to this is the problem of visibility and stigma, where the sufferer is not just resisting cognitive decline but also assessments of permissible autonomy imposed by others.

Persons in early to moderate stages of dementia often find themselves stigmatised, socially isolated, and made ‘other’. This can occur for a number of reasons. Early to moderate-stage sufferers may find that they can no longer meet the individualised and precisely quantified performance expectations of their occupations, or that once enlivening interests and hobbies may become unsafe or impractical to continue, or that friends may keep their distance out of fear, impatience, or plain ignorance. This stigmatisation was a significant source of motivation for Lisa Genova in writing *Still Alice*:

‘I think the most common struggle I see people face, though, is the alienation and loneliness. Because this disease takes people out of their formerly fast-paced, personally fulfilling careers; because everyone else stays busy in their busy lives and people with this disease have to slow down; and because of the enormous stigma placed on having Alzheimer’s, people with early-stage Alzheimer’s find themselves extremely alone.’


Fittingly, then, Genova’s Alice expresses increasing frustration regarding the widespread perceptions of those with Alzheimer’s, knowing all too well how persons like her may be viewed:

‘She wished she had cancer instead. She’d trade Alzheimer’s for cancer in a heartbeat... while a bald head and a looped ribbon were seen as badges of courage and hope, her reluctant vocabulary and vanishing memories advertised mental instability and impending insanity. Those with cancer could expect to be supported by their community. Alice expected to be outcast. Even the well-intentioned and educated tended to keep a fearful distance from the mentally ill. She didn’t want to become someone people avoided and feared.’
Recent advocacy efforts directed towards reducing stigma echo this sentiment, although certainly not in these stark terms. This provocative directness is one of the chief benefits of fiction as an exercise in empathy. Of course neither I nor Lisa Genova wish to make judgments as to what forms of terminal illness result in greater suffering, for such comparisons would be grotesque and unproductive. Rather, Alice’s lament speaks to those dehumanising aspects of living with an illness that could so easily be alleviated if we simply shifted our collective perceptions and dispositions. In this way *Still Alice* seeks to be a form of earnest advocacy, a means of partially rectifying the therapeutic void by dispelling misconceptions that needlessly hasten isolation and impose stigma (Wade, 2015). Indeed, the film adaptation of *Still Alice* (2014) goes even further in this impassioned advocacy, with the film’s call-to-arms found in a speech given by Alice in which she rails against common perceptions of persons with dementia being ‘incapable, ridiculous, comic’. *Still Alice* is also liberally sprinkled with practical advice, citing actions that can be done proactively by both patient and carer to ensure safety:

‘... you should probably register with the Alzheimer’s Association’s Safe Return program. I think it’s something like forty dollars, and you wear an ID bracelet with a personal code on it.’

Alice also finds solace through small dementia support groups – sometimes referred to as ‘memory cafes’ – where those living with dementia (and their carers) can share experiences and advice, but perhaps even more importantly simply be recognised as social and desiring beings, knowing that they will not be reduced to their afflictions in this space (Mather, 2006). Genova’s novel also emphasises the potential for selfhood to be maintained by way of enabling affirming labours, regardless of however intolerably diminished sufferers may appear relative to their former abilities. For some of those living with dementia such labours can take on a sense of urgent vocation, for as diagnostic processes have improved in recent years more persons have been identified with dementia at earlier stages of progression, thus enabling greater opportunities for them to assert control of how the transformation in their ontology will be managed over time (Beard, 2004a).

While Lisa Genova is certainly the most direct, Emma Healey and Fiona McFarlane also look to shift popular conceptions of dementia in their respective works. Like *Still Alice*, point of view in their narratives is restricted entirely to the character living with dementia, with Healey’s *Elizabeth is Missing* especially notable in wholly adopting a first-person perspective. This is an
admirably ambitious undertaking given the difficulty of presenting a mimetically salient internal depiction of neurodegeneration, while also imbuing that same single voice with enough expository heft to convey a complex narrative to the reader. Through these fixed perspectives the authors demonstrate that, although some capacities may be diminishing, their protagonists’ inner lives remain rich and vital, and their emotional acuity still finely tuned. The desires of these characters are perhaps less precise and tangible, but they are no less fervent, and at times these persons appear to display a greater sensitivity to their surroundings and embodiment than they may have previously.

These unusual narrative voices know when they are being patronised, socially excluded, and prohibited from doing once mundane but still life affirming activities. Also registering are tones, demeanours, or related behaviours of others which signal a change in the dynamic of their relationship, precipitating and enacting yet another demotion of selfhood. This recognition of being excluded can ironically even occur in the midst of other failures of perception:

‘They talked about her as if she weren’t sitting in the wing chair, a few feet away. They talked about her, in front of her, as if she were deaf. They talked about her, in front of her, without including her, as if she had Alzheimer’s disease.’

Genova, 2009: 225

Alice observes the social exclusion that makes it seem to her as though she were suffering from Alzheimer’s disease, yet the very manifestation of this condition obscures from Alice that she is indeed undergoing rapid neurodegeneration. Alice does not understand why she has been made ‘other’, and this in itself is precisely why she has been excluded from discussions regarding her own wellbeing. Alice, Ruth, and Maud are also often aware of when they committed some kind of faux pas, even if they do not know exactly what misstep they took. This constant impression management is shown to be a complex and draining affair, and this is a common experience for those with dementia (Beard, 2004b). Ruth can sense the ‘serene weariness’ (McFarlane, 2013: 3), ‘tolerant chuckle’ (10) and ‘youthful authority’ (13) her children employ in an attempt to placate her fear of the tiger. Consequently Ruth finds herself wedged into a lonely, existential terror, for the knowledge that the tiger is not real – or at least not real enough to generate genuine concern from her loved ones – does not negate the felt reality of its presence for her. Still, Ruth remains resilient, acutely aware of her presence in this ‘liminal state’ of living with dementia (Lock, 2013: 91).
This retaining of desires while losing the capacities to realise them, combined with the recognition of the damning and disparaging assessments of others, can generate lonely, melancholic longings. Ruth, for example, is desperately starved of company, and knows the exact timing pattern of a typical conversation on the phone with her family, and when to best end a call to avoid seeming helpless and needy (McFarlane, 2013:12-3, 71). Maud of *Elizabeth is Missing* is similarly longing for company but sensitive to pleading such hopes, and so deploys tidbits of gossip in order to coax loved ones to linger a little while longer:

‘I could tell Carla. News of that kind is valuable. Helen has been known to stay an extra thirty seconds for it in the past.’

Healey, 2014: 24

Despite desiring a form of communion through shared and co-creative narratives, Ruth and Maud usually find themselves alone with ‘the gentle, bewildering expanse of the day, the filling of all those more-or-less hours’ (McFarlane, 2013: 21). Both characters exhibit a dry humour regarding this purgatorial state in which they reside, aware of their increasing failings but sardonically resigned to them:

‘A bang, somewhere in the house, makes my eyes skitter across the sitting room, there’s an animal, an animal for wearing outside, lying over the arm of the settee. It’s Carla’s. She never hangs it up, worried she’ll forget it, I expect. I can’t help staring at it, sure it will move, scurry away to a corner, or eat me up and take my place. And Katy will have to remark on its big eyes, its big teeth.’

Healey, 2014: 4

Such common minor failings are often met with this kind of weary, self-deprecating humour. Other missteps, however, can be immensely distressing, disheartening, and even terrifying. Indeed, when they can no longer be achieved the most seemingly banal and quotidian tasks can be the most frightening augurs of all, for they inescapably render apparent one’s cognitive decline. Maud, for example, feels an acute pang and searing embarrassment upon realising she no longer knows how to set the cutlery on a table (Healey, 2014: 60-1). Alice gets lost in her own holiday home searching for the bathroom, and in her growing panic loses her continence (Genova, 2009: 149-51). When Ed’s son Connell tells him ‘your breath stinks’ the usually fastidious Ed is flushed with an embarrassment that results in an hour of compulsive brushing (Thomas, 2014: 296-7). Inversely related to these disheartening performative failures, however, is that successfully carrying out even routine and mundane tasks can be marvellously enlivening, serving as small but nonetheless positive affirmations of a purposeful
A common observation of those living with dementia is a desire to ‘stay busy’ as a way of affirming one’s presence in the world (Beard, Knauss and Moyer, 2009; Holst and Hallberg, 2003). Often this will be through activities that are ‘smooth-flowing and unreflective’, which tend to draw more on embodied habits, rather than the difficult demands of higher cognition (Phinney, Chaudhury, and O’Connor, 2007: 391). Actions are infused with both this revitalising force and the subsequent melancholic recognition of what this novelty forebodes:

‘Once a week, under Jeffrey’s orders, she [Ruth] went out to sit in the car and run the engine; doing so, she experienced a busy, practical sense of renewal followed by the disquieting feeling she was about to drive herself to her own funeral.’

McFarlane, 2013: 41

Precariously positioned between their declining capacities and the damning assessments of others, the protagonists of these novels adopt various strategies to assert their selfhood against the prospect of becoming irrevocably ‘othered’. Persons living with dementia will usually have to contend with three overlapping strategies of asserting selfhood (Beard, 2004b: 422-5). The first is that of ‘defining moments’, wherein sufferers may first begin to recognise something is amiss, or experience public failings, or, in later stages, will be compelled to relinquish the undertaking of activities tied to their independence and autonomy (eg. driving, using appliances, personal care etc.). Such ‘defining moments’, then, are often dispiriting markers of decline and the acquiescence of personal responsibilities to others, with said markers and moments often tied to ethically-inflected assessments of the productive hypercognitive subject. Secondly, following diagnosis, those with dementia must then consider whether ‘to tell or not to tell’ others of their condition (Beard, 2004b: 422-4). Some subjects prefer to conceal their condition from others and so attempt to ‘pass’ as cognitively ‘normal’ for as long as possible. Others may prefer to be open and frank about their condition, perhaps because concealment can be an incredibly taxing task. Lastly, and closely related to the previous two strategies, subjects may adopt ‘preservation’ strategies, avoiding activities that threaten to be disorienting or harmful to their pride, while also embracing habits they believe will best realise and protect their affirming abilities and affective desires (Beard, 2004b: 424-5).

Alice and Ed are by far the most systematic in crafting these strategies in the novels discussed here. This is perhaps unsurprising given their academic backgrounds, which may better equip them for cool, unflinching appraisal of forthcoming circumstances. Using these intellectual resources Ed and Alice manage to pass as cognitively sound in their professional capacities for an extended period, displaying inventive means by which to compensate for deficiencies. With
regard to their concealment strategies, Ed seems aware of his condition from an early stage in *We Are Not Ourselves*, but opts to conceal it from everybody, including his wife Eileen. Alice alternatively elects to tell her family, but tries to preserve her master status of intellectual at Harvard for as long as possible before her decline makes teaching untenable. Ultimately both are ‘unmasked’ in tragically public fashion, Ed especially so (Thomas, 2014: 155-60).

