

**Deeply Religious Nonbelief:
Countering the Affective Case against Naturalism
with Embodied Cognition**



Matthew Callum Pritchard
Harris Manchester College
Faculty of Theology and Religion
University of Oxford

A thesis submitted for the degree
Doctor of Philosophy
26th May 2021

ACKNOWLEDGEMENTS

This thesis is dedicated to my parents, who nurtured a love of learning while ushering me into more direct encounters with life's wonders, human and nonhuman. If I am answering a call, you amplified its voice.

The whole process was a marvellous journey, but one made while managing a full-time job and raising a young family. I would like to thank my wife and children for tolerating daddy's interminable cognitive adventures.

Having multiple commitments, and not being resident in Oxford, I missed numerous opportunities to cross paths with fellow students who would doubtless have enriched my project. However, I am grateful to Stefani Ruper, with whom I enjoyed several fascinating conversations about religious naturalism while she was completing her own DPhil. I also benefited on many occasions from the cheerful support of Sue Killoran and Niall Sheekey, the librarians at Harris Manchester College.

A quest often features divine helpers. I was fortunate to have two supervisors who embodied this archetype, intervening at perilous moments with what seemed to be almost supernatural powers. I would like to thank Graham Ward for his unfaltering encouragement and positivity and for access to a dazzling intellectual arsenal. And I am indebted to Donovan Schaefer for his brilliant academic surgery, his uncanny ability to pinpoint what I could not, and for the moments when he illuminated the way ahead. You both guided me to distant shores more strange than I had imagined, and if I have still fallen short, the responsibility is mine.

CONTENTS

Short Abstract	5
Long Abstract	7
Introduction: The Affective Case against Naturalism (ACAN)	15
PART I: THEORY	
Chapter 1: The History of the ACAN and the Roots of Religious Naturalism in James, Dewey, and Santayana	25
Chapter 2: From Parts of the Brain to the Brain as a Part: The Integration of Thinking and Feeling in Affective Embodied Cognition	60
PART II: APPLICATION	
Chapter 3: Countering Alienation (I): Elevating the Material through Embodied Naturalist Imaginaries	115
Chapter 4: Countering Alienation (II): The Coexistence of Explanation and Wonder	172
Chapter 5: Countering Demotivation: Inhabiting a Naturalist Epic	219
Chapter 6: Countering Oblivion: Material Configurations in the Light of Stellar Affectivity	271
Conclusion: Shaking the Grass	308
Bibliography	327

LIST OF ACRONYMS

ACAN: The Affective Case against Naturalism

AEC: Affective Embodied Cognition

EC: Embodied Cognition

RN: Religious Naturalism

SHORT SYNOPSIS

The Affective Case against Naturalism (ACAN) claims that naturalism cannot be emotionally satisfying. I argue that Religious Naturalism (RN) is concerned with developing meaningful myths founded on mainstream science; that my concept of affective embodied cognition (AEC) has an enabling role in that process; and that in doing so AEC overturns the ACAN.

The ACAN has deep roots but emerges starkly in critiques of the ‘disenchantment’ of modernism. It is challenged explicitly by RN, which owes debts to William James, John Dewey and George Santayana. I define AEC as a combination of ‘4EA’ cognition, embodied metaphor and embodied simulation, and build a model for analysing the affective processes engaged when consuming texts.

I show that AEC can counter the purportedly alienating character of scientific explanation by analysing the work of David Abram, and evaluate affective engagement with nonhuman entities. Abram exemplifies *naturalist imaginaries* that *elevate the material*, participating with the unseen and indeed unsensed. I then demonstrate how *toggling* between two distinct forms of *attention* dissected by Iain McGilchrist reveals how wonder and explanation can co-exist.

I concur with Mary Midgley and Lisa Sideris that scientific theories do not disclose specific human purposes, but show that once a purpose is chosen, AEC offers opportunities to align readers behind it. I also demonstrate that while some RN narratives are anthropocentric, alternative *narrative plots* with various affective topographies are available.

I review naturalist strategies to ease death anxiety, suggesting that the relation between direct perception and embodied simulation involves *isomorphic material configurations*. These entail imperfect reconstructions of those absent and their experiences. Finally, I propose that the origin and identity of all life on Earth in a supernova can be blended with the affectivity of the stellar, such that stars can serve as a *focaliser* upon which numerous naturalist ideas can hang.

LONG SYNOPSIS

One of the arguments offered for God's existence - or at least against non-belief – comprises a collection of criticisms that I call the Affective Case against Naturalism (ACAN). It claims that a philosophy confined to the natural order cannot be emotionally satisfying. My overarching argument is that Religious Naturalism (RN) is fundamentally concerned with developing meaningful myths founded on the discoveries of mainstream science; that embodied cognition (EC) has an important role in enabling that process; and that in doing so EC overturns the ACAN. Because of the affective preoccupation of the ACAN, I focus particularly on what I label affective embodied cognition (AEC), a cluster of academic fields that study the integration of thinking and feeling.

In the Introduction I break the ACAN down into three strands that I label the Problems of Alienation, Demotivation, and Oblivion. The Problem of Alienation encompasses a number of critiques. There is the need to live with doubt, since scientific models must forever remain provisional. There is the lack of anything to compare with the pageantry of traditional religion in its literary, artistic, architectural and ritual dimensions. Most damaging, though, is the supposed character of scientific explanation – its pallid abstractions and detachment - and the wonder-sapping power of explanation *per se*.

The Problem of Demotivation follows from the argument that scientific knowledge cannot provide values, and can be encapsulated by Steven Weinberg's suggestion that 'the more the universe seems comprehensible, the more it seems pointless.'¹ The universe understood

¹ Steven Weinberg, *The First Three Minutes* (Toronto: Bantam Books, 1983), p.144.

naturalistically offers no authentic story in which we can play a part, and even where it claims to achieve this, there is no convincing case that humans have a special status.

The Problem of Oblivion highlights naturalism's failure to alleviate the world's horrors or offer an afterlife in which we might be saved. There is neither divine assistance nor a guarantee of ultimate justice. Naturalists have nothing to compare to the prospect of seeing our loved ones again.

It would be possible to confront the ACAN using a traditional, linguistic approach, but its affective preoccupations lend itself to a deeper analysis of the relationship between ideas and emotions. I therefore focus on AEC and explore its potential in a constructive, intentional fashion, seeking to bring RN into conversation with scholars of AEC.

Part I establishes the theoretical framework, and comprises Chapters 1 and 2. In Chapter 1 I trace the history of the ACAN: it has firm roots in Romanticism and in the Victorian era, but emerges starkly in critiques of the 'disenchanting' impact of modernism by authors such as Max Weber and Charles Taylor. These narratives are simplistic: 'enchantment' has continued in many forms, as illustrated by Jane Bennett and others.

The authors who most comprehensively – and often explicitly - challenge the ACAN usually self-identify as religious naturalists. RN is 'a movement that asserts the possibility and desirability of a robust religious/spiritual life without recourse to the supernatural, whether deity, soul, or heaven.'² The three philosophers widely cited as forefathers of today's RN are William James (1842-1910), John Dewey (1859-1952) and George Santayana (1863-1952), who variously

² Donald A. Crosby and Jerome A. Stone, *The Routledge Handbook of Religious Naturalism* (Abingdon and New York: Routledge, 2008), p.7

sought to unify scientific convictions with the possibilities of idealism, myth and those experiences justifiably termed religious.

William James bequeathed to current RN a focus on experiences deemed religious rather than particular beliefs, and RN follows James's pragmatist concern with adopting socially and emotionally valuable philosophies. Believing that life was meaningful would be more likely to lead a meaningful life, and vice-versa.

John Dewey's distinction between *religion* as explicit belief and *religious* as a quality of experience is too abrupt in the light of recent scholarship such as Graham Ward's distinction between propositional and dispositional beliefs. However, I concur with the general thrust of his argument based on affects having a certain ontogenetic and phylogenetic primacy as against propositional beliefs, and that he thereby offers an interesting hypothesis as to whether epistemologically austere forms of naturalism might yet be compatible with attitudes and sentiments deemed religious.

The significance of Santayana's position is that he combined a Jamesian celebration of the positive consequences of ideals with more Deweyan naturalist convictions. His most important contribution to RN was the potential fusion of the real, understood naturalistically, and the ideal. RN owes a debt to Santayana, namely his understanding of how ideals are commonly cast as, and elaborated in, our myths and stories and their associated imagery.

In Chapter 2 I defend Mark Johnson's claim that 'Coming to grips with your embodiment is one of the most profound philosophical tasks you will ever face.'³ EC entails the

³ Mark Johnson, *The Meaning of the Body: Aesthetics of Human Understanding* (Chicago and London: University of Chicago Press, 2007), p.1

transition ‘from parts of the brain, to the brain as a part’:⁴ the brain is a part of the body, and the body is in turn part of an ecological - indeed cosmic - network. EC upsets many inherited Cartesian notions of mind-body separation, but also disrupts the common tendency to oppose thinking and feeling.

Specifically, three strands of EC are important for my purposes because of how they engage affects. The first is so-called ‘4EA,’ which argues that all cognition is not only embodied, enactive, embedded and extended (4E), but affective (4EA), a position with early intimations in Hume and Darwin, and elaborated more recently by scholars including J. J. Gibson, Antonio Damasio and John Protevi. The second is the work on embodied metaphor, associated most closely with George Lakoff and Mark Johnson, which exposes how the body and its movements shape and constrain abstract thought. The third concerns embodied simulation, which understands the imagination to comprise the ‘offline’ or ‘decoupled’ use of the same perceptual, motor and emotional systems that are used in direct experience. In aggregate I call these strands affective embodied cognition (AEC).

Taken together, these strands also constitute the ‘fullness’ which thinkers including Charles Taylor, Jane Bennett and Ezra Pound use to denote desired states that might befit the term ‘religious.’ ACAN advocates suggest that naturalism is incompatible with such states, so I use these strands of AEC to propose a model for analysing the affective processes are engaged when we consume RN texts. This is an original approach: those who have applied EC to theological issues tend not to focus on RN or on the reading process, and while narratologists have engaged with affects, few discuss EC or RN.

⁴ Kin Cheung, *Meditation and Neural Connections: Changing Sense(s) of Self in East Asian Buddhist and Neuroscientific Descriptions* (Temple University, ProQuest Dissertations Publishing, 2017), p.103

The application of this theoretical framework is the purpose of Part II, which comprises Chapters 3, 4, 5 and 6. The Problem of Alienation argues that the world understood naturalistically is affectively pallid, abstract and detached. In Chapter 3 I assess ecologist and philosopher David Abram's books *The Spell of the Sensuous* and *Becoming Animal*, which constitute a self-acknowledged language project seeking to transcend representational abstractions in order to foster direct engagement with the 'more-than-human-world.' A close analysis shows how he achieves this, which includes an avalanche of perceptual and motor simulation alongside the disruption of embodied metaphors that otherwise reinforce human-nonhuman boundaries. I evaluate the research relating to affective resonance with nonhuman entities and suggest that using anthropomorphic (but not anthropocentric) language may have the desired impact.

I contextualise Abram as an example of a *naturalist imaginary* through which authors can 'elevate the material,' thereby countering what the Problem of Alienation contends about the affectivity of the solely natural. Scientific discovery can be seen as a portal to that which we know exists but which is unseen and indeed unsensed. William James wrote that religion involves 'vital conversation with the unseen divine,'⁵ and where this phrase is interpreted naturalistically, embodied imaginaries can help people not just to think about, but to feel and to resonate with, that which is unseen.

The Problem of Alienation further argues that explanation destroys wonder. In Chapter 4, I assess current debates relating to wonder and explanation in RN, focusing on Lisa Sideris's critique of several prominent religious naturalists and their alleged commitment to what she calls 'serial wonder,' focused on the nature of the scientific explanations themselves. She promotes instead an allegedly healthier 'compatibilist wonder' based on direct experience of nature itself.

⁵ William James, *The Varieties of Religious Experience: A Study in Human Nature* (Amherst, NY: Prometheus Books, 2002), p.447

Religious naturalists witness to the co-existence of explanation and wonder, and I demonstrate why this counter-intuitive idea is possible with reference to *attention*. I connect the ideas about attention offered by James, Dewey, Abram and Sideris to the work of Ian McGilchrist, showing how his account of the two primary forms of embodied attention goes some way to solving the conundrum. Human beings *toggle* between focused and global kinds of attention such that these interrupt but do not chronically undermine one another, thereby allowing explanation and wonder to co-exist. However, the two forms are not entirely divorced, and the experiences in one form can still influence those of the other.

While the Problem of Alienation is concerned with our orientation in space, the Problem of Demotivation relates to our position and role in time. I begin Chapter 5 by concurring with Mary Midgley and Lisa Sideris that scientific theories are ideologically indeterminate and do not in themselves validate specific human purposes, as well as with their rejection of the anthropocentrism evident in some RN narratives. However, Sideris's critique relates to a particular *narrative plot*, and she does not adequately consider existing and potential alternatives. She also fails to allow for legitimate individual differences in experience and temperament that draw people towards certain relationships with the universe around them.

I move the conversation forward by analysing a distinction between what I call the connectionist and existentialist varieties of RN, where the former sees the universe as essentially benign and seeks greater integration and belonging, whereas the latter sees it as something to be heroically resisted. I relate these to an evaluation of the affective topography of a number of culturally influential narrative plots to which authors gravitate and through which the notion of intertextuality can be applied: 'Rags to Riches,' 'Overcoming the Monster' and 'Rebirth.' I show that, although the universe does not provide inherent purpose, once an author has chosen a

purpose there are opportunities to align readers affectively to it, especially through embodied simulation. Finally, I suggest that, through the neuroplastic process I call *absorption*, particular ideas and narratives can generate physical changes through repeated rehearsal.

I acknowledge in Chapter 6 that the Problem of Oblivion is the most challenging aspect of the ACAN, because RN cannot compete with the prospect of seeing loved ones again. I therefore make the more modest claim that AEC offers an unexplored avenue that might complement naturalist attempts to alleviate ‘death anxiety.’ I survey these naturalist strategies, focusing on those that propose some form of post-mortem material continuity. I suggest that, beyond the common notions of atomic and genetic survival, there will be a significant connection between the material substrates of direct perception (in whatever sensory mode) and those of imagination (or simulation): they are *isomorphic material configurations*. This means that imagining the dead (or any other person) involves an imperfect material reconstruction of directly perceiving them, and that perceiving something that the dead perceived will also entail related reconstructions.