Still, Ed and Alice, and Ruth and Maud to a lesser degree, remain unerringly pragmatic and conscientiously hopeful. Alice assiduously tests her memory retention, while Ed rigourously adheres to minutely devised routines that enable him to continue teaching. Maud’s handwritten notes around the house often remind her of good habits of neurological care of the self – for example that ‘Coffee helps memory’ (Healey, 2014: 11) – while Ruth works diligently on the upkeep of her secluded home. As touched upon earlier though, Alice is by far the most methodical, secretly devising a self-administered examination, conducted daily, in order to assess her cognitive decline. This measure of Alice’s own devising will determine for her when suicide becomes the most appropriate course of action. This agency directed towards committing suicide, though initially crafted by Alice, is thus given over to the objective measures and scripts of the test. Alice’s ‘Butterfly’ test is a simple set of questions, housed on her Blackberry phone, which she is prompted to answer daily:

‘Alice, answer the following questions:

1.  *What month is it?*
2.  *Where do you live?*
3.  *Where is your office?*
4.  *When is Anna’s birthday?*
5.  *How many children do you have?*

*If you have trouble answering any of these, go to the file named “Butterfly” on your computer and follow the instructions there immediately.*’

Genova, 2009: 119

These instructions are intended to lead Alice to a hidden cache of sleeping pills procured in advance, amounting to a potentially lethal dose. Of note here is that Alice’s ‘Butterfly test’ is essentially an adapted form of the Mini-Mental State Examination (MMSE), a short test commonly used to assess cognitive function in those with suspected neurological disorder. The main difference in this case is that – as opposed to the standardised questions of the MMSE – Alice’s test is modified to explicitly measure what she believes makes life worth living. In this way Alice has cleverly found a way of incorporating her narrative drives into a medical
model, and preserves her autonomy by distributing her intentional self into objects that can later compensate for her declining faculties (eg. her Blackberry phone prompts Alice to take the test every morning at 8am, so that she herself does not have to remember). The use of notes, routines, prompts, and the like are found throughout these novels of dementia, and are common strategies amongst those in early stages of disease progression as a means of retaining some independence and autonomy (Steeman et al. 2006).

Maud, believing her friend Elizabeth is missing but not being able to rouse the concern of others, is also fiercely motivated to retain her faculties to the very last, including by – like Alice – extending her intentional self into artefacts that can retain her agency:

‘The thing is be systematic, try to write everything down... I’ve written that down too.’

Healey, 2014: 22

This, in passing, is a knowing and mildly melancholic humour, one not intended to mock Maud’s condition but rather to highlight her resolve despite such hindrances, along with emphasising the nagging residual panic that propels her labours. Hence Maud attempts to compensate for her failing memory by distributing her narrative drives into written notes, and often finds verbally repeating words – re-attaching signifier to signified – comforting and orienting (Healey, 2014: 113). Alice too will chant things she wishes to remember, extending mind into sound (Genova, 2009, 217-9), while Ed will compose himself in monk like fashion before a social occasion, seeming to summon up hidden cognitive reserves through meditation in order to successfully ‘pass’ in the company of others (Thomas, 2014: 303-4). Ruth also displays a fervent determination to retain her highest autonomy until she can discern the true motives of the tiger and Frida. It is this determination to retain a narrative drive as a way of maintaining a sense of self that I will now address.

Coherency of self through motion and embodiment

Paul Ricoeur (Simms, 2003: 102-3; Keuss, 2013: 145) suggests that identity is retained through the ability to place oneself in a propulsive mechanism of narrative, where identity denotes not simply *idem* or ‘sameness’ over time, but *ipse*, a form of constancy through change. This is to say that identity is affirmed through the motion of a ‘plot’ that allows for constant but coherent refiguring. One could metaphorically liken this to a gyroscope, where its agency is
only realised in the balance of interpenetrating centrifugal forces that *still* and centripetal forces that *throw*. Once this agency is enacted, though, a spinning gyroscope can balance itself on something as insubstantial as a taut piece of string. Similarly, those with dementia often only require only a thread of narrative in order to stay affirmed in the world. It is this constancy-through-movement and force-feedback that affirms our relation to the world, rather than ideals of the immutable unity of self-ness. However, both *idem* and *ipse* are threatened by the onset of dementia. The ‘sameness’ of *idem* is clearly undone by neurodegeneration itself, for physiological changes are taking place that undermine those capacities which allow for ‘fixed’ aspects of our identity. These processes will steadily erode short term memory, language capabilities, problem solving capacities, regulation of mood and emotion, and eventually long-term memories and basic motor functions. Under this new regime, some ‘sameness’ is simply impossible, for its requisite mechanisms are no longer present or fully functioning. However, the more narratively relevant *ipse* – of the figure that ontologically shifts over time in ways found to be self-actualising – remains tenable for those with dementia. This, however, requires the dedicated labours of those around the subject, guiding thought which may be fragmented and elusive towards narrative drives that can be practically sated.

Again, this is not a question of avoiding hard realities, for inevitably those with dementia will reach a stage where it appears they can no longer be reached by our most dedicated efforts of care. Catherine Malabou (2012: 14-5) describes such unfortunates as ‘figures of the void’, with whom we can no longer find communion by our usual therapeutic endeavours, and thus they steadily, irrevocably, slip into abysmal alterity, one marked by the absence of self:

‘The worst dissensions of the subject with the self, the most serious conflicts, do not even look tragic. Paradoxically, they are signaled by indifference and coldness.’

In dementia the synaptic self is slowly being suffocated, with neuronal networks steadily being unwound, and with it the range of cognitive capacities the sufferer might still access and perform. This degeneration may occur without any outward change, except for the gradual loss of dispositional displays, which will eventually lead to a seeming ‘indifference and coldness’. Malabou (2012: 15) cites Maurice Blanchot’s discussion of Kafka’s *Metamorphosis* to illuminate this purgatorial state, wherein a subject is ‘unable to quit existence’, stuck in a ‘mode of degeneration’ as they move ‘closer still to absurdity and the impossibility of living’. Our ingenuity has solved the maladies of old, never before have we been more resilient to the decomposition of our bodies, and so now we must contemplate the disintegration of subjectivity itself. How can we find our way to these ‘ontological refugee[s]’, who themselves
are only partial witnesses to their ongoing dissonance and disension of self (Malabou, 2012: 24)? Here one sufferer attempts to communicate this elusive, melancholic state:

‘I am being split open from inside. It is a process I cannot stop because I myself am that process. You think "I," "my body," "my mind," but these are only words. They used to protect me. Before I was like this. But now there is a greater force holding sway in me, which is not to be gainsaid. I don’t want to think about it any more.’


We can note the sense of betrayal, and of ‘mind’ and ‘body’ as occluding constructs of language, once protective and dependable concepts, and now shown to be mere facades. An enlivening force still holds sway, something persists, but something also desists. A former unity is lost, one to which Malabou (2012: 32) invokes Spinoza (2000: 256-7), who remarks that:

‘I understand the body to have died when its parts are so disposed that they maintain a different ratio of motion and rest to one another ... For I am not so bold as to deny that the human body, whilst retaining the circulation of the blood and other features on account of which a body is thought to live, can nevertheless be changed into another nature which is very different from its own. For no reason compels me to assert that the body does not die unless it is turned into a corpse; indeed, experience seems to speak in favor of something else. For it happens sometimes that a man suffers such changes that it is not easy for me to say that he is the same. For example, I have heard of a certain Spanish poet who was stricken with disease, and although he recovered from it, he was so forgetful of his past life that he did not believe that the dramatic poems and tragedies that he had written were his own, and could have indeed been taken for a grown-up infant if he had not also forgotten his native language.’

Biological mechanisms can continue to operate for extended periods after a trauma is inflicted, but they may do so without ever again coalescing to form a concert of volition, for the subject’s sense of narrative propulsion is lost. Hence through neurodegeneration we witness a cleaving and distortion of life’s ratio and motion that begins with a series of small betrayals: A name is forgotten; we find ourselves lost in a familiar place; temporalities take on strange qualities; or we feel trapped within a body rendered alien by odd motor functions. Ricoeur has his own version of Spinoza’s characterisation of life as a ratio of motion, positing a disjuncture or disproportion that can occur between what is willed or conceivable in the universal (logos),
and what is possible of a physical being bounded in the spatiotemporal (bios) (Dauenhauer and Pellauer, 2014). This, for Ricoeur, is a ‘ratio of fallibility’ measured by the varying accord or discord between one’s *imagination, character, and feeling* (Simms, 2003: 16). Of course these measures can never entirely align and reconcile with each other, for this would suggest an inert homeostasis. Rather, it is the constant churn of imbalances and corrections that propels this Spinozan motion; a self constantly at work between what seems willed by the indexical ‘I’ and what volitions appear to simply arrive from the ether to tug us here and there. The difficulty, as will be shown below, is when ‘imagination’, ‘character’, and ‘feeling’ can no longer be reconciled to each other at any point in time.

All of the fictional protagonists discussed in this chapter are imbued by their authors with a felt sense of urgency. Some end must be realised before they no longer have the requisite wherewithal. These reckonings are not clearly demarcated tasks, nor do they represent the over-moralised making-amends-for-past-mistakes tropes that Block (2014) rightly criticises. Instead these ‘conatic hopes’ (Hage, 2003) are more elusive, felt longings, something inexpressible that seeks to be freed from the confines of slipping minds. For Ruth this is signified by the tiger, ‘her consequential visitor’ (McFarlane, 2013: 23). Ruth is both fearful and joyous of this new presence:

‘A tiger! Ruth, thrilled by this possibility, forgot to be frightened and had to counsel herself back into fear.’

McFarlane, 2013: 2

The tiger is not intended to symbolise any one thing – McFarlane (2014) herself has admitted as much – but is rather used to give visceral form to the heady confluence of memory, longing, fear, and sheer possibility that Ruth feels as her ontological makeup shifts into a state of alterity. The tiger is a nonchalant, untameable predator, coming and going and doing as he pleases. Ruth is invigorated by this presence, one she desires to inhabit and emulate, adopting the tiger’s demeanour and comportment so as to counter the dominating presence of Frida (who herself is partially reflected in the avatar of the tiger through her large but graceful and skulking presence, and brightly coloured hair). Ruth knows the tiger is some portent of change, and finds this to be incredibly enlivening after previously lingering in a state of numb isolation since the sudden death of her husband. The arrival of both the tiger and the domineering Frida instils a fevered urgency within Ruth, a desire to regain control of her narrative and to project herself into the future as an intentional, hopeful being. This projection of the self includes pondering desired states, such as mulling over a potential visit from an old flame:
‘Ruth sat still with the idea of Richard. She was surprised by how much she wanted to see him, and also by the pleasure of wanting. He would be an arrival – one that she had asked for, that she had planned.’

McFarlane, 2013: 64

The ‘pleasure of wanting’ is to willingly throw oneself across space and time through one’s own future-oriented narrative; it is to retain idem while expanding ipse. This willed desire of holding indexical unity towards a futurity runs counter to Frida’s attempts to quell and dull Ruth in routine habits. Consequently the novel’s unfolding follows a tense descent of increasingly claustrophobic and delirious encounters, as each woman looks to impose their will upon a subjectivity steadily becoming untethered from reality.

In Healey’s Elizabeth is Missing, Maud’s coherency of self and emotional urgency is affixed to the world through her search for her friend Elizabeth, whom Maud believes is missing. The reader will soon grasp that Elizabeth is not actually missing at all, but will also come to understand that Maud simply cannot retain this fact. Instead ‘Elizabeth’ is felt as a constant lack, a gnawing absence within Maud. When Maud cannot attach the fitting signifier to this gap her notes often serve as a reminder that Elizabeth is ‘missing’, and so reconcile Maud with a clear narrative and imperative to action. Family and carers patiently try to reassure Maud that Elizabeth is not missing and, in a good faith attempt, Maud tries to yield to their pleas by writing herself a note as a way to convince her distrustful mind of the ‘truth’ (Healey, 2014: 81). However, this does not reconcile the felt lack, for soon thereafter an affective gap opens:

‘Not that again,’ Carla says. ‘I thought you’d given it up?’ [claiming Elizabeth is missing] ....