I then turn to the scientific discovery that all the elements heavier than hydrogen and helium found on Earth, and in its organisms, were ejected from a supernova, which provides a common origin and identity for life. I combine this with an analysis of the positive affectivity of stars, which is widespread due to shared cultural references and somatic markers. The concept of the stellar can thereby act as a *focaliser* upon which can hang many of the ideas developed throughout the thesis. For example, we are constellations of stardust that can reshape it and the various other living and non-living constellations around us, and can create with it isomorphic reconstructions of the dead and of their experiences.

The Conclusion suggests areas for further research. Among the many intriguing avenues that I did not explore are the intentional enlisting of mythological tropes and archetypes, the expansion beyond AEC in naturalist texts to its involvement in other media, and the possibility of considering the entire question not from the perspective of how RN might engage affects but from affects' autotelic character – that is, our desire for and addiction to particular affects. I also raise the prospect of AEC's intentional use beyond the religious sphere, wherever narratives are at play, including by countering the anthropocentric biases that propel climate and ecological breakdown.

INTRODUCTION

The Affective Case against Naturalism

*...The world, which seems
To lie before us like a field of dreams,
So various, so beautiful, so new,
Hath really neither joy, nor love, nor light,
Nor certitude, nor peace, nor help for pain...*

- Matthew Arnold

*Man wird zum tief religiösen Ungläubigen.
(One becomes a deeply religious nonbeliever.)*

- Albert Einstein⁶

In his poem *Dover Beach*, Matthew Arnold laments the ebbing of religious faith, and specifically the supposed implications of no longer being able to sustain a belief in gods, angels, or souls. Composed around 1851, it is a poignant reflection on the perceived inadequacies of naturalism as a comprehensive, satisfying worldview. It is therefore a fine example of one of the arguments offered for god's existence - or at least against nonbelief - a line of reasoning that I will call the Affective Case against Naturalism (ACAN).⁷

Yet some challenge the ACAN. The thinkers who most extensively – and often explicitly – do so usually self-identify as religious naturalists. As defined by its main chroniclers, religious

⁶ Albert Einstein to H. Mühsam, 30 March 1954. Einstein Archive, reel 38-434.

⁷ I considered but rejected the alternative 'argument from emotional consequence.' This would have sat neatly alongside another argument for God, the 'argument from moral consequence,' but would have been confusing because it presents the same acronym 'AEC' that I wish to reserve for Affective Embodied Cognition. I have been unable to locate previous uses of 'Argument from Emotional Consequence' in the context of particular philosophies or worldviews. However, I have found one occasion where it has been used in a different, behavioural context: Benjamin David Cox, *Gods Without Faces: Childhood, Religion, and Imagination in Contemporary Japan* (Doctoral thesis, 2018), p.159.

naturalism (RN) is ‘a movement that asserts the possibility and desirability of a robust religious/spiritual life without recourse to the supernatural, whether deity, soul, or heaven.’⁸ Like Einstein, they raise the prospect of a ‘deeply religious nonbelief.’

The overarching argument of my thesis is that RN is fundamentally concerned with developing meaningful myths founded on the discoveries of mainstream science; that embodied cognition (EC) has an important role in enabling that difficult process; and that in doing so EC overturns the ACAN. Because of the affective preoccupation of the ACAN, I will focus particularly on what I label ‘affective embodied cognition’ (AEC), a cluster of academic fields that study the integration of thinking and feeling.

The sentiment expressed in *Dover Beach* represents a much broader set of religious, intellectual and popular currents that might fall under the ACAN banner. I propose that the ACAN can be broken into three strands, which I will call the Problems of Alienation, Demotivation, and Oblivion. These indicate three perceived aspects of naturalism deemed to have unwelcome emotional consequences. I will now provide an overview of these three problems in the form of a foil – that is, as they might be conveyed as a sweeping narrative by a rather strident advocate of the ACAN (this is best presented *without simultaneous critique* – that critique runs through the remainder of the thesis). I will then, as part of Chapter 1, scrutinise the ACAN’s origins, devotees and detractors.

Of naturalism’s many emotional shortcomings, there is a diverse sub-collection that might be gathered under the heading of *The Problem of Alienation*. The great paradox of science is that it can, by amassing and testing evidence, give us great confidence in its discoveries, yet these

⁸ Donald A. Crosby and Jerome A. Stone, *The Routledge Handbook of Religious Naturalism*. (Abingdon and New York: Routledge, 2008), p.7

must remain provisional models. While provisional does not equal arbitrary, many people will miss this subtlety, and there is good evidence that if we do regard our narratives as arbitrary they lose some of their impact.⁹ Even if we understand the difference, the necessity of doubt, and thus instability, will be an alienating factor insofar as it limits emotional commitment: who wants to embrace a fickle account of reality? Naturalists who would seek to use scientific discoveries as a basis for some quasi-religious worldview should heed the philosopher Holmes Rolston III, whom, despite his own naturalist position, concedes that ‘the religion that is married to science today will be a widow tomorrow.’¹⁰

But there is a more direct alienating force than doubt, and that is explanation. In launching the Romantic reversal of values, Jean-Jacques Rousseau predicted that the explanations offered by science and reason would so estrange people from their world they would beseech God to return them to ‘ignorance, innocence, and poverty, the only goods that can make for our happiness and that are precious in your sight.’¹¹ It was explanation that led John Keats to grieve over the perceived destruction of the specific emotion of wonder:

Do not all charms fly

At the mere touch of cold philosophy?...

Philosophy will clip an Angel's wings

Conquer all mysteries by rule and line,

Empty the haunted air, and gnomèd mine –

Unweave a rainbow.

⁹ Timothy D. Wilson, *Strangers to Ourselves: Discovering the Adaptive Unconscious* (Cambridge, MA and London: Belknap Press, 2002), pp.220-21

¹⁰ Holmes Rolston, *Science and Religion: A Critical Survey* (Philadelphia: Templeton Foundation Press, 2006), p.ix

¹¹ Jean-Jacques Rousseau, ‘Discourse on the Sciences and the Arts.’ In Jean-Jacques Rousseau, *The Discourses and Other Early Political Writings*. Ed and tr. Victor Gourevitch (Cambridge: Cambridge University Press, 2019), pp.16, 25-26.

For Keats the problem was the *fact* of explanation, but it runs deeper; it is also the *nature* of the accounts that scientists and social scientists provide. The increasing specialisations of scientific enquiry and its impenetrable publications disclose an intellectually baffling world. This is not something that might be easily rectified by education: the scientific consensus on various aspects of cosmology, human nature, and beyond is often counter-intuitive regardless of educational achievement or intellectual prowess.¹² The conceptual world simply no longer serves humankind. Indeed, it has been very much going its own way since 1900 and the near simultaneous discovery of the unconscious, the gene, and the quantum. It is not that religious concepts are always intuitive, but they seem less random than many scientific discoveries.¹³ Compared to evolution by natural selection, let alone quantum mechanics, a creator of everything who saves the obedient may be more consonant with our instinctive cognition about mind, agency, and social relations. By contrast, how can convoluted science-derived perspectives possibly align with such innate interpretations?

Not only are the fact and nature of explanation alienating, but people find scientific discoveries pretty irrelevant to their everyday lives. As Anthelme Brillat-Savarin observed, ‘the discovery of a new dish does more for human happiness than the discovery of a star’¹⁴ - immediate, concrete imperatives and pleasures such as eating, drinking, company, and sex tend to loom larger than remote, abstract, and sometimes downright incredible conjectures.

¹² Arguably the scientific method is itself counter-intuitive. See, for example, Robert N. McCauley, *Why Religion is Natural and Science is Not* (New York: Oxford University Press, 2011)

¹³ Pascal Boyer presented a well-known argument that only specific counter-intuitive forms flourish in the population at large (see e.g. Pascal Boyer, *Religion Explained: The Human Instincts that fashion Gods, Spirits and Ancestors* (London: William Heinemann, 2001), p.74.

¹⁴ Anthelme Brillat-Savarin *Physiologie du Goût* (1825), Aphorism no.9. Cited in ed. Elizabeth Knowles, *The Oxford Dictionary of Quotations*. 5th edition (Oxford: Oxford University Press, 1999), p.148

However malignant its explanations, one might hope that naturalism could mitigate them through institutions and rituals that would focus upon and reinforce whatever wonders it can salvage. But it has no holy books, sacred music, widely replicated rituals, or monumental architecture, or at least none to compare with the majestic traditions of the established faiths. When naturalists *have* tried to embody their convictions, the outcome has been unedifying. One needs only to recall Auguste Comte, the founder of positivism, whose attempt to model his so-called Church of Humanity on medieval Roman Catholicism resulted in a grotesque hybrid with an authoritarian structure. He planned to create a 100,000-strong clergy in France alone, with himself installed as ‘the great priest.’ He identified a pantheon of secular saints – Cicero, Shakespeare, and Goethe among them. And conscious of the religious power of architecture, he envisaged a host of new secular churches, financed by the emerging bankers.¹⁵ The strategy failed, and any similar project is doomed to falter emotionally because it will lack the history, authority, and gravitas of the established faiths.¹⁶

Naturalism may claim to offer instead the great books, music, and monuments of nature, and whatever rituals people wish to design. Very well, but that is not much good for those who do not live amidst a bucolic idyll or who lack the opportunities to spend time in one, nor for an increasingly urbanised and ecologically devastated planet. Even Ursula Goodenough, one of the leading contemporary religious naturalists, admits that ‘Alas, the vision that 6 billion humans might have regular opportunities to wander about in the woods is just that - a vision, for many a laughable vision.’¹⁷ She was writing in 2001, and there are now even more people and even fewer woods. This is a philosophy viable only for those with lungs full of fresh air and lives full of

¹⁵ Comte described his new religion in *Summary Exposition of the Universal Religion and Theory of the Future of Man*. It is discussed in e.g. George Levine, *Darwin Loves You: Natural Selection and the Re-enchantment of the World* (Princeton: Princeton University Press, 2006), p.32; and in Alain De Botton, *Religion for Atheists* (London: Hamish Hamilton, 2012), pp.300-307.

¹⁶ While an advocate of the ACAN might make this argument, examples such as scientology suggest that it is possible for such organisations to flourish in certain circumstances.

¹⁷ Ursula Goodenough, ‘Vertical and Horizontal Transcendence,’ *Zygon* 36(1), 2001, p.29

leisure. And even those yearning for the wildness and connectivity with nature tend to harbour a simultaneous desire for the comforts and ease of modern developed life.¹⁸

There is a second strand of the ACAN – the *Problem of Demotivation* – a family of emotional failings that might be summarised by Steven Weinberg’s oft-cited remark that ‘the more the universe seems comprehensible, the more it seems pointless.’¹⁹ The picture painted by science alone contains no authentic story in which we can play a part. The universe appears as ‘a mute amnesiac with no papers,’²⁰ and psychologist Rollo May identifies the consequences: ‘Myths are like the beams of a house. Not exposed to outside view, they are the structure which holds the house together so people can live in it.’²¹ Without a comprehensive and coherent narrative, individuals and indeed whole societies can literally ‘lose the plot’ – a psychological malaise which usually has social and political repercussions.

If we do manage to eke out a meaningful story from nature, it cannot pretend that humans have a special status. As Sigmund Freud observed, science has inflicted a sequence of dethronements on humankind, expelling us from the cosmological, biological, and indeed psychological centre. The initial affront was the Copernican revolution, the sun’s displacement of the Earth from the heart of the cosmos, a reversal exacerbated by later discoveries that consigned our entire Solar System to a remote arm of one galaxy among billions. The second setback was Darwin’s recognition of the blind processes behind our biological emergence, a breakthrough demanding our absorption into the Animal Kingdom. The third, which Freud, again, made famous but which had antecedents, has resurged in recent decades, if in a rather

¹⁸ George Monbiot, *Feral: Revilding the Land, Sea and Human Life* (London: Penguin, 2014), p.46

¹⁹ Steven Weinberg, *The First Three Minutes* (Toronto: Bantam Books, 1983), p.144.

²⁰ Richard, Holloway. *Leaving Alexandria: A Memoir of Faith and Doubt* (Edinburgh: Canongate, 2012), p.159

²¹ Rollo May, *The Cry for Myth* (New York and London: W. W. Norton and Company, 1991), p.15

different hue: the demonstration of our perceptive and cognitive fallibilities, of the potent influence wielded by unconscious machinations.

Of course, some naturalists continue undaunted, imagining that if they can identify some cosmic quest to which to devote themselves, they might feel as religious believers do when convinced they are contributing to a great divine plan.²² But this is wishful thinking, because scientific knowledge cannot provide us with values. In the past, questions of ultimate meaning and value were entwined with understandings of the universe,²³ but:

Thanks to Newton we cannot discover goodness in the mechanics of the heavens, thanks to Darwin we cannot find it in the phenomenon of life and thanks to Freud we cannot find it in ourselves.²⁴

We seek in vain in nature for reassurance, for any basis for goodness or meaning. We can conceive of life as a gift, but that makes little sense if we do not believe the world is created and have nobody to thank.²⁵ We can hail the diversity and complexity of nature, but as Kant saw, unless we step outside nature we cannot easily talk of its purpose and goal.²⁶ Consider an environmentalist who finds peace of mind through his ecologically responsible behaviour: he achieves no substantive impact on the vastness of nature, let alone any transcendence of it.²⁷

Naturalists would do better to admit, with Bertrand Russell, that:

²² They may, for example, hope to find a satisfaction like that described by John Stuart Mill when writing about participation in such a plan: 'To do something during life, on even the humblest scale if nothing more is within reach, towards bringing this consummation ever so little nearer, is the most animating and invigorating thought which can inspire a human creature.' John Stuart Mill, *Three Essays on Religion* (New York: Henry Holt, 1874), pp.256-57.

²³ Peter Harrison, *The Territories of Science and Religion* (Chicago and London: University of Chicago Press, 2015), p.ix

²⁴ Bryan Appleyard, *Understanding the Present: Science and the Soul of Modern Man* (London: Pan Books, 1992), pp.79-80

²⁵ Mark Vernon, *After Atheism: Science, Religion, and the Meaning of Life* (Basingstoke: Palgrave MacMillan, 2007), p.97

²⁶ Discussed by Jozef Keulartz in 'Rolston: A contemporary physico-theologian.' In W. B. Drees (ed.), *Is Nature Ever Evil? Religion, Science and Value* (London: Routledge, 2003), p.91

²⁷ Appleyard, *Understanding the Present*, p.137

All the labours of the ages, all the devotion, all the inspiration, all the noonday brightness of human genius, are destined to extinction in the vast death of the solar system.²⁸

The final nail in the naturalist coffin is the *Problem of Oblivion*, the third strand of the ACAN, which concerns the horrors of this life and the lack of any hereafter in which we might be saved. The agony and terror of sensate organic beings is apparently built into the very fabric, indeed the very logic, of the ecological systems upon whose functioning our existence relies. For Darwin, it was the *ichneumonidae*, the digger wasps whose larvae feed on the paralysed – but still living - bodies of caterpillars, which challenged his ability to believe in a loving creator. But horrendous biological phenomena, whether the *ichneumonidae* or child cancers, are only made worse by nonbelief.

There is no divine assistance for the nonbeliever, no steadfast supernatural friendship; there is no guarantee of justice or redemption, no promise of a happy ending. Our capacity for love is cruelly juxtaposed with fear, loss, and pain in relation to those whom we love, and as if all that is not bad enough, negative feelings like pain are – as Arthur Schopenhauer highlighted – often more potent, more consuming, than positive sensations like happiness.²⁹

The situation becomes even more hopeless when naturalists propose that we consider our own death and those of others as final. Try as they might, naturalists have no perspective to compete with the prospect, offered by many religious creeds, of seeing our loved ones again. A life without the prospect of some form of redemption is simply not viable, not even in the

²⁸ Bertrand Russell, *Mysticism and Logic* (London: Edward Arnold, 1918), pp.47-48

²⁹ I note that Schopenhauer's insight is supported by the experiments that upset the utility theory of classical economics by demonstrating how we weigh losses and gains asymmetrically. See e.g. Daniel Kahneman, *Thinking, Fast and Slow* (London: Penguin, 2011).

unprecedented comfort of the modern West.³⁰ Christianity faces its own struggles in reconciling omnipotence and love on the one hand with human experience on the other, but its Problem of Evil is surely less grave than naturalism's equivalent.

Such is the ACAN as it might be presented by a zealous advocate. The accumulated weight of the Problems of Alienation, Demotivation, and Oblivion allegedly amount to an insurmountable obstacle for a meaningful, emotionally satisfying naturalism. For its proponents, the ACAN shows that eschewing the supernatural entails grave emotional consequences, and seems to justify Matthew Arnold's contention that the world, which may appear 'so various, so beautiful, so new,' is exposed, with the retreat of 'the sea of faith,' to be nothing but a 'darkling plain.'

This thesis will argue that the ACAN is not entirely without merit, but can be overturned by understanding and harnessing what we are learning through AEC about the relationship between thoughts and emotions. My approach ventures beyond the descriptive to the tentatively prescriptive: religious naturalists would be more successful in contesting the ACAN if they intentionally discarded any lingering inheritance of Cartesian dualism – any sense that mind and matter, or thinking and feeling, are ontologically distinct - and embraced a fully-fledged AEC. With few exceptions, significant voices in RN either wrote their most significant works before the evolution of EC theory and affective science in recent decades, or show little explicit evidence of having absorbed them.

It would be possible to take a more traditional, entirely linguistic approach to confronting the ACAN. However, while I will refer to many of the counter-arguments made by religious

³⁰ For a discussion in dialogue form, see John Hick, *Between Faith and Doubt: Dialogues on Religion and Reason* (Basingstoke: Palgrave MacMillan, 2010), pp.33-38.

naturalists and others, I want to do something more original: I want to bring to bear the psychological and biological perspectives offered by my formulation of AEC and to explore their potential in a constructive, intentional fashion. I am therefore seeking to bring RN into conversation with theories of emotion, and because that subject is so vast, with emotion as understood by scholars of EC. The EC perspective is intriguing because most RN authors seek to emphasise the interconnectedness between human beings and the nonhuman world, and EC is fundamentally about the ways in which our cognition is situated not just within an individual body but an ecology and ultimately the universe itself. There is, then, an innate resonance between the emphases of RN and EC, even where the two projects are unaware of one another.

This blindspot on the part of EC is easier to absolve than that on the part of RN. EC is so profound that its theorists cannot be expected to engage individually with every field that it intersects. By contrast, many strains of RN have as their central concern the nexus between the human and the nonhuman, and there are few areas in the cognitive sciences where those interconnections are elaborated with keener attention than EC. More than that, with only a few exceptions that I will raise in due course, RN has not systematically engaged matters of affect (including what I am calling AEC), even where authors recognise that to flourish they must succeed affectively. This may be one of the reasons why RN is typically absent from the intellectual and spiritual landscape of even highly educated, naturalistically-minded individuals. I hope that what follows will spur that dialogue.

PART I: THEORY

CHAPTER 1

The History of the ACAN and the Roots of Religious Naturalism in James, Dewey, and Santayana

The heart of my point...is that there is a difference between religion, a religion, and the religious; between anything that may be denoted by a noun substantive and the quality of experience that is designated by an adjective.³¹

- John Dewey

This initial chapter has three aims. I begin by examining the origins and variations of the Affective Case against Naturalism (ACAN) described in the Introduction. In the main part of the chapter, I draw upon religious naturalism's (RN's) foundational philosophers – William James, John Dewey, and George Santayana – to suggest that RN attempts to blend scientific commitments with experiential, idealistic, and mythic orientations usually associated with religion. Finally, I explain why theoretical and empirical advances in affective embodied cognition (AEC) are so relevant to efforts to confront the ACAN, as a springboard to the detailed analysis of AEC that forms Chapter 2. In doing so I will begin to elaborate the distinction, as proposed by John Dewey above, between the specific commitments of a religion (or indeed any philosophical position) on the one hand and experiences that may be deemed to have a religious quality on the other.

The History of the ACAN and the Disenchantment Narrative

³¹ John Dewey, *A Common Faith* (New Haven and London: Yale University Press, 1934), p.3

The ACAN has a long and complex history. It is neither possible nor necessary to tell that story in detail here, but I will sketch its main threads and commentators in the modern era in order to situate RN within this contested environment and prepare the ground for later chapters.

Academic philosophers and sophisticated Christian apologists tend not to make the ACAN. Today, it is most often heard in conservative Christian circles. For example, the ‘Answers in Genesis’ website contains an article by Avery Foley and Ken Ham entitled ‘Atheism: Hopeless, Meaningless, Purposeless’ (their target could as easily be ‘naturalism’ as ‘atheism’) which asks rhetorically: ‘Does it [atheism] provide its followers with hope, meaning, and purpose, something human experience shows we all crave? Or is it a religion devoid of hope, meaning, and purpose?’³² Similarly, Greg Koukl, Founder and President of ‘Stand to Reason,’ claims that naturalism:

cannot explain the beauty and wonder of being human. And it has no answer to human brokenness. It cannot provide the consolation of true forgiveness. Only God in Christ can solve our existential crisis.

Koukl continues that naturalism ‘doesn’t make sense of his [the naturalist’s] own deep hunger for significance or rescue from sin.’³³ I contend that the ACAN also exists in the background, buttressing traditional religion for many ordinary believers through the fear of what would transpire emotionally were they to lose faith in supernatural powers.³⁴ For many traditional

³² <https://answersingenesis.org/world-religions/atheism/atheism-hopeless-meaningless-purposeless/>, dated 23 September 2016 (retrieved 15 March 2021)

³³ <https://bible.org/article/naturalism-bumping-reality>, dated 3 September 2014 (retrieved 15 March 2021)

³⁴ This claim is based mainly on personal experience and contact with religious believers. It is a complex issue, not least because fear of the consequences of an intellectual lack of belief (the focus here) may be difficult to separate from fear of the consequences of the *process* of losing that belief, which itself may be compounded by the social fear of leaving a supportive religious community. There is academic work on the positive role of religion in emotion

religious people, the argument seems like common sense: anyone believing they can offer the emotional benefits of religious faith without reference to gods, souls, or the spirit is trying to have his cake and eat it.

Such views owe much to the influence of Romanticism, an irony given the relationship that many Romantics held with traditional creeds. I have already referred, in the Introduction, to Rousseau and Keats, who exemplify the Romantics' deep care for wonder. In Germany, similarly, Johann Heinrich Merck, a member of the *Sturm und Drang* movement, believed rationalism had deprived religion of its sensuality by dissecting and reducing it to a drab phenomenon that nobody wanted,³⁵ while Goethe felt that 'ratiocination drives poetry away.'³⁶

The decline of traditional religious faith, at least in the UK, is often perceived as a Victorian phenomenon,³⁷ and during the ACAN's expression in that era the Problem of Demotivation began to emerge starkly. The key scientific principle of explaining phenomena through a causal sequence of events was at odds with doing so through their teleological end. Kant wrote in 1790 that 'no human reason...can ever hope to understand the generation of even a little blade of grass from merely mechanical causes.'³⁸ However, the nineteenth century witnessed the wide application of what Newton had demonstrated for the movement of objects. Geology and biology were revealing the age and gradual development of the Earth and of life,

regulation (e.g. Stephen T. Asma, *Why We Need Religion: An Agnostic Celebration of Spiritual Emotions* (New York: Oxford University Press, 2018)). This might be seen to support the ACAN, but does not in any straightforward fashion because it does not thoroughly investigate the question of whether naturalist or other philosophies have the potential to confer similar emotional benefits.

³⁵ Quoted in Roy Pascal, *The German Sturm und Drang* (Manchester: Manchester University Press, 1953), p.88

³⁶ Quoted in A. N. Wilson, *God's Funeral* (London: John Murray, 1999), p.17

The Romantics' contemporary inheritors continue to fear that explanation kills affect. I will dispute this plank of the ACAN – this perceived Problem of Alienation – and show how AEC can counter it, in Chapter 4.

³⁷ The situation is more complex, however. While the ACAN itself has strong Romantic and Victorian roots, Callum Brown argues that the 1960s were more important for the broader decline of Christianity in the UK. See Callum G. Brown, *The Death of Christian Britain: Understanding Secularisation 1800-2000*. (Abingdon and New York: Routledge, 2001).

³⁸ Immanuel Kant, *Critique of the Power of Judgment* (The Cambridge Edition of the Works of Immanuel Kant), ed. Paul Guyer, trans. Paul Guyer and Eric Matthews (Cambridge: Cambridge University Press, 2000), p.279

including ourselves. And for those unable to reconcile these discoveries with their beliefs, this was a real crisis in which there were ‘no *whys*, just *hows*; no ends, just origins and means; no reasons, just causes.’³⁹

Dover Beach illustrates the Victorian sense that naturalism had unwelcome emotional consequences, and so was about much more than substituting one intellectual proposition for another. Matthew Arnold was not alone in feeling the need to convey the emotional repercussions. Witness how Thomas Hardy continued, in the Edwardian period, the poetic ACAN tradition in *God's Funeral* (1908-10):

So, toward our myth's oblivion
Darkling, and languid-lipped, we creep and grope
Sadlier than those who wept in Babylon,
Whose Zion was a still abiding hope.
How sweet it was in years far bied
To start the wheels of day with trustful prayer,
To lie down liegely at the eventide
And feel a blest assurance he was there!
And who or what shall fill his place?

The ACAN developed in tandem with the emergence of an increasingly convincing naturalism, but became a clamour – and to some extent defined an age – in the perceived loss of meaningfulness associated with modernism. Max Weber's 1918 lecture *Science as a Vocation* is often deemed the seminal text, and includes this essential passage:

³⁹ Dennis Ford, *The Search for Meaning: A Short History* (Berkeley, Los Angeles and London: University of California Press, 2017), p.94 (emphases in the original)

The increasing intellectualization and rationalization...means something else – the knowledge or the belief that, *if one only wanted to*, one *could* find out any time; that there are in principle no *mysterious, incalculable powers at work*, but rather that one could in principle master everything through *calculation*.⁴⁰

Here, Weber conveys an emotion that appears to lie behind many expressions of the ACAN, namely a fear of the loss of the mysterious. He proceeded to clarify the implications:

But that means the disenchantment of the world. One need no longer have recourse to magic in order to control or implore the spirits, as did the savage for whom such powers existed. Technology and calculation achieve that, and this more than anything else means intellectualization as such...The fate of our age, with its characteristic rationalization and intellectualization and above all the disenchantment of the world...⁴¹

Weber contends that enchantment only comes from that which is mysterious or incalculable or uncontrollable. As such, this sits within that portion of the ACAN that I am calling the Problem of Alienation. He makes the connection to a broader crisis when he states that, in a disenchanted world, both life and death are stamped with ‘the imprint of meaninglessness.’⁴² As noted above, this reflexive connection made by ACAN advocates, between abstract, calculable or putatively understood phenomena and disenchantment is what I will contest in Chapter 3, particularly by illustrating the potentially counteracting force of intentional AEC.

⁴⁰ Max Weber, ‘Science as a Vocation.’ In P. Lassman and I. Velody (eds.), with H. Martins, *Max Weber’s ‘Science as a Vocation’* (London and New York: Routledge, 2015), pp.13-14 (emphases in the original)

⁴¹ Weber, ‘Science as a Vocation,’ pp.14, 30

⁴² This quote is taken from a different translation of ‘Science as a Vocation’: H. H. Gerth and C. Wright Mills (eds), *From Max Weber: Essays in Sociology* (New York: Oxford University Press, 1981), p.140

‘Disenchantment’ is a much contested term. The dissatisfaction that some express with this notion – and those of ‘enchantment’ and ‘re-enchantment’ - has two main causes. First, they can seem both archaic and imprecise. The term *Entzauberung*, which Weber took from Friedrich Schiller, roughly translates as ‘de-magic-ation’ and suggests the breaking of a spell. Weber is apparently thinking about an emotional loss that accompanies that process, but does not specify exactly what he means. Jane Bennett, in *The Enchantment of Modern Life* (2001), attempts to rectify this, at least in part, by characterising the emotional experience of the opposite process, namely that of enchantment. For Bennett, ‘to be enchanted is to be struck and shaken by the extraordinary that lives amid the familiar and the everyday.’⁴³ It is a mood triggered by an immobilising surprise encounter that combines a pleasant, energising sense of fullness with a slightly disturbing feeling of disruption.⁴⁴ I believe her description is ultimately too narrow, but this argument is best left for Chapter 2 alongside the analysis of emotion *per se* and its relation to EC.