‘Oh yes,’ I say, laying down my pen. I feel disappointed, as if I’ve lost something valuable.’

Healey, 2014: 83

What is ‘valuable’ here is the unity of self that comes through narrative propulsion, the intentionality that extends Maud into the world through a desire to effect some affirming action:

‘I have a nagging feeling that there’s somewhere I’m supposed to be. I put on my coat and walk out. I can’t think where I’m going, but that doesn’t matter, I’m sure I’m supposed to be somewhere and I must come to it eventually.’
'The next street is just as strange and my heart gives a thud in my chest. I’m running out of time. I’ve got to get somewhere, or to someone. It’s urgent.'

Maud is beholden to a residual of feeling (see below), her narrative of self cannot be maintained without some definite task that compels her to action. Hence Maud’s sense and affirming motion of selfhood is only realised in the labour of the ‘urgent’ task of looking for her friend, Elizabeth. This is generative of a consoling single-mindedness that — though strictly speaking based upon a falsehood — is Maud’s best means of persisting in the world. The *Guardian* review of *Elizabeth is Missing* (Gillies, 2014) unfortunately missed the importance of this central conundrum of a distress that can actually be enlivening and affirming, sceptically noting that:

‘It’s tempting to wonder why a woman constantly writing herself notes – and still able to read them – hasn’t also written down the solution to the Elizabeth mystery, which, it transpires, Helen [Maud’s daughter] has explained to her over and over again.’

But the mere ‘solution’ to the ‘mystery’ cannot, in itself, resolve a lack Maud registers within herself, for Elizabeth’s ongoing status as ‘missing’ instils a momentum that keeps Maud reconciled with the world. Indeed perhaps it is the *only* thing maintaining her narrative unity, and thus Maud seems compelled to retain this propulsion to action. In every instance where others attempt to convince Maud of the truth she immediately slips into a void, bereft of meaning, only to be brought back by the eventual act of forgetting this truth. In a telling scene Maud is undertaking a diagnostic assessment, failing every measure of cognitive functioning, except for one: when asked to write a complete sentence Maud neatly jots ‘My friend Elizabeth is missing’ (Healey, 2014: 156). It is this desire to effect positive action upon the world that enables Maud to retain such capacities in the face of radical ontological transformation and loss.

Unlike Ruth and Maud’s projects of selfhood, which delve into elusive and abstract longings to be reconciled with the world in some form, and Alice’s narrative drive, captured in her rationale for developing the ‘butterfly’ test, Ed’s narrative unity is instead maintained through a palpable urgency to instil within his son Connell an openness to the world, one that will sustain him through a life soon to be without his father. Also evident is a less reticent display of Ed’s marital affections for his wife Eileen. As Ed becomes further ensnared by Alzheimer’s he slips between demonic fits of rage and angelic outpourings of affection. Thrown between
good spells and bad spells Ed finds himself unable to regulate his emotional state, so that at times he appears to be ‘taken’ by a spectral presence and rendered unrecognisable. What this neurological atrophy somewhat ironically provides, though, is an expansion of Ed’s emotional capacities (for both better and worse). The filters of his aloof stoicism are removed and replaced with an equally determined will to leave affective imprints upon others through the co-creation of good encounters.

Our narrative persistence is always bound to our relationality, and so it is significant that even in the very latter stages of debility Ed conveys a desperation to retain the fidelity of his wife, barking a series of panicked ‘No!’s, ‘my’s, and ‘mine’s of possessiveness towards Eileen after a male carer moves into the home (Thomas, 2014: 487-8). This is one of Ed’s very last acts of discernible autonomy, and so it is noteworthy that it be reserved for protecting a relational bond. Ed also develops a predilection for taking photos, perhaps in the hope that memories and their accompanying emotions could be carried over into such representations (Thomas, 2014: 286). Ed stridently resists Eileen’s request to move into a nicer neighbourhood, implying an acute awareness that removal from familiar surrounds and routines will hasten his unbecoming (Thomas, 2014: 336). The importance of routine and familiar locales has long been observed to aid stalling cognitive decline in studies of dementia, particularly in enhancing feelings of security and comfort, which in turn better enables those living with dementia to remain socially engaged (Proctor, Silverman and Murphy, 1987).

Prior to diagnosis Ed is shown to be reserved and distant, perhaps selfishly so in the context of a new marriage. In part this may be due to the onset of neurodegeneration; there are early flashes of Ed seeming to not recognise Eileen, of flinching at her touch, and other behaviours not fitting with his otherwise rigidly sensible character. Following his diagnosis, however, Ed is imbued with a radical new vigour, albeit one that only manifests itself in small bursts of reverie and epiphany. This gives his interactions with Connell a palpable, yearning energy:

“‘I’ve noticed something in you that worries me,” his father said. “Maybe because it reminds me of me at your age. I made life harder for myself than it needed be. I see you hardening yourself. That isn’t you. I see you closing your mind. You are open and beautiful.’”

Thomas, 2014: 298

Here Ed is briefly able to strip himself of all pretences of stoic, patriarchal reserve, so that he may communicate what he feels most urgently: that the subduing of emotional volitions risks accumulating residuals of feeling that could so easily console, delight, and affirm others. This
willing vulnerability is a labour of figuration, of bringing others into existence through the transmission of affect (Brennan, 2004). Such displays in fictional works can so often slip into trite, sentimental tropes, wherein the terminally ill or neurologically different seem put upon this earth only to teach us neurologically high-functioning folk important life lessons, but Thomas’ take here is less sociologically naïve. His sensitive yet unflinching approach is especially apparent in a scene where Connell tries to uphold Ed’s instruction, faithfully trying to espy and maintain the flow of feeling between them as his father’s capacities diminish:

‘After his father was in the chair, Connell watched his knee for some vestige of the gesture that had bound them over the years... Early on in the illness, whenever Connell hugged him, his father squeezed back and said simply, “Good boy.” When his father began to lose his strength, the squeezes turned to pats; when he lost his coordination, the pats became pounding slaps. “Just rub,” Connell said once, as they clutched. “Rub. Now just keep your hands still for a second, like this.” Then his father started to slur his words, so that all he could say clearly was “Good, good, good,” and then eventually that “good” gave way to an inarticulate sound – but Connell knew what it meant, even if no one else could have interpreted it. Then Connell would lean down to initiate a hug, and his father would reach up from the couch, until eventually his father didn’t reach up anymore but just patted his own knee. The final stage came when Connell noticed that his father patted his knee whenever Connell was even in the room. Now, though, in the wheelchair, he didn’t move at all.’

Thomas, 2014: 534

This, for Connell, essentially signals the irrevocable loss and admission that ‘His father was gone, gone’ (Thomas, 2014: 542). Such dispositions and expressions of, in this case, familial love, are both embodied and contextual, each folds into and affirms the other in a virtuous hermeneutic circle. But when one falters both are diminished in spiralling fashion, so as Ed’s condition declines Connell must help translate feelings that are bodily trapped into contextually appropriate and communicable forms. Squeezes become pats, pats teeter on becoming hard slaps but are gently transformed into rubs. ‘Good boy’ becomes just ‘good’, and yet this ‘good’ signifies much, for its underlying impulse is known only to Connell, and is directed to him alone. Connell sets the context of an embrace, maintaining and modifying the hermeneutic bridge for as long as possible, so that eventually Ed patting his own knee becomes the only means of transmitting feeling. The emotional labour required to maintain these transmissions tells us much about the performative burdens of relational being,
captured poignantly by one carer who laments that ‘you just know in your heart of hearts that he’s in there and if you let go, that’s it’ (Gubrium, 1986: 41).

Explorations of embodiment play a key role in novels exploring dementia, sometimes as felt absences, other times as expansions of self. Often it is an uncanny combination of both, such as when The Night Guest’s Ruth contemplates her changing embodiment and sense of temporality:

‘When she woke early the next morning, Ruth couldn’t remember falling asleep. More than this, she couldn’t remember her own body; it seemed to be missing. Nevertheless, she was able to move... Ruth was standing, without quite knowing how she came to be on her feet. She felt nothing. This might be the true weight of age, she thought, without feeling her thought; it was weightless, everything was, but not in a light way. That might be pleasant. This weightlessness was all absence... Then there was a noise in the room, which finally she recognised as her own voice – she wasn’t sure what her voice was saying, but the existence of it, and its definite sound, returned sensation to her back and legs.’

McFarlane, 2013: 152

Again, it is the liminal state of dementia that brings into focus the complex entanglement of our embodiment and our accompanying sense of ontological being. Yet it seems the body has been strangely absent from analyses of dementia, reduced only to a set of motor functions in decline, or a set of parts to be arranged in the provision of personal care (Oberg, 1996). But we are not brains in a vat, and our body is inextricably woven through our psyches, especially through our endocrine system (Wilson, 2004, 2015). So, while hard transhumanists may propose enhancing our unique capacities for rational thought, we should not neglect to note that ‘the most basic form of consciousness, is not symbolic or linguistic. It is bodily, a sense of at-homeness in the body ... the sense of one’s body as one’s own’ (Berger, 2014: 132). This, we can recall, speaks to the strangeness of measuring our ‘morality’ through MRI scans where participants must lie perfectly still for the data to be ‘reliable’, for our response to such dilemmas is often powerfully visceral prior to the arrival of higher cognition. To exclude the body from such encounters is therefore to reduce ethics to a hopelessly narrow ledger of our being. The ways in which our volitions are held and distributed by the body must be considered, and it seems significant here that Ruth does not begin to emulate the tiger – and its particular ethical disposition to the world – until her own body begins to unshackle its previous bounds.
In this creeping porosity of both body and temporality not all experiences will be pleasant. To be thrown back and forth through memory and accompanying shifts in self-conceptions, along with being similarly ejected from one’s body can be immensely distressing and disorienting for the already narratively fragile subject. Simple motor functions – such as Ed attempting to place money in a toll booth receptacle – become complex processes requiring taxing deliberation and focus (Thomas, 2014: 209). Everyday preferences that serve to make up our affirming idiosyncrasies are lost, such as Alice not recalling her strong dislike of coffee (Genova, 2009: 93). Cycles of ‘natural’ processes, such as sleeping patterns and meal times, are lost, with ‘sundowning’ and odd eating habits quite common (Volicer et al., 2001; Ikeda et al., 2002). Protagonists forget to eat (Thomas, 2014: 378), eat too much (Healey, 2014: 5,121), or, in the case of Alice, fail to link ingestion with appropriate activity, who vomits while running after forgetting – both in the cognitive and bodily sense – that she had only recently eaten a heavy meal (Genova, 2009: 97). Further forms of body dissociation can occur, sometimes felt as uncannily pleasant reckonings:

‘Ruth hadn’t thought about her feet in some time. She was mildly surprised to find them intact at the end of her legs…’

McFarlane, 2013: 81

But at other times this combination of body dissociation with collapses of temporalities can render self-perception a terrifying ordeal. Alice is horrified by her image in a mirror, it appears aged, alien, and grotesque, and so she proceeds to paint over all the ‘defective’ mirrors (Genova, 2009: 282-3). Ruth similarly begins to no longer recognise her reflection, with her shifting ontological makeup here marking a falling action for the novel (McFarlane, 2013: 211). From here on Ruth becomes susceptible to temporalities collapsing with greater speed and force, along with other actors taking on increasingly fantastical qualities, altogether ramping up the tension towards The Night Guest’s denouement.