The second cause of the dissatisfaction with these terms is that tragic modernist narratives such as that of Weber and, more recently, of Charles Taylor in his magnum opus *A Secular Age* (2007), are simplistic. Bennett again provides what Weber does not, namely a straightforward summary of Weber’s own enchantment (and disenchantment) narrative:

There was once a time when Nature was purposive, God was active in the details of human affairs, human and other creatures were defined by a preexisting web of relations, social life was characterized by face-to-face relations, and political order took the form of organic community. Then, this premodern world gave way to the forces of scientific and

⁴³ Jane Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics* (Princeton, NJ: Princeton University Press, 2001), p.4

⁴⁴ Bennett, *The Enchantment of Modern Life*, p.104

instrumental rationality, secularism, individualism, and the bureaucratic state – all of which, combined, disenchant the world.⁴⁵

Both this tragic narrative and the triumphalist progress tale against which it emerged streamline a complex, patchy reality where individuals and whole populations did not – and do not - fit the alleged pattern. For example, naturalism (or more specifically, in Weber's account, calculation and abstraction) hardly resulted in a Matthew Arnold-esque emotional crisis for all people everywhere. One might cite any number of exceptions, from the cheerfulness with which Hume held his godless philosophy⁴⁶ to the argument that the decline of church attendance in the Victorian age, at least among the working class, owed more to social and political trends than to an intellectual reorientation or emotional upheaval.⁴⁷

Those who were never emotionally attached to supernatural elements in the first place may find the entire notion of disenchantment difficult to comprehend. Those who *have* experienced such a loss, or possess sufficient empathy to appreciate what is involved, may develop alternative, naturalist sources of enchantment. For example, subscribers to the progress plot, as exemplified by German philosopher Hans Blumenberg, find that the technical superiority and self-assertive rationalisation enabled by jettisoning religious forms hold their own considerable emotional weight.⁴⁸ This affectively charged celebration of reason continues into the present with scientists such as Steven Pinker and Richard Dawkins, who hail both the manifest practical blessings of modernity and the emotional exhilaration of the scientific enterprise and its discoveries.

⁴⁵ Bennett, *The Enchantment of Modern Life*, p.7

⁴⁶ Discussed in Wilson, *God's Funeral*, p.25

⁴⁷ Don Cupitt, *The Sea of Faith: Christianity in Change* (London: BBC, 1984), p.24

⁴⁸ Blumenberg is discussed at some length in Bennett, *The Enchantment of Modern Life*, pp.65-75

A small library now attests to the possibility of finding something like enchantment by various routes that differ from traditional religion while sharing some of its characteristics, with some volumes actually using the terms enchantment or re-enchantment in their titles.⁴⁹ For Jane Bennett, the emotional pattern of enchantment she describes might be found among various natural and cultural phenomena, including sophisticated nonhuman communication or the strange behaviour of physical systems when at nonequilibrium states. She claims that the argument between those perceiving disenchantment as regrettable and those deeming it progressive is misplaced, because the world need not be seen as disenchanted in the first place once one acknowledges that enchantment need not rely on a divine presence.⁵⁰

Bennett's book distinguishes itself from others in this mould by making a case for a connection between enchantment and ethical behaviour, a theme that will become increasingly important as my own thesis unfolds. She probes the possibility that the affects she associates with enchantment might energise ethical behaviour. By being more open to potentially surprising encounters with other selves and phenomena, we might be more prepared to relate to them in a more generous and productive manner. She realises that this contradicts Kant's rejection of any connection between the moral law and will on the one hand and affects on the other, but argues that ethical behaviour requires not just a moral code but a sensibility – an affective energy – to propel them.⁵¹ Her contribution is that the particular affective pattern of enchantment may have a behavioural impact, and specifically a positive one.⁵²

⁴⁹ e.g. Joshua Landy and Michael Saler, *The Re-Enchantment of the World: Secular Magic in a Rational Age* (Stanford: Stanford University Press, 2009)

e.g. Levine, *Darwin Loves You: Natural Selection and the Re-enchantment of the World* (Princeton: Princeton University Press, 2006)

e.g. Thomas Moore, *The Re-Enchantment of Everyday Life* (New York: Harper Collins, 1996)

⁵⁰ Bennett, *The Enchantment of Modern Life*, pp.3-4, 12

⁵¹ Bennett, *The Enchantment of Modern Life*, pp.3-4, 131, 135

⁵² It is worth noting that this relationship also operates in the opposite direction: affects not only shape ethical behaviour, but ethical behaviour shapes affects. Kant's claim that nonbelief in God has harmful ethical results, a point most famously echoed in Dostoevsky's line that 'If God does not exist, everything is permitted' (*The Brothers Karamazov*, 1880), continues to be a common trope today. Indeed, this amounts to an entire strand of apologetics that is sometimes called 'the argument from moral consequence.' Whatever the strength or weakness of that

I have suggested why enchantment, disenchantment, and re-enchantment are complex and contested terms, and yet I will continue to use them because they succinctly convey the kind of affective project pursued by many religious naturalists. Weber conceived that the world used to appear to human beings as ‘a great enchanted garden.’⁵³ This combination of wildness, freedom, and possibility often characterises the work of religious naturalist authors who seek, and arguably occasionally achieve, a kind of ‘Narnian’ re-imagining of the world. ‘Re-enchantment’ is as good a term as any for this endeavour. Finally, the purportedly disenchanting forces of rational thinking, explanation, and calculation largely constitute that strand of the ACAN that I am calling the Problem of Alienation, and underpin a hypothesis I will later develop on the relevance of two distinct forms of attention to its resolution.

The Origins of Religious Naturalism Today

Some of those who might allow themselves to be described as *enchanted* might balk at any use of the term *religious* to label themselves or their perspectives because of its associations with established faiths. By contrast, the most direct response to the ACAN is manifested in RN, whose followers generally embrace the term and claim that their naturalist orientations offer much if not all of the spiritual qualities enjoyed by devotees of the great religions. From a foundation of (usually mainstream) science, religious naturalists try to reimagine the world and our relation to it in ways that inspire and console without recourse to souls, supernatural powers, or survival after death.⁵⁴

argument, it clearly feeds the AEC by extension, given that harmful behaviours and failing societies will, almost by definition, entail negative emotional experiences for many of those involved.

⁵³ Max Weber, *The Sociology of Religion* (Boston: Beacon Press, 1964), p.270

⁵⁴ In using ‘inspire and console,’ I paraphrase Thomas Tweed’s oft-cited shorthand that ‘religions intensify joy and confront suffering.’ See Thomas Tweed, *Crossing and Dwelling* (Cambridge, MA: Harvard University Press, 2006), pp.69-70.

Naturalism, as per common definitions, is taken to be the belief in only those phenomena that can in principle be explained by the laws of nature (and thus *supernaturalism* to the belief in that which cannot in principle be thus explained). Naturalism is conventionally divided into *methodological naturalism* and *metaphysical naturalism*. The former, ‘weak’ version refers to the practice of admitting only natural phenomena into scientific experiments and their interpretations, while the latter goes further by asserting that all phenomena are natural. Religious naturalists tend to be both methodological and metaphysical naturalists, but some are far from dogmatic with respect to either. Many religious naturalists might also be described as *scientific materialists* because they perceive no compelling evidential or rational case for the supernatural, the soul, or the nonmaterial mind, and proceed on the basis that everything is ultimately constituted of matter and energy, even if these manifest themselves in extraordinarily complex, emergent forms.

To understand what *religious* denotes in the present context, and to set this project in its philosophical context, is a more complex task involving the three philosophers widely cited as forefathers of current RN: William James (1842-1910), John Dewey (1859-1952), and George Santayana (1863-1952).⁵⁵ But before examining their contributions to RN, it is worth noting that, before these three, it was probably Thomas Carlyle who pondered most directly, and at most length, the combination of scepticism towards supernatural accounts with a strong religious sensibility. For Carlyle, writing a couple of decades before Matthew Arnold stood disconsolately on Dover Beach, Samuel Johnson and David Hume were:

⁵⁵ See Crosby and Stone, *The Routledge Handbook of Religious Naturalism*, and Jerome A. Stone, *Religious Naturalism Today: The Rebirth of a Forgotten Alternative* (Albany: State University of New York Press, 2008).

the two half-men of their time: who should combine the intrepid Candour and decisive scientific Clearness of Hume, with the Reverence, the love and devout Humility of Johnson, were the whole man of a new time.⁵⁶

Indeed, Carlyle almost certainly considered his vocation the blending, in the nineteenth century, of these two perspectives of the eighteenth. He felt that a religious temperament was fundamental to human nature, but that in the nineteenth century this impulse was misdirected towards outdated creeds or commercial greed.⁵⁷

Turning now to James, Dewey and Santayana, I will focus on several themes relevant to today's RN and EC, namely their epistemological orientation, their understanding of the relationship between beliefs and experience, and their views (where apparent) on transcendence versus immanence. I will also examine how their perspectives on idealism underpin current RN projects. In the final section of this chapter, I will show why it is now important to consider their insights in the light of the advances in AEC to which they did not have access.

William James's Contribution to Today's RN

In his famous study *The Varieties of Religious Experience* (1902), James focused on experience and its constitutive psychological states and attitudes. In doing so, he suggested that emotional experience is emancipated from the specific propositions to which they might appear conjoined:

⁵⁶ Thomas Carlyle, *Collected Works: The Centenary Edition of the Works of Thomas Carlyle* (London: Chapman and Hall, 1896-99), p.130

⁵⁷ Wilson, *God's Funeral*, pp.60, 77. Wilson names Benjamin Jowett as a Victorian realisation of this cast of mind: 'Throughout his life Jowett was that rather attractive mixture, a person of profound religious feeling and a sceptical cast of mind. Neither the pious emotions nor the intellectual questions could be satisfied with the mere toeing of some English Church party line, High or Low.' (p.120)

It is notorious that facts are compatible with opposite emotional comments, since the same fact will inspire entirely different feelings in different persons, and at different times in the same person; and there is no rationally deducible connection between any outer fact and the sentiments it happens to provoke. These have their source in another sphere of existence altogether, in the animal and spiritual region of the subject's being.⁵⁸

Similarly, in the same volume he expresses his belief that 'feeling is the deeper source of religion, and that philosophic and theological formulas are secondary products, like translations of a text into another tongue.'⁵⁹ In making this distinction between facts (or proposed facts) and sentiments, James pre-empts, as I shall discuss below, an essentially identical distinction made more famously by Dewey. Both thereby underpin the *idée fixe* of my own project – testing how far the distinction might hold.

Where we part company, and where he likewise departs from current religious naturalists, is on his evaluation of evidence and his estimation of naturalism. For James, beliefs have consequences not just for the believer but for the thing believed in.⁶⁰ Moreover, in considering the nature of belief he made a distinction similar to that of Graham Ward between dispositions and propositions:

⁵⁸ William James, *The Varieties of Religious Experience: A Study in Human Nature* (Amherst, NY: Prometheus Books, 2002), p.150

⁵⁹ James, *The Varieties of Religious Experience*, p.431

⁶⁰ For example, he writes in his essay *The Will to Believe*: 'In this case [believing one can leap an abyss] the part of wisdom clearly is to believe what one desires; for the belief is one of the indispensable preliminary conditions of the realization of its object. *There are then cases where faith creates its own verification.*' (p.97, James's emphasis); and 'The belief creates its verification. The thought becomes literally father to the fact, as the wish was father to the thought.' (pp.102-3). *The Will to Believe: and Other Essays in Popular Philosophy* (New York and London: Longmans, Green and Co., 1896).

Our impulsive belief is here always what sets up the original body of truth, and our articulately verbalized philosophy is but its showy translation into formulas. The unreasoned and immediate assurance is the deep thing in us, the reasoned argument is but a surface exhibition. Instinct leads, intelligence does but follow.⁶¹

In doing so he does not abandon the importance of belief as proposition. His pragmatism involved choosing a philosophy – if the evidence for it is no worse than the alternatives – on the basis of its positive moral and emotional consequences. This is belief defined as proposition, consciously chosen.

However, I regard his conclusion that the evidence is equally weighted as dubious, as would religious naturalists, rather obviously, given their commitment to naturalism. Moreover, James, like ACAN advocates, swiftly rejects the possibility that naturalism might be the basis for an affectively positive worldview, and indeed makes some questionable assumptions about what naturalism ineluctably entails:

Let our common experiences be enveloped in an eternal moral order; let our suffering have an immortal significance; let Heaven smile upon the earth, and deities pay their visits; let faith and hope be the atmosphere which man breathes in; - and his days pass by with zest; they stir with prospects, they thrill with remoter values. Place round them on the contrary the curdling cold and gloom and absence of all permanent meaning which for pure naturalism and the popular science evolutionism of our time are all that is visible ultimately, and the thrill stops short, or turns rather to an anxious trembling.⁶²

⁶¹ James, *The Varieties of Religious Experience*, p.74. Graham Ward's distinction between belief as disposition and belief as proposition can be found in *Unbelievable: Why We Believe and Why We Don't* (London and New York: I. B. Tauris, 2014), p.12.

⁶² James, *The Varieties of Religious Experience*, p.141

This conclusion about naturalism led him to choose religion for pragmatic reasons, underpinned by his judgment that the evidence for either position was roughly balanced. As I will examine in more detail later in the thesis, his interpretation of naturalism is not the only one available. Not only is it contested by RN, but it was not the position taken by Dewey or Santayana. I regard the affective potential of naturalism as a matter to be tested, hence the focus of the current project.

Given his denigration of naturalism, James's position on transcendence versus immanence is not surprising. For James, it is not mere pragmatism that makes him favour religion: he believed that there is another realm in which meaning resides, and in *The Varieties of Religious Experience* understands examples of epiphany as being in touch with that realm. The common pattern that he discerns in religious experience represents, for James, evidence for something transcendent. James rejected monism as the belief in a 'block universe.' Instead, he referred to religion being fundamentally about belief in an 'unseen order,' a view which might be compatible with either transcendence or immanence but sits more easily with the former:

Were one asked to characterize the life of religion in the broadest and most general terms possible, one might say that it consists of the belief that there is an unseen order, and that our supreme good lies in harmoniously adjusting ourselves thereto.⁶³

Indeed, James was prepared to elaborate on what that something is. He concluded that:

⁶³ James, *The Varieties of Religious Experience*, p.53

Beyond each man and in a fashion continuous with him there exists a larger power that is friendly to him and to his ideals. All that the facts [of religious experience] require is that the power should be both other and larger than our conscious selves.⁶⁴

Against monism, James held that God – or some such being or power – exists within the universe, with other beings separate from Him.⁶⁵ He further entertained the possibility that some people might be able to communicate with that other plane, hence him being a founding member and vice president of the American Society for Psychical Research. By contrast, my position, like that of current religious naturalists, denies that there is sufficient evidence to assume another realm, and so is restricted to what might arguably be termed types of immanence rather than transcendent, dualistic rupturings.

While his interest in psychic potential was very much of its time, James's theory of emotions, like his psychology, was in many ways ahead of his peers, even though so much has been learned in the interim. Moreover, despite believing in a soul, he was no simple Cartesian dualist, making no firm distinction between mind and body and questioning the notion of the subject. However, James is less current in his human exceptionalism, as exemplified in his account of human consciousness and the efficacy of human thought. Current religious naturalists and EC scholars are more wary of such distinctions, benefiting as they do from the vast body of animal studies over the past century.

William James therefore bequeathed to today's RN a focus on experiences deemed religious rather than particular beliefs. And while RN generally rejects a pragmatism that includes the suggestion that the evidence for naturalism and supernaturalism is balanced, RN does follow

⁶⁴ James, *The Varieties of Religious Experience*, p.525

⁶⁵ Lewis White Beck. *Six Secular Philosophers* (Bristol: Thoemmes Press, 1997), p.110

James's more essential pragmatist concern with adopting socially and emotionally valuable philosophies:

Although all the special manifestations of religion may have been absurd (I mean its creeds and theories), yet the life of it as a whole is mankind's most important function.⁶⁶

Similarly, he asserted in *The Will to Believe* that 'the most interesting and valuable things about a man are his ideals and over-beliefs. The same is true of nations and historic epochs.'⁶⁷ For James and other leading pragmatists, beliefs had consequences, so that if one believed that life was meaningful one would be more likely to lead a meaningful life, and vice-versa. In other words, beliefs about reality change reality itself. And as we shall see, this celebration of the ideal was to reach its apogee with Santayana.

John Dewey's Contribution to Today's RN

Dewey's explicit discussion of the word *religions* is foundational for RN. His epistemology was essentially modern – a concern with truth claims rather than the more current interest in the whole patterning of a worldview and its emergent effects. He was also committed to scientific principles: a strong Darwinist, he thought that science needed to penetrate further into other areas, particularly education. Like Johann Herder and Friedrich Schelling, he cultivated a nature philosophy not unlike pantheism but with an even firmer commitment to the scientific worldview.⁶⁸ Current religious naturalists agree with such a commitment to mainstream science. By contrast, those in a strongly anti-foundationalist tradition, having observed that there are innumerable ways to perceive and interpret the world, proceed to over-reach where they assert

⁶⁶ William James, *The Letters*, vol. II (ed. Henry James III) (Boston: Atlantic Monthly Press, 1920), p.127

⁶⁷ James, *The Will to Believe*, p.xiii

⁶⁸ Crosby and Stone, *The Routledge Handbook of Religious Naturalism*, p.56

that all such views are equally valid. It is perfectly possible to reject this relativism while focusing more on holistic effects than truth claims, as that tradition tends to do.

The critical Dewey passages for our context come from *A Common Faith* (1934):

The heart of my point...is that there is a difference between religion, a religion, and the religious; between anything that may be denoted by a noun substantive and the quality of experience that is designated by an adjective.⁶⁹

Dewey is making a distinction between *religion* as a category or particular belief system on the one hand and *religious* as a ‘quality of experience’ or ‘attitude’ on the other.⁷⁰ It is, moreover, to make a distinction between the content of what is believed on the one hand and the affective orientation – or indeed the affects themselves – on the other.

He goes on reverse a frequently assumed causal direction between a *religion* and *religious* attitude or experience:

It is the claim of religions that they effect this generic and enduring change in attitude. I should like to turn the statement around and say that whenever this change takes place there is a definitely religious attitude. It is not a religion that brings it about, but when it

⁶⁹ Dewey, *A Common Faith*, p.3

⁷⁰ Dewey also referred to ‘religious elements of experience’ instead of ‘religious experience,’ thereby avoiding the notion of religious experience as ‘something *sui generis*’ (*A Common Faith*, pp.10, 13-14). I note the strong argument that the category ‘religion’ is a modern construction, and that this has been the subject of some prominent debates. However, this is not crucial for my point here. See e.g.

Russell McCutcheon, *Manufacturing Religion: The Discourse on Sui Generis Religion and the Politics of Nostalgia* (New York: Oxford University Press, 1997)

Timothy Fitzgerald, ‘A Critique of “Religion” as a Cross-Cultural Category,’ *Method and Theory in the Study of Religion* 9(2), 1997, pp.91–110.

Brent Nongbri, *Before Religion: A History of a Modern Concept* (New Haven and London: Yale University Press, 2013)

occurs, from whatever cause and by whatever means, there is a religious outlook and function.⁷¹

In other words, it is not that existing religious creeds or customs cause one to have a religious attitude, but that religious attitudes exist in any case. And whatever their source, they shape religious propositions and structures. While Dewey does not use the word ‘shape’ or ‘cause,’ it is evident from the passage as a whole – especially the desire to ‘turn the statement around’ - that this is his meaning.

It is worth noting here what Thomas Nagel calls *the religious temperament*, since it is similar to what Dewey was getting at when referring to religious *attitude*. Nagel defines this temperament, which many people possess regardless of their particular beliefs or lack of them, as ‘the significant element of yearning for cosmic reconciliation that has been part of the philosophical impulse from the beginning.’ It is:

the aspiration...to live not merely the life of the creature one is, but in some sense to participate through it in the life of the universe as a whole.⁷²

The extent to which this yearning can be *satisfied* by RN is my central concern, but the existence of this yearning itself is common to naturalists with a religious attitude or temperament, whether or not they are reticent about using the term *religious* to describe their own perspective.

⁷¹ Dewey, *A Common Faith*, p.17 (emphasis in the original)

⁷² Thomas Nagel, *Secular Philosophy and the Religious Temperament: Essays 2002-2008* (New York: Oxford University Press, 2010), pp.3, 6. The desire for ‘cosmic reconciliation’ is a theme for many great philosophers, such as Nietzsche’s references to a craving for ‘primal unity.’ See *The Birth of Tragedy* (Mineola, NY: Dover Publications, 1995), pp.10-11, 14, 19.

Dewey's dualist distinction between *religion* as explicit belief and *religious* as a quality of experience appears too abrupt in the light of recent scholarship. As mentioned above, Graham Ward, in his book *Unbelievable* (2014), is one of those who understands belief as existing at a less conscious level. Before judgments, before propositions, there are unconscious cultural and physiological biases. Prior to our conscious attention and to rationalisation there are certain dispositions and impressions that influence and constrain our subsequent judgments. Believing in this sense is separate from the form that conscious religious belief takes.⁷³ The 'virtual reality' that human beings create through their explicit categories and symbols is therefore preceded by what is another virtual reality, insofar as the unconscious instincts and impressions are themselves species-specific (and indeed individual-specific) orientations, and thus constitute a filtered, or virtual, reality rather than an unfiltered reality.⁷⁴ This framework of virtual realities – which is not without its difficulties - is one to which I will return in later chapters, but for now, Dewey's distinction holds if we understand that he is defining beliefs as being at the level of conscious propositions.

Is it really justified to define 'religious' in this way, so that it has no necessary connection to a belief in some proposition? It is indeed, for two main reasons. The first is that the religious attitude or temperament and its accompanying affects may be sufficiently similar, for naturalists and others, to those experienced by followers of traditional religion.⁷⁵ Clearly the notion of traditional religion, and the extent to which its adherents experience patterned affects, are complex matters, but our purposes require only the rather banal observation that many followers of, say, the great religions, claim that their beliefs (and not just any rituals through which they are conveyed) are associated with emotional states or experiences that they deem to be significant.

⁷³ Ward, *Unbelievable*: pp.12, 81

⁷⁴ Ward, *Unbelievable*, p.49

⁷⁵ Crosby and Stone, *The Routledge Handbook of Religious Naturalism*, p.27

Naturalists, including those who have at some point held traditionally religious beliefs, make similar claims. There is no need to engage with the far more challenging - perhaps unanswerable - question of whether the emotional experiences are essentially identical.⁷⁶

The second reason why defining *religious* in this way is warranted is the evolutionary order of events. This would appear both to support the veracity of Dewey's distinction and to help explain its origins. The essential biological constituents of our emotional systems are crucial to experiences deemed religious, whatever else goes into producing them. Those constituents can only be understood in timeframes that long antedate those of anatomically modern humans and their concepts. Hence, the biological structures necessary for the emotions associated with religious experience are far older than any existing system of propositional beliefs (I will discuss those structures and their consequences in Chapter 2).⁷⁷

This is not to say that there was some stable set of emotions amounting to religious experience from early in our hominid ancestry and that we have been biologically stable ever since. Beliefs, words, and other cultural phenomena have altered human beings genetically and bodily,⁷⁸ and epigenetics suggests that they may also do so in the course of individual lives. Dewey was therefore mistaken if, by reversing the causal arrow, he meant that it was a purely unidirectional process. It is a dynamic process where propositional beliefs affect religious experience and vice-versa in complex ways. This dynamism does not pre-empt the answer to the question of the relative freedom of religious experience from specific beliefs; it only says that there must be some kind of influence in each direction. However, even in contexts where infants

⁷⁶ I do not claim that all emotions relating to religion are necessarily 'strong' emotions. Buddhism would be problematic here, for instance, as would some Christian orientations.

⁷⁷ For a detailed scientific analysis of the similarities between the emotional systems of humans and other mammals, see Jaak Panksepp and Lucy Biven, *The Archaeology of Mind: Neuroevolutionary Origins of Human Emotions* (New York and London: W. W. Norton and Company, 2012)

⁷⁸ Lindon B. Eaves, "'Ought' in a world that just 'is'." In W. B. Drees (ed.), *Is Nature Ever Evil? Religion, Science and Value* (London: Routledge, 2003), pp.284-309

and indeed embryos are influenced by a strong existing religious culture long before they can understand or articulate it, there is nevertheless a range of affects experienced by infants and children which only become associated with specific ideas through increasing exposure. It is therefore right to afford such affects a certain ontogenetic primacy over religion (as a category or organisation or specific set of beliefs) in addition to their evolutionary, or phylogenetic, primacy.

It should now be apparent why *spiritual* naturalism is less apt than *religious* naturalism. *Spiritual* might be a less contentious word, but it carries connotations of spirits in some separate, non-natural realm. It is, in other words, suggestive of a dualist anthropology inconsistent with naturalism as I have defined it. Moreover, *spiritual* does not have the gravitas required; *religious* is the only word with the required weight, and for the reasons given above, my understanding of *religiousness* and *the religious temperament* is of a natural and ancient phenomenon which is not the preserve of specific religions.

Dewey's distinction suggests that we should classify RN as a *philosophy* founded upon the detachment of 'religiousness' from any specific 'religion,' but a philosophy which its followers often develop mythopoeically into a more comprehensive, life-orientating worldview.⁷⁹ In calling RN a philosophy I therefore go a little further than Crosby and Stone, whose definition of RN I quoted in the introduction as 'a *movement* that asserts the possibility and desirability of a robust religious/spiritual life without recourse to the supernatural, whether deity, soul, or heaven.'⁸⁰ Their definition paraphrases Dewey's distinction, but alights on the sociocultural ('movement') rather than intellectual ('philosophy') element. RN may be described as a movement, but it has a defining philosophy.

⁷⁹ The earliest use of 'mythopoesis' (or 'mythopoeisis') – meaning the creation of a myth or myths - is attributed to Charles Francis Keary (1848-1917) in his book *Primitive Belief among the Indo-European Races* (London: Longman's, Green, 1882)

⁸⁰ Crosby and Stone, *The Routledge Handbook of Religious Naturalism*, p.7. My emphasis.

It is worth noting an alternative potential classification of RN. This is to interpret it as a literary genre, with origins in pastoralist or transcendentalist writings or even in classical works such as Lucretius's *De Rerum Natura* and perhaps Virgil's *Bucolics*. These literary traditions entail affective responses to the natural world, and I will be examining such responses over the course of this project. However, the notion that RN is a literary genre is less satisfactory than its classification as a movement or – even better – as a philosophy. This is because, while RN almost always includes affective responses to the natural world, this orientation is not strictly necessary. It is theoretically possible for RN to eschew bucolic idylls or majestic wildernesses while maintaining both its naturalist philosophy and its religious responses. Considering RN primarily as a philosophy is also more suitable because of the inspirations that it has taken from the philosophies of James, Dewey and Santayana.

It should now be apparent why Dewey's distinction is foundational to RN. It explains why it is not oxymoronic to say that some people are religious, but have no religion. It is why George Tyrrell could write: 'We do not need to prove religion to men, but to prove to them that they are religious.'⁸¹ And it is why Einstein was able to invoke a 'deeply religious nonbeliever.'⁸² However, the distinction leaves open the more general question of the relationship, if any, between a specific set of ideas and a set of affects. What patterns, if any, exist? Are these two phenomena really so unrelated that *any* attitudes and experiences are associable with *any* set of propositional beliefs? In other words, are cosmologies emotionally elastic, or do ideas have inherent affective correlates? This is what I will be investigating throughout the thesis in the particular context of RN and the role of AEC.

⁸¹ Quoted in opening pages of Ray Billington, *Religion Without God* (London and New York: Routledge, 2002)

⁸² 'Man wird zum tief religiösen Ungläubigen' ('One becomes a deeply religious nonbeliever'). Einstein to H. Mühsam, 30 March 1954. Einstein Archive, reel 38-434.

In doing so, it is valuable to assume a ‘worst case scenario’ for naturalism. By this I mean that we assume an epistemologically stingy naturalism that does not admit even the possibility of anything existing beyond matter and energy. Some religious naturalists take such an uncompromising position and some do not, but with this premise we gain something akin to a scientific ‘control’ against which to test the hypothesis. This is, of course, far from a perfect experiment: the main contaminant is the fact that ideas and narratives cannot be isolated from various other affective influences, including individual histories and ritual practices. However, if it is possible to associate attitudes and experiences deserving of the term *religious* to a naturalist cosmology limited to matter, energy, and its emergent properties and forms (including astonishingly complex, dynamic assemblages such as human beings thus understood) then we might conclude that a strong Deweyan distinction is at least possible.

George Santayana’s Contribution to Today’s RN

Santayana’s main contribution to RN was in identifying the significance of religious beliefs with their power as *ideals* rather than purported physical realities. Religious naturalists have built upon this notion, knowingly or not, in ways that I will explore throughout this project. For now it is important to understand Santayana’s position on ideals and how this relates to those of James and Dewey.

James argued that beliefs about reality change reality itself, using the example, in *The Will to Believe*, that one’s faith in being able to jump over an abyss induces changes in physical and mental preparedness which make one more likely to succeed.⁸³ Dewey’s perspective on idealism was less ambitious: echoing Feuerbach, he suggested in *A Common Faith* that the word ‘God’

⁸³ James, *The Will to Believe*, p.97

should be understood as a group of ideals created by the human mind.⁸⁴ ‘God’ is, in his pithy phrase, ‘a union of ideal ends with actual conditions.’⁸⁵ Indeed, he saw other fundamental human concepts as ideals too: ‘The *whole* self is an ideal, an imaginative projection.’⁸⁶ However, he did not acclaim these ideals to the extent that James had done.