What can often alleviate such discords is simply the physical touch of another. This can be a powerful means of (re-)affirming the subjectivity of persons living with dementia (Kim and Buschmann, 1999; Gleeson and Timmins, 2004). Sadly, however, this is often lacking in rationalised regimes of care, as noted by the daughter of a man living with dementia:

‘He’s going now through a touching stage. He wants to be holding my hand all the time, because what touching does he get during the day? He gets cleaning, and moving, and some kind of nursing care. He doesn’t get the loving touches, he doesn’t get held by his wife or by his daughter. So these are things that we forget, we run
away from the disease, we say ‘Well I can’t stand seeing him like that’ so then he misses out on all the things that he needs.’

Vision TV, 2011

The ‘loving touches’ is the contact that affirms another as a subject worthy of recognition, rather than a patient to be efficiently managed towards death. These are tender acts of figuration through the recognition that ‘existing is being caressed and touched’ (Ernaux, 1997: 88, cited in Van Gorp and Vercruysse, 2012: 1276). As noted earlier Ruth often loses sense of her limbs in space, even to the extent of being ‘mildly surprised’ to find her feet still attached to her legs. Yet to simply be held by another reaffirms oneself as a desiring and embodied entity, a confirmation Ruth begins to yearn for following the tiger’s arrival:

‘Ruth went back to the lounge room and listened for some time. Every noise she heard was ordinary, and the cool room was stiff and airless. She lay on the sofa, turned her back from the lace of the windows, and waited. It seemed important that something might touch her, and crucial that she not open her eyes to look for whatever that thing might be.’

McFarlane, 2013: 52

Affirmation through embodiment is also shown to occur in other ways, with satiation often derived from obsessively undertaking single, simple tasks, particularly physically taxing ones – in Ed’s case – or through the tearing and breaking of small objects, of which Maud, Ruth and Alice all engage in frequently. These are small but sustaining acts of physically proving and imprinting one’s presence upon the world as a form of therapeutic haptics. Even the most minor and seemingly banal of movements can be immensely satisfying when they assert an accord of body and mind:

‘Ruth nodded again. It felt good to nod, so she continued to do so; yes, she said with her pendulous head, and yes and yes again; she was a clock, she thought; she was generous and wise.’

McFarlane, 2013: 208

Physiological displays of interior dispositions can still manifest themselves, and indeed may become all the more crucial for those surrounding the sufferer to recognise and encourage as higher capacities wane. Ed, for example, struggles to follow the intricate stories of television programs, yet there remains a recognition of the affective undercurrents of these narratives:
'What caught fire in his mind were the rudiments of narrative: a ringing retort, anguish on a face, a happy reunion. He could still feel. He could still cry. He did cry, without knowing he was doing so. He felt the tears drying on his face afterward, and it was though he had awoken from an unhappy dream.’

Thomas, 2014: 571

Intensities of feeling may pass, register, and leave traces in ways unbeknown to the higher cognition of the subject (Hochschild, 2012: 24-34). Recognising and embracing the volitions of another is felt to be empowering. Ruth, for example, in adopting the traits of the tiger by prowling around her house with an air of nonchalant impunity, experiences a radical transformation in herself, so that what was once ‘only the silly clamour of her beating blood’ (McFarlane, 2013: 2) later becomes ‘the distant roar of her own blood’ (169). That this refiguring is a symptom of her escalating neurodegeneration seems almost beside the point; her cognitive materiality will inevitably change, but what matters is the vitalising impulses that remain.

However, compounding the difficulty of retaining realisable volitions is the frequent blurring and collapse of temporalities. Part of sustaining a unity of motion and form is the ability to be multiply present in different temporalities; to stretch one’s present self into the past in a way that construes a coherent narrative, but also to extend oneself into the future and thus affirm the will of an intentional being. For our protagonists living with dementia this is incredibly difficult, for they are repeatedly thrown into reveries of the past, while also lacking the cognitive means to project themselves into the future, even in the very near term. The result is that temporal existence either shrinks to a pinprick of the present or is stuck in a fugue state of the past, dredging up residuals of feelings from events that cannot be altered. For example, Alice repeatedly mistakes her daughter for her deceased sister, while Maud is constantly dropped into a well of memories around the unsolved disappearance of her sister when they were young. Ruth regularly forgets that her husband, Harry, has died, resulting in a repeated resurfacing of anguish as the loss is felt again and again; a looping, unending bereavement:

‘Frida sank into the catless end of the couch. ‘Ruthie,’ she said, with unexpected softness, ‘Harry’s dead.’

‘I know that,’ snapped Ruth, and she did know it; she had even known it a moment ago when she suggested they consult him. And she was disgusted with him, because nobody could be really, truly dead; nobody could stand it. It was one thing, maybe, to die – and Ruth held his head as Harry died, she remembered that now, she saw the
sand on the pavement at the bus stop and Harry’s shaking dying head – but it was quite another to go on being dead. That was obstinate; it was unkind.’

McFarlane, 2013: 211

These characters suffer a constant churn of affect-laced memories butting up against blunt realities, and when the two become entangled this can also cloud their present willed intentions. The result is a dizzying confluence of emotional overflows and residuals, which requires the labour of those surrounding the subject to continually help render their shifting interiority towards a new figuration and accord with the world.

Overflows and residuals of feeling

During an interview Emma Healey, author of Elizabeth is Missing, stated that one of her primary motivations in writing the novel was in rectifying common misconceptions of interpersonal encounters and their lingering effects:

‘The misconceptions about the illness upset me more than anything, the idea that you can be less than pleasant to somebody with dementia ‘because they won’t remember’ whereas in fact the feelings evoked are residual. They know something is wrong, that something bad has happened and they don’t always forget that.’

Emma Healey, in interview with Miller, 2014

Certainly, recollection encompasses much more than simply the descriptive content or ‘plot’ of an encounter. We also re-collect the emotional imprints left by others through interactions, gathering together a reverie of embodied dispositions and their accompanying narrative thrust. Indeed, contrary to the harmfully ignorant understandings highlighted by Healey, wounds inflicted on the psyche can be even more harmful when their narrative aetiology is unknown, for the inability to connect injury to cause may leave one in a state of crippling dissonance. While the recent affective turn in social theory distinguishes clearly between ‘emotion’ and ‘affect’ so as to open up an ontology irreducible to personal identity (Massumi 2002; Hynes, 2013; Hynes and Sharpe, 2015), the work of Teresa Brennan (2004) provides a description of the flow of emotion that I am associating with the emotional labour of dementia care. Brennan (2004: 3) describes the ‘transmission of affect’ as ‘a process that is social in
origin but biological and physical in effect’ with ‘enhancing or depressing energies’ that result as they move from one subject to another.

As Maud’s cognitive faculties deteriorate she will repeatedly lose the narrative thread of this circuit of emotion, her volitions are untethered from affirming ends, resulting in a trapped residual energy that swells a reservoir of distress. Healey is quick to establish to the reader the significant impact these residual emotions have on Maud. The opening chapter begins with Carla – Maud’s carer – breathlessly recounting a news report of a mugging of an elderly woman who had been found “‘with half her face smashed in’” (Healey, 2014: 3). Maud laments to herself ‘I wish Carla wouldn’t tell me these things; they leave me with an uneasy feeling long after I’ve forgotten the stories themselves’ (Healey, 2014: 3). These induced feelings linger within Maud, expanding and looping upon themselves once they are cleaved from their previous referents in the act of forgetting. Healey’s Maud and McFarlane’s Ruth are especially prone to such residuals. What is induced by another is retained, but soon thereafter found to be inexpressible, sometimes distressingly so, but also occasionally in pleasant ways. The elusive quality of the transmission generates a potentiality that seeks affixing in a coherent narrative. For instance, when Ruth countenances the new presence of the tiger she cannot help but revel in the possibilities it engenders:

‘... and pictured, as she did so, the headlines: ‘Australian Woman Eaten by Tiger in Own House’. Or, more likely, ‘Tiger Puts Pensioner on the Menu’. This delighted her; and there was another sensation, a new one, to which she attended with greater care: a sense of extravagant consequence. Something important, Ruth felt, was happening to her, and she couldn’t be sure what it was: the tiger, or the feeling of importance ... She felt something coming to meet her – something large, and not a real thing, of course, she wasn’t that far gone – but a shape, or anyway a temperature. It produced a funny bubble in her chest.’

McFarlane, 2013: 4

A life that had once descended into whiling away the hours now takes on an expansive urgency of ‘extravagant consequence’. With the powerful dual presence of Frida and the tiger, Ruth’s days become ‘thick’ and ‘crowded’ with a ‘strange hothouse heat’ (McFarlane, 2013: 40). Ruth knows not the why or wherefore of this atmospheric change, but its sensate veracity promises some form of reckoning and reconciliation with the world.

Maud’s residual of emotion, on the other hand, is laced with more panic and disquiet, given that it is tethered to her ‘missing’ friend Elizabeth. This is not a disinhibiting residual, rather it
propels Maud into action, but often her anxiety holds a charge that knows not where to dissipate. Maud repeatedly finds herself with unrealised affects stuck in a narrative disjuncture, seeking to be affixed somewhere, with volitions coursing through the body whose referents cannot be found:

‘... but I can’t sit down, I must keep on. I must do the thing I came to do. For a moment I can’t think what it is. My mind is blank. My arm starts to shake and my heart beats in my stomach.’

Healey, 2014: 75

These are feelings fizzing with potentiality, physiologically manifesting themselves as something akin to a fight-or-flight response, except that Maud does not know the source of her unease. But when these discords of volition and narrative are reconciled, Maud’s comfort is palpable:

‘I fold a stalk over itself until it snaps. ‘Tell me. Tell me who it is. Who’s missing, Helen? Who am I looking for?’

She says Elizabeth’s name, and hearing it is like falling into a soft bed. Bits, bits fall from the stem of a hydrangea as I run my hand down it.’

Healey, 2014: 166

This desire for narrative accord creates powerful somatic markers, the pangs of a selfhood struggling to persist. This is especially evident through a deathly panic Alice feels when she cannot find a desired object, knowing not what the object is but that she will be certain of its vital purpose when it is found:

“‘I don’t know, I told you, I’ll know it when I find it. I have to find it, or I’ll die.’”

Genova, 2009: 237

This feeling of the object holding literally life-or-death importance prompts Alice to think it may be her medication, however when she finds the medication ‘the urge, the life-and-death need, didn’t dissipate.’ (Genova, 2009: 237). Sadly, Alice never finds this object. Later it is discovered to have been her treasured Blackberry phone, which Alice had placed in the freezer. Though Alice cannot quite join the narrative dots her intensely felt suspicions are essentially correct, for while she does not ‘die’ from the loss of the Blackberry it does signify

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28 This is a common form of object-use error committed by persons with dementia (Cappa et al., 1998).
the end of her self-administered butterfly test, and therefore her autonomy in controlling the circumstances of her eventual death. Consequently Alice feels ‘an inconsolable grief over the death of the Blackberry’, a displacement of the sorrow she ultimately feels for herself (Genova, 2009: 239-40).

Frequently, throughout these novels we are given the impression that feelings have become trapped, and need to be ejected from the body by any means necessary. What may emerge, then, are overflows of inexpressibility, manifesting themselves through: cursing and other minor performative transgressions; the habitual breaking of small objects; and occasionally fits of impotent rage born of sheer frustration. The authors are all careful in establishing that these behaviours are clearly out of character for their respective protagonists, but neither are they purely physiological symptoms of atrophying neuronal networks. Rather, the overflows are entangled phenomena, for cognitive decline collides and loops with status ascriptions and resistance thereof, and thus flashes of feelings such as anger are caught between: attribution to the disease modifying personality; or a reaction to personal frustration; or a rational response to a perceived personal injustice. This results in a wedged state that Alice herself recognises as one of perpetual contingency (Genova, 2009: 198). Similarly, the normally prim and proper Ruth becomes increasingly frustrated with being corralled, dominated, and patronised by her children and Frida, such that swearing provides a cathartic release:

‘... she swore again, with greater pleasure this time, as if the word fuck could increase in beauty the more care she took to say it.’

McFarlane, 2013: 165

In another vein of contingent existence Ed – prior to his diagnosis – is placed in a bind of being unable to articulate to Eileen exactly why he adamantly refuses to move to another neighbourhood (for, as Ed knows – but cannot articulate – the loss of routine and familiar surrounds will rapidly undo him). This frustration of inexpressibility culminates in Ed calling his wife a ‘bitch’, an utterance which he had never before committed ‘in all their years together’ (Thomas, 2014: 195). Other residuals of feeling work their way out in a more mutually affirming manner, so that what was once repressed under a cool stoicism now becomes: raised fists in the air after accomplishing once mundane tasks; a suddenly more ‘purposeful’ lovemaking with Eileen; compulsively revising his students’ grades upwards, as if wanting to

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29 Verbal and physical aggression is relatively common among nursing home residents living with dementia. The difficulty of managing affective states combined with the loss of autonomy that comes with life in a total institution can understandably manifest in outbursts of frustration (Schreiner, 2001)
vicariously access their future feelings of pride and accomplishment (Thomas, 2014: 249-52); and, lastly, the previously discussed openness towards his son.

The once intellectually unassailable Alice also struggles to articulate her wishes to her husband, who in turn dismisses her pleas under the new regime of person made patient. Maud is likewise constantly thwarted by others in her attempts to look for Elizabeth, generating waves of anxiety that are only partially sated in tearing up tissues, leaves, flowers, pencils and the like (Healey, 2014: 71, 166, 217, 254, 260). Alice also derives some cathartic release from small but significant acts of physical force:

‘She hated those fucking eggs. She held one in her hand and threw it as hard as she could into the sink. One by one, she destroyed them all. It was marginally satisfying, but not enough. She needed to break something else, something that required more muscle, something that would exhaust her.’

Genova, 2009: 66

Exhaustion, it seems, may sometimes be the only means by which a brief reconciliation with the world can be realised, sought in order to both quell wayward thoughts and feel oneself to be a productive subject. Ed feverishly works himself into a soothing fatigue with monotonous, labour-intensive tasks, such as cleaning floor tiles with a toothbrush. At other times, Ed’s behaviour is neurotically haptic, compulsively turning things off, breaking pencils, squashing peaches underfoot, and stamping his feet in childish petulance (Thomas, 2014, 272-3). Seen from the point of view of the flows of emotion and feeling that are so important to sociality, these seemingly odd behaviours are no longer the strange habits of the ‘demented’, but rather perfectly understandable acts towards catharsis and self-actualisation.

The protagonists’ overflows of feeling are usually triggered by some event that disorients or inhibits, but at other times residuals of feeling arrive unannounced, repeating on themselves but shorn of any discernible context. As noted earlier, this can be equally empowering or disabling depending on the residual and context, and sometimes can be simultaneously both. Ed, for instance, is brought to ecstasy and then retching tears by a piece of music, compelling Connell to shift him from one medium to another: music to television (Thomas, 2014: 558-9). The former stirs and rouses, while the latter soothes and pacifies. Practically speaking, this homeostasis of stimulation is quite a common strategy in care practices, if only because heightened emotions require greater levels of supervision, which can stretch resources beyond capacity (Schreiner, Yamamoto and Shiotani, 2005). The typical outcome in such institutions is that emotions become rationalised and contained within safe middling zones, or persons with
dementia are simply left in null states, bereft of stimulation, and so become untethered from the world.

**Identity through narrative**

Those living with dementia must contend with multiple insults to their sense of self (Bender and Cheston, 1997: 518). Facets of themselves once considered central to their identity must be relinquished because they can simply no longer be performed to standards determined by others. Status ascriptions may shift, and perhaps some framings may be resisted, but others are acquiesced to, however reluctantly. A steady disempowerment may occur, a ‘de-skilling process’ whereby the sufferer is piece-by-piece relieved of all those undertakings which once amounted to their usual sense of agency and identity (Kitwood, 1990: 181-4). Those living with dementia are therefore burdened with the extra task of having to constantly assert and display their autonomy against the ongoing assessments of others, who discern what freedoms they may retain by measuring the surveilled subject against the ‘hyercognitive’ ideal. However, there are some means by which this project of self can be aided through the efforts of others, so that those living with dementia may be affirmed in their shifting state of being.

As carers know all too well this requires a labour of mutually constructing and performing narratives that are mimetically resonant for those living with dementia. Highlighted earlier, Arlie Russel Hochschild’s (2012) *The Managed Heart* provides a fine overview of the demands of this emotional labour. Often such a labour involves an act of ‘transmutation’, realised by making the emotional state of another commensurate and complementary with your own (2012: 19). This requires summoning and inducing the compatible feeling within oneself through various entraining strategies that serve to erase any sense of dissonance in oneself. That is, we adopt the techniques of ‘deep acting’ in order to cultivate the required feeling that renders our performances as sincere engagements with others, rather than merely managed veneers of displayed affect (Hochschild, 2012: 33-54). Hochschild’s ethnographic research across many spheres of emotional labour demonstrates that when a required act of emotional labour demands a great deal of the person who labours for another, a common method of erasing potential dissonance is to reframe the narrative of the subject for whom they labour. In this way the rude customer is reconfigured as someone who is perhaps under great stress, or that the disruptive child has a tumultuous home life, or that the senile, demented person
was once (and should still be recognised as) a figure of great stature, the central protagonist of a rich life narrative.

This custodial quality, the tending to another’s sense of narrative and feeling, is of great significance. Vittoria (1998), in an ethnographic study of a care facility, provides compelling evidence of this labour that goes well beyond the ‘bed and body’ (105) work we may erroneously think captures the totality of care for those with dementia. One example Vittoria gives is that of a former banker, now a resident in the care facility after the onset of dementia. This resident still adopts the habits and airs of his former vocation, and the staff duly play along in an ensemble of roles that would accord with this occupation (Vittoria, 1998: 112-3, 120-1). Such performative exchanges can provide the affirming co-creation of narrative through ‘identity work’ (Vittoria, 1998). This role playing – a quotidian form of ‘deep acting’ – by persons with dementia is quite common and variously encouraged due to its therapeutic benefits. Former administrators will be given forms to fill out, while those who were once homemakers may help with the upkeep of the facility (Cohen-Mansfield, Golander and Arnheim, 2000). One former store owner would even compliment her ‘workers’, the nursing staff (Vittoria, 1998: 110-1).

Given that emotional residuals within dementia can expand, loop, and then repeat upon themselves it can take only seemingly minor acts to shift dispositions dramatically. 30 Demonstrative of the importance of fostering positive encounters is a scene in Elizabeth is Missing where Maud wishes to report her friend Elizabeth as ‘missing’ to the police. The officer initially seems kind and obliging and indeed somehow already aware of Maud’s concern. Maud begins to feel ‘tears of relief’ knowing that her fears are being heard with seeming sincerity, but is soon dreadfully undone when it is revealed that the officer is cruelly mocking her:

“‘This’ll be the ... let me see ...’ he clicks at the computer a few times ‘... fourth time you’ve been in.’

Fourth time. ‘So,’ I say. ‘Is someone looking for Elizabeth already, then?’ I know as soon as the words are out of my mouth that it’s hopeless.

30 Schreiner, Yamamoto, and Shiotani (2005), for example, note the importance of structured recreational activity in care facilities as a producer of positive affect, whereas affectless or ‘null’ displays were 2.5 times more likely to be present at any given moment when residents were simply left to their own devices (see also Teri 1991).
He laughs. ‘Oh yeah. I’ve got every man on the force out. Sniffer dogs, forensics, flying squad. They’re all out there’ – he pauses to skim a hand through the air – ‘looking for your friend Elizabeth.’

I got hot at his words. My armpits prickle. I can see what he thinks of me now, and I feel sick. The tears spill over, finally, and I turn away so he won’t see them.”

Healey, 2014: 77

After this encounter the hurt lingers within Maud, despite the ‘plot’ of the event being forgotten within moments. The bad feelings continue to dog Maud, damming her into a depressive state. That this is callous treatment by the police officer is obvious enough. More precisely though, the instructive lesson here regards how feelings may be retained as incapacitating residuals. The cheap gratification of the policeman comes through a kind of emotional ‘dumping’ onto Maud (Brennan, 2004: 30). Yet in return for this mild spark to his perhaps otherwise dull day Maud must now contend with the depletion of her own sense of agency and volition that has occurred through an act of belittlement and mockery. There is a gross disequilibrium of feeling created here, for the pleasures enjoyed by the officer are surely not inversely equivalent to the distress felt by Maud, hence the resulting creation of an inert, residual feeling.

But note also that an emotional labour of care and recognition does not require ‘humouring’ or infantilising those with dementia, rather it simply requires the willing labour of constructing mutually according narratives (Lyman, 1988). Healey makes this clear in juxtaposing Maud’s depleting encounter with the police officer with a later scene, wherein Maud attempts to place a classifieds advertisement to aid her search for Elizabeth. In this scene the receptionist assisting Maud is well-meaning and patient, but mistakenly assumes ‘Elizabeth’ is a cat, resulting in a comical extended miscommunication. This is a carefully directed humour, grounded not in the disparaging of another but in two equal persons acting in good faith and mutuality, with results going harmlessly awry in ways that can be easily mended (Wade, 2015).

From the mutual translation of Ed and Connell’s hugs and knee pats, Ruth’s urge to prowl around her home and to be touched by another to confirm her corporeal presence, and Maud’s expressed desire for someone to recognise her concern for her missing friend, these novels demand of us that we open ourselves to the emotional labour that dementia requires, and to reconsider what such labour can tell us about neurological difference and wellbeing. We are called to recognise that maintaining the communicative flows essential to selfhood requires understanding that we are each the means and source of one another’s enlargement.
of self, and far less the author of our own, regardless of how ‘hypercognitive’ we believe ourselves to be.

**Conclusion – Rethinking recognition**

In the preceding chapters, I have interrogated the assumption that our potential to be ethical citizens is dependent upon ‘enhancing’ our higher cognitive capacities through interventions targeted at the neuronal level. This gaze both individualises and disaggregates the subject, handing over to them the responsibility to *intensively* optimise these substrates of the ideal citizen. Yet it would appear that a comparably imperative ethical challenge we are facing today is how we may ensure the best possible quality of life for the growing number of those who embody the seeming antithesis of the ‘hypercognitive’ society. This chapter, through highlighting the sensitive but evocative instruction provided by literary depictions, has suggested means by which the ongoing personhood of those with dementia may be better realised, while also supplanting unhelpfully fearful and abysmal conceptions of neurodegeneration. In part, these novels instruct us to focus less on a diminishing ‘hypercognitive’ status, and instead seek to cultivate and satiate the experiential self that remains. In turn, we might also reconsider the high value we place upon the hypercognitive subject as the measure of our ethical being.