The significance of Santayana’s position is that he combined a Jamesian celebration of the positive consequences of ideals with more Deweyan naturalist convictions. On the latter, it is perhaps unexpected that Santayana was arguably less deeply steeped in natural facts, including biology, than James, who trained as a medical doctor and taught anatomy. And I note in this regard that Santayana opened his book *Interpretations of Poetry and Religion* (1900) with a discussion of the Aristotelian five senses, a framing that appears primitive today where proprioception, the vestibular system, and arguably other faculties supplement the original quintet.⁸⁷ Yet the breed of naturalism on which Santayana settled turns out to align with the current scientific mainstream – at least in its emergentist variety - and is similar to that of many religious naturalists: he referred to reality as ‘matter’ and believed that everything needed to be understood by recourse to natural phenomena, while recognising that there need be no *a priori* favouring of the categories used by the natural sciences. He argued that physics, like any other perspective, is an abstraction from reality, and there are facts in the social sciences and humanities that are consistent with those of the natural sciences without requiring use of the same categories. ‘Nature’ and ‘Culture’ are not to be opposed: according to one of Santayana’s acolytes, ‘nature produces culture just as soil produces flowers.’⁸⁸

⁸⁴ Dewey, *A Common Faith*, pp.42-43. Dewey was writing shortly after Aldous Huxley had suggested God was a merely a projection of the human personality. See his essay ‘One and Many’ in *Do What You Will* (London: Chatto and Windus, 1929).

⁸⁵ Dewey, *A Common Faith*, p.51

⁸⁶ Dewey, *A Common Faith*, p.19 (emphasis in the original)

⁸⁷ George Santayana, *Interpretations of Poetry and Religion* (New York: Harper, 1957), pp.1-3

⁸⁸ Discussed in Beck, *Six Secular Philosophers*, pp.115-16. The ‘nature produces culture’ argument is sometimes currently framed in terms of the ‘extended evolutionary synthesis.’ See e.g.

Kevin N. Laland *et al.*, ‘The extended evolutionary synthesis: its structure, assumptions and predictions,’ *Proceedings of the Royal Society B*, Volume 282, Issue 1813, 2015.

Santayana's progress towards idealism therefore rested on stronger naturalist convictions than those of James, for whom there was another realm to which some have access. Santayana may still have tended towards transcendent rather than immanent conceptions, but these are more opaque than for James. Santayana apparently assumed a spatial dynamic whereby humans try to get above their current state. As such, one might argue that he worked within an Emersonian transcendentalism, even though he devotes a chapter of *Interpretations* to a critique of Emerson.

To reach Santayana's interpretation of idealism, we must appreciate his critique of the Enlightenment. It was not just that the likes of Voltaire (and later Marx) were biased against religion, but that they conceived of humans as rational beings for whom the only alternative to superstition was literal truth. Santayana chose to roam the vast territory in between – what he called, in *The Life of Reason* (1905-6), 'the habits of thought from which those tenets [of religion] sprang, their original meaning, and their true function.'⁸⁹ From these explorations, Santayana came to a very different conclusion than James, namely that 'the idea that religion contains a literal, not a symbolic, representation of truth and life is simply an impossible idea.'⁹⁰ However, this did little to undermine religion's importance. For Santayana, the premise of the ontological argument is correct - God is a perfect being - but its conclusion is false because God does not exist other than as 'a creation of spirit.'⁹¹ And following this disbelief in a literal God, it was easy for Santayana to alight upon a position not unlike Dewey and James in terms of the separation of

Eva Jablonka and Marion J. Lamb, *Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life*. Revised edition (Cambridge, MA and London: MIT Press, 2014).

⁸⁹ George Santayana, *The Life of Reason* (New York: Chas. Scribner's Sons, 1954), p.179

⁹⁰ George Santayana, *Interpretations of Poetry and Religion* (ed. William G. Holzberger and Herman J. Saatkamp Jr. (Cambridge, MA: MIT Press, 1989), pp.97-98. In language that now appears rather distasteful, Santayana continues to criticise 'those strange and fraudulent Hebraic pretensions,' and argues that one cannot expect anyone to adopt a religion other than that of one's own culture any more than one can expect them to adopt another language.

⁹¹ Beck, *Six Secular Philosophers*, p.127

specific propositional beliefs from religious experience: ‘Each man may have his own loves, but the object in each case is different. And so it is, or should be, in religion.’⁹²

Thus we arrive at Santayana’s most important contribution to RN: the potential fusion of the real, understood naturalistically, and the ideal. One could argue that in respecting the value of religion as an ideal, Santayana is adopting an anti-foundationalist position, especially when combined with his holist discouragement of those who would cherry-pick from a religious complex while discarding those parts to which they do not subscribe. However, this was not because Santayana was unconcerned with matters of truth, or rejected them in principle: as noted above, he believed in facts of nature.

There are two further, interrelated contributions of Santayana to the RN themes upon which I will focus. The first is his book *Interpretations of Poetry and Religion* and how he understands their relation. While RN is – I have argued – first and foremost a *philosophy* based upon important thinkers such as Dewey, James, and Santayana, its manifestation as a literary movement is currently more influential than its presence as an organised community. The critical passage is as follows:

Yet religion in all these cases differs from a mere play of the imagination in one important respect; it reacts directly upon life; it is a factor in conduct. Our religion is the poetry in which we can believe. Mere poetry is an ineffectual shadow of life; religion is, if you will, a phantom also, but a phantom guide.⁹³

⁹² George Santayana, *The Life of Reason: Reason in Religion* (Project Gutenberg e-book, 2005), p.98

⁹³ Santayana, *Interpretations of Poetry and Religion* (1957), pp.25-26

Wallace Stevens was among the poets who took inspiration from Santayana, but religious naturalists also tend towards poetic language. They are attempting to produce, in Santayana's terms, a poetry that is not merely shadow, but guide. As I will discuss in Chapter 3, David Abram explicitly undertakes a linguistic project intended to transport the reader into a psycho-physical state whereby they can more easily think and live in alignment with an ideal.

This religious requirement to align with an ideal is also pertinent to the other area where RN owes a debt to Santayana, namely his understanding of how ideals are conveyed through myths. Ideals are commonly cast as, and elaborated in, our myths and stories and their associated imagery. This is not their only manifestation: there is of course a broader pageantry of ritual and other behaviour that conveys the ideal. However, those behaviours are necessarily beyond my scope, and in any case they usually allude to myths in their turn.

Santayana explicitly makes this connection between ideals and myths. For example, the substance of Christianity was not, for him, about the alleged fact of the crucifixion. Rather, it lay in the moral significance of the mythical interpretation of the crucifixion as suffering and renunciation. The former is the subject matter of history, the latter of poetry, and such poetry is essentially unaffected by criticism of historical or scientific facts. For Santayana, 'human life is always essentially the same, and therefore a religion which, like Christianity, seizes the essence of that life, ought to be an eternal religion.'⁹⁴

Santayana therefore saw that myth functions to relate our experience to a larger frame: 'The supernatural was an allegory of the natural, and rendered the values of transitory things under the image of eternal existences.'⁹⁵ Paraphrasing Santayana, religious naturalist Jerome

⁹⁴ George Santayana, *Interpretations of Poetry and Religion* (Project Gutenberg e-book, 2005), Chapter IV

⁹⁵ Santayana, *Interpretations of Poetry and Religion* (1989), pp.62-63

Stone claims that ‘we are spiritual when we live in the presence of an ideal,’⁹⁶ and that this is enabled by myth because it acts ‘to present events in terms relative to spirit.’⁹⁷ This is the great value of myth for making our everyday existences and experiences meaningful. The use of human scales so necessary for this process can seem irrelevant and arrogant in contrast to the timeframes and distances revealed by astronomy,⁹⁸ yet the human scale has particular resonances, a challenge for RN that I will address in later chapters with reference to the potentially alleviating force of AEC.

In the different ways that I have discussed, Dewey, James, and Santayana all recognised that there is a genius in the way in which religious orientations connect the real with the ideal. It is the same capacity that Alfred North Whitehead and Jane Bennett refer to in more sombre tones when the former describes religion as ‘the ultimate ideal, and the hopeless quest,’⁹⁹ and the latter observes that humans ‘fail to live up to impossible ideals that alone can inspire them.’¹⁰⁰ Most importantly for our purposes, it underpins the motivation, and associated affectivity, of those whose lives involve the persistent engagement with an ideal or system of ideals. This is a theme to which I will return repeatedly over the course of the project.

Contemporary Religious Naturalism

Today’s religious naturalists are heirs to the philosophies of James, Dewey, and Santayana. They are indebted to James for their deep concern with the experiential, to Dewey for their alleged distinction between such experiences and the propositional beliefs of any religion, and to Santayana for their naturalistic appreciation of the rewards of ideals and mythic forms.

⁹⁶ Stone, *Religious Naturalism Today*, p.34

⁹⁷ Stone, *Religious Naturalism Today*, p.24

⁹⁸ Stone, *Religious Naturalism Today*, p.29

⁹⁹ Alfred North Whitehead, *Science and the Modern World* (New York: The Free Press, 1925), pp.191-92

¹⁰⁰ Bennett, *The Enchantment of Modern Life*, p.12

However, RN is – for want of a more suitable phrase - a broad church. In defining the late twentieth and early twenty-first century thinkers who might fall under its banner, I include advocates of orientations that I call connectionism and existentialism which, despite their differences, both derive religious experience from naturalist cosmologies. Connectionist authors stress our inextricable embeddedness within our organic - and in some cases inorganic – environments, and tend to view the universe as on balance favourable or even benevolent. By contrast, existentialists portray human beings as defiant creators of meaningfulness in the face of an unsympathetic universe. The former more commonly self-identify as religious naturalists than the latter, but I consider all of these authors as religious naturalists in their (albeit implicit) commitments to the precepts of James, Dewey, and Santayana.

Connectionism has its centre of gravity in American academia, where the most well-known living authors include Ursula Goodenough, Donald Crosby, Michael Cavanaugh, Chet Raymo, Jerome Stone, and Loyal Rue. Many of these figures are founders or coordinators of the Religious Naturalist Association, an international but still largely American organisation with a small membership of just a few hundred.¹⁰¹ Some religious naturalists suggest that there is a huge potential for RN latent in (particularly Western) populations. It is claim generally made without much empirical validation, even if some RN authors have enjoyed commercial success.

I include under the existentialist version of RN high profile figures such as Carl Sagan and Richard Dawkins who would resist the label ‘religious,’¹⁰² but whose book titles offer petards

¹⁰¹ It is worth noting that related but distinct philosophies such as pantheism may boast much greater numbers. However, while the World Pantheist Movement, for example, reportedly had over 162,000 Facebook members in 2016, Facebook group membership is not equivalent to organisational membership (https://en.wikipedia.org/wiki/World_Pantheist_Movement, retrieved 10 October 2019).

¹⁰² Though perhaps not if they understood the word in a Deweyan sense. It is clear from the explicit references to responses such as wonder and astonishment in the works of Sagan and Dawkins, as well as the celebratory ebullience of some of their writing, that they understand recognisably religious sensibilities and experiences to be free from supernatural creeds.

upon which they might justifiably be hoisted: Sagan's *The Varieties of Scientific Experience* (2006) is obviously a play on William James's *The Varieties of Religious Experience*, while Dawkins is not merely seeking commercial appeal with eye-catching titles such as *Unweaving the Rainbow* (1998) (paraphrasing Keats), *The Magic of Reality* (2011), and *An Appetite for Wonder* (2014). His association with RN might seem unlikely given his overt opposition to religion, but this is to overlook the astonishment, exuberance, and passionate commitment that suffuses his writing and speaking. I will consider in more detail in Chapter 5 the ways in which the different orientations represented by connectionism and existentialism might relate to individual affective preferences, and their influence on narrative plots.

Religious naturalists are frequently sympathetic or indeed actively committed to the environmental movement. This can be the case for both connectionism and existentialism, though it is arguably more consonant with the ecologically harmonising, nature-as-intrinsically-meaningful tropes of the former than the more muscular, nature-as-indifferent defiance of the latter. However, this common ecological concern does not inherently define RN insofar as its basic tenets in Dewey, Santayana, and James are concerned.

Some religious naturalists clearly perceive the value of ideals and their expression through myths. Philip Kitcher, for example, seeks to preserve the idealism of religion while ditching its falsehoods.¹⁰³ Loyal Rue is explicit about the mythic strategy in the title and content of his book *Amythia* (1989).¹⁰⁴ Brian Swimme and Thomas Berry, too, intentionally set out to

¹⁰³ Philip Kitcher, 'Beyond Disbelief,' in Russell Blackford and Udo Schüklenk (eds.), *50 Voices of Disbelief: Why We Are Atheists* (Chichester: Blackwell, 2009), p.94

¹⁰⁴ Loyal Rue, *Amythia: Crisis in the Natural History of Western Culture* (Tuscaloosa, AL: University of Alabama Press, 1989)

construct a myth in their book *The Universe Story* (1992), one that attempts to replace anthropocentrism with a biocentrism more suited to the needs of our age.¹⁰⁵

This mythopoeic character implies an acknowledgement that there is a genuine problem to be solved. In other words, RN authors would dispute the idea that the ACAN is unsurmountable, but they do not deny the premise that many people feel disenchanting or sense some other affective deficit, and that some of those people trace that lack to their inability to believe in supernatural propositions. Chapter 5 in particular will engage with the various forms in contemporary RN and expand the case for these being mythopoeic projects.

Affective Embodied Cognition and Meaningfulness

In the Introduction I stated my overall argument to be that RN is fundamentally concerned with developing meaningful myths founded on the discoveries of mainstream science; that AEC has an important role in enabling that difficult process; and that in doing so the ACAN can be overturned. I have started that journey by tracing the genealogy of RN and the ways in which its foundational philosophers variously sought to unify scientific convictions with the possibilities of idealism, myth, and those experiences justifiably termed religious. I shall have more to say on these themes throughout the project, but to build further the necessary platform for later chapters, I want to conclude the present chapter by beginning to explore the questions of why AEC destabilises the ACAN, and of what I intend by the word ‘meaningful.’

It would be possible to take an entirely linguistic approach to confronting the ACAN. I could, for example, focus on the actual arguments made by religious naturalists and others

¹⁰⁵ Brian Swimme and Thomas Berry, *The Universe Story: From the Primordial Flaring Forth to the Ecozoic Era – A Celebration of the Unfolding of the Cosmos* (San Francisco: HarperCollins, 1994)

against it.¹⁰⁶ But any argument, however logically persuasive, has limited impact and traction if it fails to engage our evolved emotional systems. As I will discuss, different ways of presenting these arguments will have different bodily consequences, and it is unlikely that an individual could find a logically persuasive narrative affectively sterile and yet consider it deeply meaningful. Linguistic approaches are also less appealing because they are rather well-trodden; the real opportunity lies in importing the findings of the materialist critique of the linguistic paradigm, and in particular the empirically validated advances in EC over the past thirty years or so. EC represents the latest iteration of the great Kantian project to establish what structures thinking, taking the position that the body, rather than language or anything else, is the cornerstone of our most fundamental categories and concepts.

Confronting the ACAN, I have suggested, necessarily entails testing Dewey's distinction between specific propositional beliefs and religious experience, which in turn involves the matter of the affective structure of ideas. The area of twenty-first century research most pertinent to the relationship between ideas and emotions is EC. It is a field that transgresses Descartes' mind-body boundary by studying – often empirically – the phylogenetic and ontogenetic emergence of this apparent interface. I will focus in particular on affective EC (AEC), which contends that all cognition is not only embodied but affective.

I will describe recent AEC theories relating to attention and imagination that suggest how narratives - read, heard, or recalled - engage our human emotional systems in patterned, if not predictable, ways. AEC research contributes to an understanding of the bodily consequences

¹⁰⁶ These can be briefly stated. The Problem of Alienation is often rebutted by showing that the universe as understood through scientific materialism can be at least as wonderful – at least as *enchanted* – as any supernatural cosmology. The Problem of Demotivation is disputed by highlighting the benefits that follow from crafting our own sense of purpose. The Problem of Oblivion is eased by celebrating the many advances we have made in overcoming the pain and horrors of existence, and in identifying ways through which we can attain forms of salvation, even if these do not involve conscious life after death (or by criticising what life after death might be like).

of what we pay attention to in our environment and extract for conceptual and narrative development; it reveals how ideas engage our motor systems; and it scrutinises the relationship between imaginative and bodily processes. My contention will be that the appreciation and intentional deployment of these understandings can help to counter the ACAN.

Consider the scenario of a slave, a labourer, and a religious pilgrim building a cathedral. Even if all of them undertake precisely the same activity, each may find it meaningful in different ways or not at all. Different concepts of ourselves, of others, of aspects of the world around us would appear to have major implications for our emotions and behaviour.¹⁰⁷ Here is an echo of Jamesian pragmatism, and specifically his argument in *The Will to Believe* that one's faith in being able to jump over an abyss induces changes in physical and mental preparedness which make one more likely to succeed.¹⁰⁸ AEC is the means by which we can peer 'under the bonnet' of what is happening, driven by the specific ideas chosen, how these are framed, and how they variously engage imaginative and bodily processes.

How does AEC inform our understanding of the 'meaning' and 'meaningfulness' that RN seeks to provide, but which the ACAN - through its component Problems of Alienation, Demotivation and Oblivion - asserts to be out of reach for naturalism? The concepts of 'meaning' and 'meaningful' are highly complex, and admit no simple definition. However, I reject 'meaning' in favour of 'meaningfulness' at the outset, because the former may imply that something has an inherent meaning or, at the other end of the spectrum, some ultimate or final meaning that is conferred on it by an external nonhuman source. 'Meaningful,' however, only suggests that something has meaning, or is significant, for somebody. This subjectivity should

¹⁰⁷ The cathedral examples is taken from Ford, *The Search for Meaning*, pp.18-19. Ford also quotes the writer Wayne Dyer: 'When you change the way you look at things the things you look at change.' (p.20)

¹⁰⁸ James, *The Will to Believe*, p.97

not be confused with an absence of pattern: there are clearly certain concepts, ideals, narrative structures, and indeed physical objects that have broader demographic impact than others.

Religious naturalists tend not to engage in detailed examinations of what ‘meaning’ or ‘meaningful’ denote. This is probably due to intended audience, length constraints, or awareness of the complexities that this entails. Instead, they point to a spiritual malaise in the modern West and its alleged downstream effects in depression, apathy, and pathologies, or in the addictions, fads, and quasi-religious preoccupations that seem to be trying to fill a void left by traditional religious beliefs.¹⁰⁹ A related framing is the suggestion that meaning results from satisfactory answers to ‘why?’ questions, and that many people today cannot find such answers.¹¹⁰ For Matthew Arnold and other ACAN advocates, satisfactory answers to ‘why?’ questions rely on supernatural entities. There is a frequent sentiment in RN that the whole issue of meaning is the central question of contemporary life.¹¹¹

These broad approaches to meaningfulness are not sufficient for my project, not only because they lack specificity, but because I must find a way to grapple with meaningfulness in an AEC context. Meaningfulness tends to be viewed through cognitive lenses, but AEC revolves around the evidence that everything cognitive is also affective. I will therefore argue that meaningfulness, though it takes imaginative and linguistic forms, begins with affect.

This theme will run alongside my analysis of how AEC is engaged – and might be engaged in future - by religious naturalists. In doing so, I will evaluate the conceptual and

¹⁰⁹ Indeed, this is a very common starting position for both religious naturalists and critics of modernity and science-based enthusiasm. See e.g. Loyal Rue, *Religion Is Not About God: How Spiritual Traditions Nurture our Biological Nature and What to Expect When They Fail* (New Brunswick, NJ and London: Rutgers University Press, 2005), and John Gray, *Seven Types of Atheism* (London: Allen Lane, 2018)

¹¹⁰ Ford, *The Search for Meaning*, pp.1-24

¹¹¹ Ford, *The Search for Meaning*, p.11

affective problems that arise for religious naturalists when they attempt to concoct myths from the ingredients of mainstream science, and when they try to fuse scientific accounts of the real with an ideal. Some of these difficulties might be partially alleviated by an intentional AEC. In a way, this carries forward, in an AEC context, Santayana's proposal in *The Life of Reason* that we must 'rediscover the origin of the gods, reduce them analytically to their natural and moral constituents, and then proceed to rearrange these materials, without any quantitative loss.'¹¹²

There is more to the gods than AEC, and yet, as the next chapter demonstrates, it may already be indefensible to analyse them without it.

¹¹² George Santayana, *The Life of Reason: Reason in Religion*. Ed. Marianne S. Wokeck and Martin A. Coleman (Cambridge, MA and London: The MIT Press, 2011), p.38. Charles Taylor makes a similar, though qualified, point: 'There is indeed no reason why switching from a theistic to a materialist account of reality should undercut our wonder at the universe, although the account of what property inspires wonder will be different, and will connect to different things for the theist and atheist, respectively.' Charles Taylor, 'Disenchantment-Reenchantment,' in George Levine (ed.), *The Joy of Secularism: 11 Essays for How We Live Now*. Princeton and Oxford: Princeton University Press), p.68.

CHAPTER 2

From Parts of the Brain to the Brain as a Part: The Integration of Thinking and Feeling in Affective Embodied Cognition

Coming to grips with your embodiment is one of the most profound philosophical tasks you will ever face.

– Mark Johnson¹¹³

It would be easy to dismiss Mark Johnson's claim as the gambit of an author seeking to seize the reader's attention on the first page of his book. One might similarly try to dispense with an opening page statement by Lawrence Shapiro, another key figure in EC, that 'at stake...are nothing less than profound and entrenched ideas about what we are – about what it means to be a thinking thing.'¹¹⁴ Johnson and Shapiro doubtless had reader engagement in mind, but their assertions will ring true for anyone who has delved deeply into the theoretical and empirical foundations for EC and proceeded to ponder the implications. By definition, EC dissolves traditional boundaries: it disrupts both the Cartesian separation of body and mind, and the rift between the human and the nonhuman. And as these authors suggest, this makes EC personal, a challenge to the identities of the vast majority of people, for whom a neater distinction exists between their thoughts and their bodies, and between themselves and the rest of the universe.

In this chapter I will develop an account of the relationship between EC and emotion that underpins the imaginative processes involved when we encounter narratives. In particular, I will propose that at the nexus of EC and emotion are a cluster of crucial insights that together can be called affective embodied cognition (AEC). The chapter forms the bridge between the characterisation of RN provided in the previous chapter and the remainder of the thesis, where

¹¹³ Mark Johnson, *The Meaning of the Body: Aesthetics of Human Understanding* (Chicago and London: University of Chicago Press, 2007), p.1

¹¹⁴ Lawrence Shapiro, *Embodied Cognition* (London and New York: Routledge, 2011), p.1

the capacity of AEC to overturn the ACAN will be tested. I will define emotion and affect and relate these to a conception of religious experience. I will summarise the origins, key thinkers, and subdivisions of EC, and clarify its vocabulary. I will establish those aspects of EC most relevant to my central question, particularly those where the affect nexus is important for understanding engagement with narratives. This will unify the chapter with earlier material by showing how AEC informs the themes developed in Chapter 1, thereby forming the basis for later analysis of specific texts. In doing so, I will show why Johnson's claim about the significance of EC is not mere hyperbole, and begin to expose the opportunities that this presents.

EC, emotion, religious experience, attention, imagination – these are vast topics. I will describe the key insights and theoretical frameworks from which I am constructing my own model. This will allow the reader to understand the remainder of the thesis, when I will apply the model. I will cite key debates and justify my chosen position, but for reasons of space and relevance to my themes, I will not engage with those debates at length. And while I will situate my own approach in the context of other scholars, this is best done later in the chapter once the key concepts and arguments around AEC are understood.

Emotions and Affects

AEC might be regarded as the latest attempt to forge, in the words of Melvin Konner, 'a synthesis of language and feeling in the depths of the great frontal lobe.' It interrogates this process (without being limited to the frontal lobe itself) and so goes to the core of Dewey's distinction between the *religious* as an attitude or sentiment and *religion* as propositional belief, and the alleged challenges for naturalism in achieving the former. 'A significant symbol stirs the

emotions,' writes Konner, but can naturalism really mobilise such symbols?¹¹⁵ I will begin by defining what I mean by emotions and affects.

Grappling with the ACAN entails an understanding of emotions and how they might intersect with different ideas and narratives. The emotions are now the focus of a huge amount of academic attention. Darwin had begun to engage with the subject seriously in *The Descent of Man* (1871) and *The Expression of the Emotions in Man and Animals* (1872, which had originally been intended as a chapter of the former) but the topic was then relatively neglected because of behaviourism and the cognitive paradigm. Only in recent decades can we talk of a flourishing 'affective science,' or indeed 'affective sciences,' covering everything from the hard biology of affective neuroscience to social psychology and, beyond, to a body of affect theory rooted firmly in the humanities. It is neither possible nor necessary to explore this territory in the space available, so I will limit these pages to what is strictly required for my thesis, namely, an articulation of the theories that I believe to be both well supported and critical to understanding how the emotion-cognition relationship operates in the context of naturalism.

There are many different schemas for defining affect, emotion, feeling, and related terms, and I will draw selectively on them to generate my own framework. I will use Donovan Schaefer's definition of *affects* – 'semistable, complex formations of embodied sensation that have coalesced through the advance of ancient evolutionary processes operating in deep time'¹¹⁶ – with the caveat that 'sensation' is not necessarily something of which we are fully aware. This qualification is important for two reasons. First, I include among *affects* the motor responses that form part of embodied simulation, which are usually not consciously experienced. Second, I will

¹¹⁵ Melvin Konner, *The Tangled Wing: Biological Constraints on the Human Spirit* (2nd edition) (New York: Henry Holt and Company, 2003), pp.167-68

¹¹⁶ Donovan O. Schaefer, *Religious Affects: Animality, Evolution, and Power* (Durham and London: Duke University Press, 2015), p.58

use Antonio Damasio's definition of *emotions* – 'an emotion-proper, such as happiness, sadness, embarrassment, or sympathy, is a complex collection of chemical and neural responses forming a distinctive pattern'¹¹⁷ – and Damasio does not regard these as necessarily fully conscious. He reserves the term *feelings* for the instances where emotions break into full awareness.¹¹⁸ Following Schaefer and Damasio, then, emotions are a subset of a broader category of affects, and neither need necessarily reach reflective consciousness. I will use *feelings* for any affects that *do* reach consciousness, as does Mark Johnson: 'Feelings are consciously experienced bodily processes.'¹¹⁹

Taking these definitions and approaching how they relate to cognition requires huge caution. First, any attempt to integrate cognition and affect presupposes the viability of these two words as distinct categories. The distinction may come easily due to the cultural influence of Cartesian boundaries, but in reality the categories are more fluid. Cognition need not necessarily be conscious, for example, while at an ontological level the strict naturalist interpretation would be to consider both cognition and affect as ultimately complex forms of matter and energy. Second, even if we can usefully distinguish the two, Iain McGilchrist points out that 'we are always obliged to "look at" the relationship of cognition to affect from the cognitive point of view.' Cognitive faculties are required to do so; indeed, 'quite what it would mean to treat it from the point of view of affect is less easily said, less easily even imagined.'¹²⁰ There is also the common contention that the human brain is the most complex structure in the known universe, and judged so even by many who do not take its various bodily and environmental entanglements into account. Those of a more reductionist bent might argue that a genuine appreciation of the cognition-affect relationship would involve solving the neural code, but EC might confound even that. Thus, the background conditions for examining the cognition-affect

¹¹⁷ Antonio Damasio, *Looking for Spinoza: Joy, Sorrow and the Feeling Brain* (London: William Heinemann, 2003), p.53

¹¹⁸ Antonio Damasio, *Descartes' Error: Emotion, Reason, and the Human Brain* (New York: Putnam, 2006), p.133

¹¹⁹ Johnson, *The Meaning of the Body*, p.59

¹²⁰ Iain McGilchrist, *The Master and his Emissary: The Divided Brain and the Making of the Western World* (New Haven and London: Yale University Press, 2009), p.186

boundary demand great humility, and I make no claim to developing more than a tentative model, based on some well-respected research, that is useful for my specific purposes.

EC in Context

I will now define, at greater length, EC in order to present my conception of AEC. EC entails the transition ‘from parts of the brain, to the brain as a part.’¹²¹ The brain is a part of the body, and the body is in turn part of an ecological - indeed cosmic - network. While cognitive science has tended to concentrate on how particular areas of the brain underwrite particular mental functions and operations, an important strand of EC focuses instead on how the bodily and broader environmental context of the brain shapes cognition. A second key strand of EC advances beyond computational models of mind by showing how mental representations are ultimately ‘grounded’ by our bodies, and how our physical form and its movements provide the foundational metaphors for our more abstract mental concepts. A third strand focuses on the imagination, and how it encompasses various physical dynamics in a process known as embodied simulation. I will examine these strands in more detail.