Let us again recall here Pontius’ (1973) original interpretation of ‘neuroethics’, where walking devices used to aid newborn children may ironically result in long term consequences for developing the required neurological capacities for that very same motor function. Pharmakon-like, what was once a supportive crutch unwittingly resolves itself into a developmental hindrance. As noted at the start of this chapter, the array of causal factors that can result in symptoms of dementia are unlikely to abate in the foreseeable future. Yet, as discussed in the previous chapter, many of our efforts to avert cognitive decline and better realise our hypercognitive capacities can be defined by their perfectly antithetical qualities to constructions of the ‘demented’ subject, despite the efficacy of such ‘brain training’ remaining largely unproven. Perhaps, then, we might consider the Pontius possibility that we are relying on devices and scripts that loop into effect practices of care for the self that do not reduce our propensity to neurodegenerative disease. Instead, such an ethic may counter-productively heighten the dread associated with cognitive decline, and so render us all the more vulnerable
and ill-prepared to actually consider alternate possibilities of what dementia can instruct us with regard to the embodied and affective qualities of ethical wellbeing, and what efforts are required to induce such wellbeing for those in our care. As Sabat and Harré (1992: 460) mournfully observe, this unproductive dread

‘...is founded on story lines that paint the sufferer as inadequate, confused, helpless, etc., then that person will be so positioned and will have his or her behaviour interpreted by others in such a way as to confirm the initial story line and positioning. The ultimate result of such a situation is the fencing off of the sufferer so that no adequate self can be constructed. Perhaps it is not stretching the point too far to refer to such a situation as a species of self-fulfilling prophecy. Thus, if there is a loss of the capacity to present an appropriate self, in many cases the fundamental cause is to be found not in the neurofibrillary tangles and senile plaques in the brains of the sufferers, but in the character of the social interactions and their interpretation that follow in the wake of the symptoms.’

Of course, there is always scope to remain hopeful. Perhaps the prevalence of the various symptoms and knock-on effects of dementia will plateau or even decrease over time as preventative measures and stalling interventions become more efficacious. Yet it still remains likely that in the highly developed world the mechanisms of our final undoing will increasingly be entwined with our neurology, whether it be through already prevalent neurodegenerative causes, or through endocrine and pituitary dysfunction, lymphatic disorders, or a host of other neuropathic conditions. The interplay of neurology with environment in the varying manifestation of these conditions is stupendously complex, and so requires a model of neuroethics sensitive to difference, and less enamoured with ideal models. This would be an ethic of neurodiversity less concerned with ‘enhancing’ our species-unique capacities of rationality and higher cognition, but instead seeking a ‘common currency’ in what can be faithfully transmitted between subjects, of what can be mutually affecting across different modes of being. This aspiration will be further explored in the final chapter.

A brief anecdote to finish here: In a paper discussing the experience of caring for her dementia-suffering mother, the anthropologist Janelle Taylor (2008: 314-5) lamented how strange and misguided it seemed that when asked about her ailing mother the question was always a variant of ‘does she recognise you?’. Implicit within this question, notes Taylor, is also an assessment of whether her mother is in turn worthy of ‘recognition’ as an affect-desiring subject. Instead, Taylor argues, we should focus less on ‘recognition’ as a property of the high cognition capacities of the bounded individual subject, and instead embrace a model
of mutuality and reciprocity across greater neurological terrain. This seems a fitting way to conclude this chapter, for surely any kind of ethics worth having and defending will not be realised in the intensive labour of working upon one’s brain, but rather in extensive acts of transmission, in labours of reciprocity and mutual affirmation of being. What unites us all is not some lofty conception of our species-unique capacity of rational morality, but rather the desire for a narrative accord with the world, one that can only be realised through the co-constitutive efforts of others, who author us into being.
Chapter Five

Conclusion – Epistemological Humility in Service of an Expansive Ethics

‘Modern science’s relentless search for the base underneath mere appearances has given new force to the old argument. It has indeed forced the ground of appearances into the open so that man, a creature fitted for and dependent on appearances, can catch hold of it. But the results have been rather perplexing. No man, it has turned out, can live among “causes” or give full account in normal human language of a Being whose truth can be scientifically demonstrated in the laboratory and tested practically in the real world through technology. It does look as though Being, once made manifest, overrules appearances – except that nobody so far has succeeded in living in a world that does not manifest itself of its own accord.’

Arendt, 1981: 25-6

Introduction – Two visions

This thesis has sought to contribute to a burgeoning critical discourse that – while certainly not hostile to the cognitive neurosciences – looks to hold neuro-practitioners to account as their endeavours explore increasingly expansive properties of subjectivity and wellbeing at ever more intensive levels. My primary concerns centre around the observation that some efforts in empirical neuroethics result in flawed ‘moral spectroscopes’ that presume to have mimetically translated ethical conduct into the ‘brain terrain’, but in actuality merely harden highly socio-historically contingent idealisations of the ethical subject. My further concern regarding these developments is that we may lose a ‘conatic hope’ (Hage, 2003) found in not having the bounds of our ethical capabilities and other measures of wellbeing rigidly affixed in our molecular assemblies. We should remain wary of any ‘hyphen-ethnic’ (Žižek (2012: 110-1) that provides too-neat substantiality to that which has typically been ontologically elusive and socially negotiated.

Much of this critical analysis within this thesis also aims to offer new frameworks and conceptual tools by which the neurosciences might orient their inquiry, offered in the hope of avoiding the common pitfalls that emerge when attempting to translate lines of inquiry across multiple expanses of ontological and epistemological terrain. In this way myself and a growing number of these critical interlocutors from within the social sciences and humanities seek to

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become productively ‘entangled’ with the neurosciences, attempting to grapple with the dizzying complexities and possibilities that arise as we attempt to illuminate the wondrous intricacies of our cognition, however it may be distributed through brain, body, and the external world.

In the introductory chapter, *The Promise of the Brain*, I began with Latour’s anecdote of Paul Churchland’s unusual token of marital love: a passport-photo sized brain scan of his wife, the fellow well-known eliminative materialist, Patricia Churchland. Though eliminative materialism is less commonly invoked today, it is certainly not insignificant that Patricia Churchland was one of the key figures in the discipline-shaping ‘Neuroethics: Mapping the Field’ conference in 2002, and that a great deal of neuroethical inquiry is powered by the eliminativist belief ‘that the ontologically most fundamental level of explanation is by default the most appropriate one’ (Slaby and Choudhury, 2012: 30). This engenders equally fascinating and unnerving dilemmas if ‘morality’ is to be so reduced to its most ‘fundamental’ properties. Hence I raised concern with hard discourses informed by hypothetic-deductive models that purport to identify what qualities are ‘essential’ to our species-being and ‘imperative’ to maintain or even enhance, all so that we may become *more and better* ‘human’. In this way emerging claims from neuroethics regarding the ideal subject may fold back onto us as ethical injunctions, where technologies and techniques of caring for the self may now include cultivating a prescribed neurological disposition towards the world. I thereby suggest that we should look to trace these ‘recurrent histories’ (Canguilhem, 1988) and lines of ‘historical ontology’ (Foucault, 1984; Hacking, 2002: 1-26) with a watchful eye, noting how knowledge claims are variously produced and then folded through assessments of our conduct. By adopting this critical stance we may craft means by which to think *against* the present (Rose, 1996: 18), and so illuminate how the frames, gazes, and rhetoric of scientific inquiry contribute to the ‘making up’ of subjects (Hacking, 1985). Additionally, I posited that we should look to interpose a sociological perspective that strives not only to expose epistemological overreach, but also to contribute to ways in which the neurosciences may be productively integrated with neighbouring disciplines similarly concerned with the self, subjectivity, and wellbeing. To this end I provided a literature review of the recent work of those scholars looking to become ‘entangled’ with neurosciences, including from those within the new field of Critical Neuroscience, to social scientists and humanists willing to work in interdisciplinary territory, and philosophers and critical theorists who seriously consider what cognitive neuroscience may offer to their own endeavours.

In *Moral Spectroscopes and Synaptic Ledgers* I endeavoured to trace the emergence of neuroethics as a sub-discipline, providing a discourse analysis beginning with the 2002
'Neuroethics: Mapping the Field' conference up to more recent manifestos espousing how the field may inform assessments of ethical conduct. This chapter was especially interested in a small but ambitious cadre of neuroethicists who proclaim – in both academic and lay contexts – that their field may lead the way to a ‘second Enlightenment’ by revealing our ethical constitutions at the neurological level. By reducing the complexity of ethical thought and behaviour to the ontological ‘common currency’ of their differing activation in the brain, these advocates posit that a rigourously-defined ‘universal ethics’ might be revealed through an epistemic privilege to which they lay claim. Yet, given the looping effects of assessments of our ‘essential’ human qualities, such endeavours threaten to have greater effects in their propounding to wider society rather than through the actual validity of their findings. Moreover, I argued that some neuroethical experimental constructs are laden with false categorical neatness unbefitting the import and complexity of the properties they seek to measure, thereby risking hardening and reifying what is merely the ‘popular prejudice’ of today. This Nietzschean-inspired critique concludes the chapter, warning against mistaking the contingent tributary for the universal property by attempting to force ‘consequentialism’ and ‘deontology’ down the translational chain into our neurology, thereby further corrupting that which is already in need of repair.

Not Fit for Purpose? followed neuroethics out of the lab, observing how neuroscience-based claims – particularly through ‘hard’ transhumanists who propose that we consider neurologically ‘enhancing’ ourselves in this age of global manufactured risk – have sought to translate the knotty and elusive debates around our sense of meaning and wellbeing into precise, technical, and rigidly demarcated measures of the ‘ideal’ citizen-subject. However, even when packaged in the pleasurably virtuous play and low-intensity interaction of ‘brain training’, I have argued that such creeping personal ‘responsibilization’ combined with the ‘marketization’ of life (Rose, 2007: 4) may prove to be burdensome, for these appeals come laden with ethical injunctions regarding how the ideal subject stands in relation to their value-bearing cognitive capacities. In response I conclude, with reference to posthumanist thought of similar inclination, that some humility and rapprochement is needed given our still meagre understandings of neurological being, notwithstanding the accompanying risk of what lines of inquiry may be lost if we too hastily and rigidly set down narrow epistemological paths. This caution is especially necessary in weighing up calls for ‘neuro-enhancement’, against which I have argued that we may unwittingly diminish potentialities for new modes of ethical being if we are unsparingly subjected to a ‘hard’ transhumanist regime of neuro-enhancement that comes a priori packaged with presuppositions of the ‘good citizen’. Alternatively, I have suggested that rather than insisting on current notions of enhancement, we should open lines
of inquiry towards the *enchancement* of subjectivity, humbly acknowledging that we are still so very far from truly understanding the interplay of cognition and ethical wellbeing, but daring to explore entanglements beyond current classically humanist conceptions.

Finally, the preceding chapter, *Dementia in a Hypercognitive World*, aims to make a contribution to this productive entanglement by noting the instructive ways in which novels that explore the lived experience of dementia can serve as both helpful advocacy efforts and experimental aids in realising new models of ethical interaction sensitive to neurodiversity. Concurrently, these texts might also lead us to reconsider the perhaps damning burdens and looping stigmas we place upon ourselves and others in acquiescing to creeping prescriptions of care for the neurological self, prescriptions that result in Sisyphean labours ill-fitting to both more humane and pragmatic considerations of cognitive decline and overall wellbeing. Such considerations of a more expansive neuroethics may entail a shift away from morality-in-a-vat experimental models and applications, and instead towards co-constitutive and distributed understandings of wellbeing.

Rather than further recapitulate the entire thesis as it has progressed, however, I would like to continue this brief summing up by outlining two visions of the brain, each presented in public settings by prominent figures of neuroscience. These two visions helpfully capture some of the current ambitions and conceptual ambiguities this thesis has addressed, particularly as they relate to the promise of better realising our collective wellbeing through our neurology, and how such hopes are enjoined upon lay subjects. However, in response to these intensive gazes oriented to expansive visions – which I have critiqued throughout this thesis, particularly those that fold into ethical injunctions levied upon the individual subject – I would like to briefly offer four means by which we can resist slipping into these rationales. These four trajectories are offered in the hope that we may open up a conceptual space in which, rather than configuring the subject by attempting to trace external phenomena as they are so determined to pass through the brain, we instead further explore the possibility that the brain is merely one site through which the constitutive qualities of the self, agency, and volition pass and leave measurable traces. I am not the first to expound this kind of view, but I at least hope that this thesis has contributed to helpfully questioning the growing tendency towards pinioning our hopes on the brain as the formative site of our wellbeing. This affixing risks creating a looping effect of hyper-reflexivity, wherein our labours upon this terrain disaggregates the self into essentialised functions that obscures their socio-historical contingency, and so inadvertently risks atrophying potential lines of inquiry in rethinking the neurological subject.
Here, for example, is one vision of an intensive gaze directed to expansive ends, framed in a way that invites hasty over-determination and ontological atrophy. Notable neurophysiologist and public intellectual Baroness Susan Greenfield has often invoked a reading of the brain that is extremely localised with regard to otherwise expansive and elusive concepts of subjectivity, agency, and wellbeing. Here is a customary example of this view from Greenfield (2013), framed around her experiences of studying neuroanatomy at Oxford, and sourced from a public lecture given at the University of Melbourne:

‘You put your hand in this bucket ... then you hold a human brain in one hand. And I remember thinking if I wasn’t wearing surgical gloves, and a bit, for some reason, just lodged under my fingernail, would that be the bit that somebody loved with? Would it be a habit? Would it be a memory?’

Here the brain is framed as a site of intensively localised fragility, a fragility not simply of delicate organic matter (vulnerable, in this case, to the hard organic matter of the careless, keratinous fingernail), but of highly abstracted qualities of selfhood vulnerable to minute acts of material destruction.

Contrast this with a second vision, this time presented by neuroanatomist Jill Bolte Taylor (2008a) in which, during a TED conference – so often the venue for this kind of ‘third culture’ evangelism31 – Taylor spoke of an epiphany she experienced whilst undergoing the strange and rapid ontological refigurations that often occur during the onset of a brain haemorrhage. Following the initial stroke, Taylor found herself ‘inside of a silent mind ... I could no longer identify the boundaries of my body, I felt enormous and expansive. I felt at one with all the energy that was, and it was beautiful there’. Taylor described this brief period as one of ‘euphoria’ and ‘Nirvana’, and in that moment contemplated whether she would ‘ever be able to squeeze the enormousness of myself back inside this tiny little body’.

But it is curious to note that her subsequent call to better recognise the ‘life-force power of the universe’ – a force both constitutive and independent of us – was ultimately packaged within the brain and its (dys-)function. The expansive vision was thereby drawn back to the intensive gaze. It is not insignificant that during an early part of Taylor’s TED talk an actual brain with attached spinal cord was presented for her to hold (echoing Greenfield’s emphasis on the vulnerable physicality of our selfhood, of the brain as the delicate container of our being). While holding the brain Taylor spoke briefly on the hemispheric lateralisation of brain

31 Indeed design theorist Benjamin Bratton (2013) has described the TED format as ‘middlebrow megachurch infotainment’, with content that is both over-simplified and over-promissory in ways that may prove unproductive and even harmful.
function, and invoked the common metaphor of the left hemisphere as a serial processor and right hemisphere as a parallel processor. The brain is onstage for less than two minutes, and as an instructive prop is certainly not essential to the talk in any direct way, but nonetheless its unassuming physical presence (held in one hand) is given to be the fragile terrain upon which we may discern that which makes life worth living. Specifically, the two hemispheres were framed by Taylor as contesting mechanisms of figuration: the left giving a sense of our boundedness and separateness from the world, while the right seeks communion and commensurability with the world. For Taylor, her stroke briefly placed her left hemisphere into an ‘offline’ state, leaving her with a state of consciousness in which she felt herself as entirely permeable with the external environment (hence the comparison to a place of Nirvana). According to Taylor, this state of being holds great promise, for ‘the more time we spend choosing to run the deep inner-peace circuitry of our right hemispheres, the more peace we will project into the world, and the more peaceful our planet will be’. Taylor’s (2008b: 140-177) call to ‘step to the right of our left hemisphere’ is perhaps heartening given that it comes from a neuroanatomist seeming to reach across the two cultures divide, though the proposal is not theoretically detailed or otherwise insightful in how we might enact such an ethic. Still, there is promise here in the attempt to unstick volition and wellbeing from its typical reference points.

Ultimately, however, both of these visions are concerning, for they are narrowly intensive and naively expansive. In these performative events of science communication the brain terrain has been stretched to house ideals of ‘love’ and ‘Nirvana’, and portrayed as wholly containing of these states, such that these elusive properties take on a hardness unbefitting their negotiated emergence. While we may admire the willingness and enthusiasm of these communicators in presenting neuroscience-informed views that countenance such otherwise intangible properties of wellbeing, we should remain wary of looping into effect practices whereby we look with reverence to the brain as an iconographic designate to which we accord ourselves in search of the ‘good life’. While Joshua Greene (2008: 38, see Chapter Two) may suggest that moral philosophers do not recognise that their long-debated stances are actually better explained as ‘psychological natural kinds’, we may in turn reply that perhaps neuroscientists are on epistemologically shaky ground in conflating ‘love’ with a substance that can fit under the fingernail, or of ‘Nirvana’ with an untethered right hemisphere. These qualities of the interpersonal and the transcendental require an epistemological humility, lest we reconstitute them in corrupted forms through our translational haste. It is against these

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32 Which tends to be far more complex and nuanced then is commonly understood (see McGilchrist, 2012).
well-meaning but overreaching visions – along with the neuroethical ‘imperatives’ and ‘hypercognitive’ ideals traced throughout this thesis – that I offer four ways we can productively resist and reorient approaches to our neurology.

Resisting the brain as the silo of self, ethics, and wellbeing

This thesis opened with the vignette of Paul Churchland’s unusual wallet token of affection, one which depicted his wife Patricia through a brain scan in lieu of the typical portrait. Such a gesture speaks to a sweeping ontological claim, whereby all that we deem to constitute the self can ultimately be contained within the brain. Such bald-faced eliminative materialist claims are seemingly not as prevalent as they were when the Churchland’s first propounded their model, but I have argued that broadly similar stances are now returning in new form through a particular vein of empirically-oriented neuroethics. This form of neuroethics – which embraces experimental models in order to trace ‘morality’ as it is molecularly realised in the brain – positions itself as the authority by which we might epistemologically ground endeavours towards illuminating a ‘universal ethics’. In this way neuroethics threatens to become part of that disciplinary ‘vortex’ Emily Martin (2000: 574) attributed to the cognitive neurosciences more broadly, sucking in all other lines of inquiry under their irresistible epistemic pull. In this case, the vortex may come to claim the ongoing debate of millennia, pulling the assessments of wellbeing, right thinking, good action, and fellow feeling – and whatever else we might house under ‘ethics’ – into the brain terrain, where neuro-practitioners will exercise an epistemic privilege, and where we in turn may come to look to our brains as the primary site upon which to better realise our capacities for virtue.

I have argued that we should resist these attempts to produce morality in a vat, for the epistemological assumptions and subsequent experimental models that have resulted in wide-ranging claims are highly questionable, visualising our morality within contexts of such ‘irreality’ (Rose and Abi-Rached, 2013: 78) that it threatens less to arrive at objective and definitive understandings of the moral subject than to rather produce this subject through the implications of their constructs and the effects of propounding their results. Moreover, the very idea of the individual subject (and now his/her brain) as the most meaningful reference point of assessing ethics is wrapped up in recent socio-historical developments in governmentality. To not recognise the contingency of these developments in neuroethical research would be to stubbornly affix ‘ethics’ to constructs unlikely to hold still, thus inviting
the prospect that current neuroethical transhumanists may find themselves defending an idealised subject as equally nostalgic and unrealistic as that for which many classical humanists currently find themselves disparaged.

In response, throughout this thesis I have gestured to those theorists – who I would suggest share a broadly ‘anti-humanist’ stance – who propose that a subject ‘worthy of our present’ (Braidotti, 2013: 52) must be recognised as the entanglement of multiple ontologies, valences, and volitions through which ‘ethics’ circulates in exchange with surrounding contexts. Finally, in addressing the vitalising labour of co-creating narratives for those living with dementia, I have outlined an ethical practice less focused on cultivating certain desired interior dispositions, and instead points to the recognition of mutual world-making. Our interactions author each other into (or out of) an affirming state of selfhood, and thus our sense of wellbeing is far less dependent on (a largely Sisyphean) ethos of neuroasceticism than others may like us to believe. This critique thus leads into the second recommendation I offer, arguing against the translational imperative to become ‘hypercognitive’.

**Resisting translational imperatives and the injunction to become ‘hypercognitive’**

Throughout this thesis I have provided examples of a general distrust felt amongst ‘hard’ neuroethicists and transhumanists of affective and emotional volitions, and their accompanying aspirations to enhance our ‘species unique’ quality of rationality. These aspirations are motivated in part by claims that we are ‘unfit for the future’, ill-equipped as citizens to collectively face global problems of risk, and so in need of ‘moral enhancement’ at the neurological level (Persson and Savulescu, 2012). We are construed as failed subjects, with dispositions wedged between the violent, narrow-minded capacities of our primitive ancestors and the inability to cogently reckon with the magnitude of our global interdependence, and therefore need to be actuarially managed through sociobiological rationales. In turn, and parallel to critiques already noted above, I have explored the question-begging quality of such proposals in their presumption to know what would constitute ‘moral enhancement’, along with noting the irony by which such a proposed regime of moral enhancement threatens to undermine some of the very same liberal-democratic principles these proponents so ardently seek to defend.

Translational imperatives also manifest themselves at a less intrusive (but no less ethically salient) level through various ‘soft’ discourses of neuroscience, where popular texts, public
intellectuals, institutions, and consumer products and services espouse the promise of neuroscience in almost evangelical tones, enjoining us to harness the possibilities housed in our ‘neuroplasticity’. Although ‘training’ your brain may do little at the neurological level (at least, not in the way that it is claimed to be efficacious), the accompanying ethical appeals embedded in these forms of virtuous play certainly contribute to entraining a particular kind of subject, who thinks of themselves as hypercognitive, always improvable, and that this willing labour shapes one’s virtue and their propensity to extract the most from life.

Finally, these translational imperatives of the neuro are also increasingly found in policy development, and while the rhetoric of these texts is generally more measured the expectations often remain simultaneously ambitious and blinkered. Such output is characterised by the proposing of practical applications that perhaps run ahead of plausibility, and are frequently justified by mobilising both the empirically ‘hard’ and persuasively evocative qualities of neuroscience, particularly through the epistemic appeal of brain imaging (Broer and Pickersgill, 2015a). Through this turn of social policy to the neurosciences the brain is framed as a site of optimisation, self-governance, and vulnerability (Broer and Pickersgill, 2015b), but when such policies are applied naively through mechanisms of the state harmful outcomes can result (Edwards, Gillies and Horsley, 2015).

Altogether, these imperatives entail the expectation that we must – as aspiring citizens who wish to accord ourselves to prevailing norms – wrestle control over our rebellious psyches, deferring to epistemic authorities in how we should conduct this neuroasceticism, and also when our various differences require the consoling solidity of those specialised techniques by which our neurological makeups are rendered ‘visible’. We increasingly appear to desire an authority whereby our flaws and shortcomings are rendered at a level below the self – and so partially absolving – but are alleviated through the encouragement towards certain personalised practices of self-care (which in turn serves as a display of one’s virtue). In this way our ethical conduct is relocated into the neurological terrain.

This translational haste may foreclose as yet unseen ways of imagining our neurological being, a haste in part resulting from the ‘chasing’ of scientific solutions to contemporary social problems (Rapp, 2011). We should resist becoming swept up in a totalising logic of the brain as a new site for an ‘accumulation strategy’ (Harvey, 2000). Such strategies promise the realisation of greater personal freedom, autonomy, and the utility derived from pushing our brains in search of perpetual growth. But to accord ourselves to the narrow parameters of where ‘value’ is conferred today would also be to align ourselves with a crudely functionalised ‘Brain Profile’ – as evident in popular brain training programs – that is ultimately unbefitting of
our potential. Instead, we must humbly admit that we do not know how best to be ‘plastic’, for to make such claims forecloses the possibility of en\textit{chancement}, whereby in resisting contemporary contingencies we may open new spaces in which cognition may traverse. Perhaps it would be timely, then, to again recall the original coinage of neuroethics, when in 1973 Anneliese Pontius raised concerns that devices used to aid babies in walking were actually inhibiting the development of the motor functions required to walk unaided. This cruel irony – and the further irony that contemporary neuroethics has largely eschewed and then forgotten this initial framing of the field – should compel us to be sensitive to what artefacts and prescriptions we integrate into our functioning as ideally ethical subjects, for they may prove self-defeating in ways not intended.

\textbf{Embracing transdisciplinary entanglement and ‘play’}

I have been sharply critical of some neuro-enthusiasts throughout this thesis, chiefly those who I claim are practicing a hasty and overdetermined reductionism that may take great effort to deconstruct once it is rigidly ‘looped’ into our self-construction. That said, great promise lies in recent and future transdisciplinary efforts between the neurosciences, the social sciences, and the humanities. Their continued success, I believe, will rely upon leaving open a space for collaborative efforts characterised by a sense of ‘play’ (Balmer, 2013). By ‘play’ I do not mean that these undertakings should be shot through with a sense a fun and levity for – as Callard and Fitzgerald (2015) note in their very recently published \textit{Rethinking Interdisciplinarity} text – these risky endeavours are often beset by asymmetries of power, discomfiting ambivalence and ambiguity, the wearying ‘housework’ required for setting the scene for collaboration, not to mention the emotional labour necessary to hold these fragile collectives together to fruition.

Rather, ‘play’ is meant here in the sense that – in contrast to prevalent hypothetico-deductive models – we should not presume to pre-emptively know or otherwise narrowly delimit what we may ‘discover’. This is the kind of cautious play that humbly recognises that our paucity of knowledge – notwithstanding the undeniably spectacular developments in the neurosciences in recent decades – entails that the most regrettable thing to do now would be to solidify exactly how elusive and contextually nuanced properties may be rendered ‘visible’ through the brain. Admittedly, to uphold such a sense of ‘play’ in an experimental setting invites a paradox of sorts, for the very mobilisation of certain disciplinary actors and specialised technologies
sets in motion what ‘reality’ may be made apparent through given means of translation (Latour, 1999). There is also no doubt that these efforts will frequently result in working tensions and experimental ‘failures’ that some may find galling, but these discomfiting entanglements and their resulting output may nevertheless prove instructive, and should not be dismissed for their lack of neatly packaged research outcomes (Fitzgerald et al., 2014; Littlefield et al., 2014). By diligently gesturing towards ‘play’, then, we may stay alive to chancing upon new ways of drawing the neurological out of the confines of the cranium.

With this aspiration in mind, here is perhaps the best place to address the limitations of this study overall. Firstly, it must be acknowledged that my accounts and critiques of some neuroethical scholarship and related calls for neuro-enhancement are largely synthetic discourse analyses, and so are perpetually stuck in a position of ‘catching up’ with knowledge production as an attempt to shape future lines of inquiry, rather than being an agent operating directly at this epistemological coalface. Also, space limitations do not permit a thorough socio-historical outlining of various scientific models of the ‘ideal citizen’ since modernity, of which Joshua Greene’s moral dilemma and fMRI-based claims constitute one of the latest iterations. Similarly, while there is a great deal of posthumanist thought cited in support throughout this chapter, there is a lack of new materialist interventions in a space where they are arguably well suited. Though I do not wish to absolve myself of the failure to incorporate this potential for a more radical contribution to the neuro-turn, I can only point to the difficulty of traversing from, for example, the unflinchingly ‘practical’ ethics of scholars like Julian Savulescu to the knotty demands of poststructuralist thought, whilst always maintaining a coherent throughline accessible to readers across a variety of disciplinary backgrounds.

Along similar lines, though the thesis could have stood on its own without the addition of Dementia in a Hypercognitive World, I was reluctant to leave this study as a largely negative, reactionary response to work in and around neuroethics that I still hold a begrudging respect for, if at times only for its sheer audacity. Instead, with the limited resources at my disposal, I wanted to offer an approach that would simultaneously: contrast sharply with the ‘ideal’ neurobiologically-inclined subject envisioned by others; remain loosely within the same methodological gamut of close textual analysis; link current theoretical debates around the constitution of ‘ethics’ with practical and urgent discussions of ‘advocacy’; and finally also contribute to interdisciplinary ‘play’ with ‘entangled’ phenomena. I remain sensitive to the supposition that perhaps an alternate ‘entanglement’ could have been offered, one perhaps not reliant on the inescapably speculative quality of fictional accounts. Nevertheless, due to restrictions of access and resources this delve into Oliver Sacks-inspired ‘romantic science’ (see
Wade, 2015) was deemed necessary as a means of offering a positive original contribution to complement the thorough disciplinary interrogation that preceded it.

With these admissions in mind, my own contribution to this interdisciplinary ‘play’ has been through pointing to the ways in which creative works of fiction may elucidate new ways of exploring the subjectivity of dementia, and open up parallel paths to currently prevalent neuroscientific discourses regarding function and difference. Fictional works, and novels especially, can explore aspects of interiority unavailable to other textual forms, and so when complemented by thorough insight and sensitive rendering can produce narratives that are gently but persuasively instructive, suffused with consolation and affirming empathy. These fictional works stoke within us the willingness to make Ricoeur’s ‘wager’ (1967: 355) of entering into psyches of alterity, and finding therein a form of ‘restorative’ and ‘reparative’ criticism that contributes to the broader movement of neurodiversity, a diversity enacted not simply in the sense of improving the quality of care we provide to those who are neurologically atypical. Rather, this neurodiversity recognises that sound ethical practice does not require intensively tilling and toiling over one’s arable brain terrain in the hope of improving the productive yield of the self, but instead is achieved in far less inward-looking and far more urgent task of seeking ways in which the expressive desires of others may be better realised, however far from ‘hypercognitive’ such expressions of mutuality may appear.

Embracing the polyphenomenality of ethical being

In the epigraph that opens this final chapter Hannah Arendt speaks of our ‘relentless search for the base underneath mere appearances’, yet we find ourselves nevertheless compelled to overlay certain orienting constructs to make this ‘base’ phenomena meaningfully manifest. Similarly, we look for those ‘human kinds’ to match the ‘natural kinds’ of the world, immutable laws of our being by which we can orient ourselves (Hacking, 1995). But this affixing of the human subject is often a fraught task, for we are endlessly reflexive and porous beings, and thus we cannot make manifest ‘essential’ properties of our being in ways perfectly cleaved from the world without rendering them hollow, corrupted, and lacking in meaning. Indeed, as I have shown, when we attempt to do so we risk propounding understandings of properties like ‘morality’ that loop into a diminished perspective of ourselves. Flawed neuroethical ‘spectroscopes’ that purport to hold objective rigour results in the misleading ledger of measuring morality in a vat, generating output ‘from which humanness is abstracted, yet
nevertheless claims to represent it’ (Cohn, 2004: 70-1). This neat cleaving envisages the brain as an overdetermined space that flattens contingent and socio-historically negotiated qualities of being into inert material states. Perhaps, given the focus of this thesis regarding the attempts to bound ethics in neurological terrain, we can instead envision a means by which the neurosciences – amongst other epistemic actors and spaces – can contribute to an effort towards rendering ‘ethics’ manifest in new forms, of considering ethics in ‘polyphenomenal’ terms (Rabinow, 1996), rather than simply the practice of the rational, hypercognitive modern subject. In the 1999 (272) afterword to Governing the Soul Nikolas Rose posed:

‘… at least as an experiment of thought, the question of what an ethic of existence might be that did not refer itself to that psy shaped space which has been installed at the heart of each modern individual. Could one not imagine another kind of freedom, whose ethics were resolutely ‘superficial’? An ethics whose vectors did not run from outer to inner, and did not question appearances in the name of their hidden truth, but which ran across the outsiders, between, among persons, where subjectivities were distributed, collective and oriented to action? An ethic, that is to say, that did not seek to problematize, to celebrate or to govern the soul?’

For now, our ongoing intensive gaze into the modern subject – at least through neuroethics and related fields – seems to be moving away from this proposal to untether ‘ethics’ from the individualised citizen-subject. Too often it seems, across both the hard transhumanist and more bioconservative stances, ethics is still framed within broadly humanist perspectives, dragging along with them conceptions of the ideal subject they seek to more securely buttress through essentialist appeals. But, as noted by Foucault (1988: 15) earlier in this thesis, it is likely that there are ‘more secrets, more possible freedoms and more inventions in our future than we can imagine in humanism’. To realise these secrets, freedoms, and inventions requires a humble willingness to not immediately look to the brain as a solution for contemporary problems. Therefore, to channel a line of thought stretching back to Spinoza, we must humbly acknowledge that we do not know what a body can do, nor do we know what a brain can bring into its phenomenological purview. Neither do we understand how various intentions and volitions are distributed through brain and body, along with the agents with whom we interact, and all those other actors, artefacts, and forces of the external world. Amidst these wondrous possibilities, we should hope that ‘ethics’ may amount to more than an intensively functionalised reading of our neurology, but rather is realised as an expansive, expressive, and polyphenomenal property, coursing through the world.
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