However, it is first worth pausing to reflect that EC not only challenges the dominant forms of cognitive science of the late twentieth and early twenty-first centuries.¹²² It engages deeper historical theories with which it is entwined, sometimes supporting them, but in other cases confronting them with rich empirical evidence. First, EC represents a direct assault on Cartesian dualism. Both the position that the mind and body are of different substance, and the argument that mind and body have limited if any influence on one another, had been difficult to sustain throughout the twentieth century, not least due to systematic physiological study and the

¹²¹ Kin Cheung, *Meditation and Neural Connections: Changing Sense(s) of Self in East Asian Buddhist and Neuroscientific Descriptions* (Temple University, ProQuest Dissertations Publishing, 2017), p.103

¹²² Shapiro, *Embodied Cognition*, p.1

appreciation of the great complexity and functionality of biological matter. The emergence of EC in recent decades added further detail to the knowledge of how functions previously categorised under ‘mind’ are shaped by the body, and shape it in turn.

Second, EC advances the Kantian project to grasp how mental structures shape our understanding of the world. It does so by investigating the role of the body in generating the fundamental categories and concepts that structure thought, revealing the ways in which our comprehension of the world reflects the idiosyncrasies of our particular bodies and perceptual systems.¹²³ Even without the empirical case for EC – which is now arguably overwhelming – the rational case is compelling due to the sequence of events in both evolutionary history and in the lives of individuals. In both cases, the capacity for complex mental conceptual processing arrives later than – and so must build upon and be shaped by – pre-existing physical structures. In other words, there is a fundamental phylogenetic and ontogenetic primacy of physical bodies over the kinds of conceptual and categorical structures scrutinised by Kant, even if these then co-evolve dynamically in both evolution and individual lives.

A third historical root concerns the relation between subject and object, particularly in phenomenology and with the work of Maurice Merleau-Ponty. In *Phenomenology of Perception* (1945), he argued that subjects and objects are abstractions. There is no hard boundary between the self and the other; instead, what we call people and things emerge from the interactive process of experience. Merleau-Ponty described a ‘horizon’ – a background – of fluid experience upon which ‘subjective’ and ‘objective’ are imposed, so that each of us is inseparable from the ‘flesh of the world.’¹²⁴ David Abram, whose writings I will analyse in the next chapter, essentially offers the religious naturalist extension of this philosophical tradition. It worth noting that John

¹²³ Shapiro, *Embodied Cognition*, p.55

¹²⁴ Maurice Merleau-Ponty, *Phenomenology of Perception*. Trans. Colin Smith. (London: Routledge and Kegan Paul, 1962), pp.58-61. See also Johnson, *The Meaning of the Body*, footnote 1, pp.20-21.

Dewey, whose foundational contribution to RN I examined in the last chapter, is not generally considered a phenomenologist, but he offers a similar perspective to Merleau-Ponty on subjects and objects as abstractions in *Experience and Nature* (1925).¹²⁵

These broader Cartesian, Kantian, and phenomenological contexts are important for ensuring that the common framing of EC within cognitive science does not underplay a more profound significance. EC moves on from these forebears in three different ways. It directly challenges Cartesian dualism both rationally and empirically; it is consonant with Kant's Copernican argument that mental categories structure our understanding the world rather than vice-versa, but delves deeper by showing how that which lies outside the brain shapes those categories (and various other processes) in turn; and it supports and extends the philosophies of Dewey and Merleau-Ponty through scientific research.

The First Strand of EC: Cognition as Embodied, Enactive, Embedded and Extended

I will now outline the three strands of *affective* EC (AEC) that will form the analytical basis for my evaluation of RN throughout the thesis. During the twentieth century, the main current in psychology transitioned from psychoanalysis to behaviourism to cognitive science. What I will call standard cognitive science respects a computational theory of mind, under which the brain hosts symbolic representations upon which mental processes act algorithmically. Cognition is seen to commence with an input to the brain and cease with an output from it, such that the investigations of cognitive science can be confined to in-head activities.¹²⁶ The dominant model initially developed by scholars such as Jerry Fodor and David Marr regards the mind as a computational device comprising transducers, modules, and central processors. Transducers alter

¹²⁵ John Dewey, *Experience and Nature* (Chicago: Open Court, 1925)

¹²⁶ Shapiro, *Embodied Cognition*, p.27

the perceptual input into a form that the modules can process with algorithmic equations. The central processors then integrate the many processed signals.¹²⁷

This paradigm still retains some respect in academia and infuses popular understandings, not least because of the profile of artificial intelligence and the interest in machine-human interfaces. However, it can be challenged on various counts: it emerges from the prevailing computer and machine metaphors of its original intellectual milieu; it aligns well with Enlightenment rationality but does not easily integrate the theory and biology of the emotions (indeed, its abstractions are curiously a-biological); the brain is an electro-chemical organ but the model sits far better with electrical binaries than chemical complexities; and it overlooks both history (evolutionary and individual) and culture. The particular challenge from EC is that the computational model gives little if any weight to the brute fact that the brain is an interconnected part of an organism that is itself an inseparable constituent of its environment. The different ways in which this is the case form sub-fields, or sub-theories, of EC, under which the brain is seen to be not just *embodied* but *enacted*, *embedded*, and/or *extended*. These theories are collectively known as ‘4E cognition,’ a phrase coined by John Protevi which has now become sufficiently established to merit *The Oxford Handbook of 4E Cognition* (2018).¹²⁸

Enactive cognition is generally traced to J. J. Gibson’s ecological theory of perception. Gibson noted that the detection of stimuli entails exploring the environment, and that the non-brain body parts involved in those activities are integral to processes of cognition. Body-world interactions therefore influence the quality of stimuli available for processing, and the brain acts

¹²⁷ Stephen T. Asma and Rami Gabriel, *The Emotional Mind: The Affective Roots of Culture and Cognition* (Cambridge, MA: Harvard University Press, 2019), p.37

¹²⁸ John Protevi, *Political Affect: Connecting the Social and the Somatic* (Minneapolis: University of Minnesota Press, 2009), p.25.

Albert Newen, Leon De Bruin, and Shaun Gallagher (eds.), *The Oxford Handbook of 4E Cognition* (Oxford: Oxford University Press, 2018)

more as a controller and organiser of activities than a computer that exclusively processes collected information.¹²⁹ Gibson's insights were elaborated by Francisco Varela, Evan Thompson, and Eleanor Rosch in what is now regarded as a central EC text, *The Embodied Mind: Cognitive Science and Human Experience* (1991). Their notion of 'embodied action' comprises a sensory-motor cycle where perception and action are inseparable, and not only interact but shape one another. Enactivism therefore rejects the idea that experience is the computational construction of an internal model of the world. Rather than downloading the world into our brains, the world is 'its own best model.'¹³⁰ Experience is an active exploration of the world, and 'cognition depends upon the kinds of experience that come from having a body with various sensorimotor capacities.'¹³¹

The theory of enactive cognition is closely related to – and often held in conjunction with – the notion of *embedded* cognition. The sensorimotor capacities emphasised in enactive theories are embedded in a wider biological, psychological, and cultural context.¹³² The structure of this environment, it is argued, shapes cognitive processes to a much greater extent, and in more unexpected ways, than has hitherto been recognised. And the manner of that embeddedness massively simplifies the cognitive load that the organism's brain would otherwise need to manage.¹³³ Note that this enactive-embedded stance is simultaneously idealist and realist: it is idealist because the world is 'perceiver-dependent,' but realist because we have similar bodily structures and are 'embedded' in a common context.¹³⁴ The term 'embodied realism' is sometimes used to refer to this position.

¹²⁹ Shapiro, *Embodied Cognition*, pp.49-50

¹³⁰ The notion of "the world as its own best model" is taken from Rodney A. Brooks, 'Elephants don't play chess,' *Robotics and Autonomous Systems* 6, 1990, p.5

¹³¹ Francisco Varela, Evan Thompson and Eleanor Rosch, *The Embodied Mind: Cognitive Science and Human Experience*. 2nd edition (Cambridge, MA and London: MIT Press, 2016), p.173

¹³² Varela, Thompson and Rosch, *The Embodied Mind*, p.173

¹³³ Shapiro, *Embodied Cognition*, p.194

¹³⁴ Shapiro, *Embodied Cognition*, pp.52-56

Extended cognition is arguably the most speculative of the 4E quartet. Its best known exponent, Andy Clark, claims that it is not merely that the rest of the body or aspects of the wider environment influence the mind; it is that they are themselves constituents of cognition.¹³⁵ Studies of gesture, for example, are taken to support this view. We tend to think of gesture as primarily about communication, yet experiments suggest that it contributes more directly to thinking processes, not least because we may still make gestures if blind, alone, talking on the phone, or positioned behind someone with whom we are communicating.¹³⁶ We may also perform differently at cognitive tasks such as problem-solving when required to make certain arm motions.¹³⁷ Facial movements, too, may play an important role in cognition: experiments reveal that reading another's facial emotions declines after botox eyebrow treatment, as does comprehension of sentences involving sadness and anger but not happiness, suggesting that unconstrained eyebrow movement facilitates certain cognitive processes.¹³⁸ I side with those who regard extended cognition as somewhat tentative because the more remote the processes are from the brain - and especially where these are outside the body - the more challenging it becomes to demonstrate that these are cognitive constituents rather than cognitive influences, albeit powerful ones.¹³⁹

¹³⁵ Andy Clark, *Supersizing the Mind: Embodiment, Action, and Human Extension* (Oxford and New York: Oxford University Press, 2008)

¹³⁶ Shapiro, *Embodied Cognition*, pp.173-74

¹³⁷ Karsten Werner, Markus Raab and Martin H. Fischer, 'Moving arms: the effects of sensorimotor information on the problem-solving process,' *Thinking and Reasoning* 25(2), 2019, pp.171-191

¹³⁸ David T. Neal and Tanya L. Chartrand, 'Embodied Emotion Perception: Amplifying and Dampening Facial Feedback Modulates Emotion Perception Accuracy,' *Social Psychological and Personality Science* 2(6), 2011, pp.673-678

D. A. Havas *et al.*, 'Cosmetic Use of Botulinum Toxin-A Affects Processing of Emotional Language,' *Psychological Science* 21(7), 2010, pp.895-900.

It is interesting to note in this respect that Darwin discussed the apparent cognitive and affective connections of the *corrugator supercilii*, the muscle which furrows the brow. Charles Darwin, *The Expression of the Emotions in Man and Animals* (New York: Penguin, 2009).

¹³⁹ Shapiro, *Embodied Cognition*, pp.159-60

John Protevi proposed that cognition is not only embodied, enactive, embedded and extended (4E), but affective (4EA). He remarks that ‘cognition and affectless rational calculation performed on representation can no longer be identified.’¹⁴⁰ While ‘4EA’ is already present in the literature, it is defined too specifically for my purposes, hence I will continue to use ‘AEC’ for the broader conception of the affective aspects of EC, including image schemas and embodied simulation.

Protevi’s observation that ‘affectless rational calculation...can no longer be identified’ was made in 2009, but it is not clear that it ever really could. William James had seen that:

The practically real world for each one of us, the effective world of the individual, is the compound world, the physical facts and emotional values in indistinguishable combination. Withdraw or pervert either factor of this complex resultant, and the kind of experience we call pathological ensues.¹⁴¹

A similar case can be made purely on evolutionary grounds. Philosophers such as David Hume, who had emphasised the great influence of the passions over reason, received a boost in the opening chapter of *The Expression of the Emotions in Man and Animals*, when Darwin claimed likewise for affect over cognition. Darwin quoted the French psychologist Guillaume Duchenne: ‘the senses, the imagination, and thought itself - elevated and abstract as we suppose it to be - cannot operate without arousing corresponding feeling.’¹⁴² In other words, it is not simply that affect influences cognition. It is inseparable. Darwin’s advance was to understand something of how that complex mixture arose, a story that we have since been able to elaborate: the brain is –

¹⁴⁰ Protevi, *Political Affect*, p.25. The opportunity existed for a neater ‘5E,’ with the fifth being “emotional,” but “affect” was preferred because of the different meanings that some scholars assign to these terms.

¹⁴¹ James, *The Varieties of Religious Experience*, p.151

¹⁴² Darwin, *The Expression of the Emotions in Man and Animals*, p.336

to use Gary Marcus's term - a 'kluge' whose higher processes did not arise spontaneously, but comprise pan-mammalian and indeed pan-vertebrate structures.¹⁴³ And higher processes did not just build *upon* pre-existing structures but, crucially, used them as construction materials. As Damasio concludes, 'nature appears to have built the apparatus of rationality not just on top of the apparatus of biological regulation, but also *from* it and *with* it.'¹⁴⁴

The AEC case therefore rests not only on abstract argument but on a large body of more direct evidence. One way to contextualise this, as suggested in the previous chapter and following the lead of various scholars to whom I will refer, is through the idea of humans operating on the basis of a number of 'virtual realities' constructed from different tiers of awareness. This is a flawed metaphor for a number of reasons: 'tiers' and 'levels' entail notions of 'higher' and 'lower' which can carry unintended value judgments; 'virtual' gives the impression of simulated reality rather than phenomenological reality; and the tiers are not only interlinked but thoroughly interfused. Indeed, *interfused lenses* would be a better description. However, if these qualifications are kept in mind it remains a useful framing device, not least because of the multiple appearances in the literature.

At the highest and most abstract level is the multitude of consciously held, propositional beliefs held by different cultures and different groups within them, from religious creeds to secular ideologies to other orientating frameworks of ideas. These are the 'beliefs' of everyday parlance, those to which Dewey was referring in his distinction between *religion* as belief and *religious* attitudes and sentiments. There is then what we receive through our senses, which amounts to a second virtual reality because our sensory apertures are very limited. The reality is distinct for each species, and indeed each individual because of variations in acuity due to genetic

¹⁴³ Gary Marcus, *Kluge: The Haphazard Construction of the Human Mind* (London: Faber and Faber, 2008)

¹⁴⁴ Damasio, *Descartes' Error*, p.128 (emphases in the original)

variation, age, or impairment. A seminal text here is *A Foray into the Worlds of Animals and Humans* (1934) by Jakob von Uexküll, which, despite its age, remains an elegant means by which to frame this level of virtual reality. Von Uexküll is counted as an early ethologist, a pioneering theoretical and cybernetic biologist, and an ancestor to biosemiotics.¹⁴⁵ In an explicit application to biology of Kant's distinction between the phenomenal and the noumenal, von Uexküll distinguished between the *Umwelt* and the *Umgebung*. Due to its particular sensory capabilities, an organism has access only to its *Umwelt*, but not to the *Umgebung* - the entirety of its surroundings. Donald Hoffman makes a similar argument about our everyday experience being a 'species-specific user interface between ourselves and a realm far more complex.'¹⁴⁶ This, then, is a level of virtual reality that follows from the facts of the particular sensory capabilities of *Homo sapiens*.

I will return to both these tiers – conscious, propositional beliefs and species-specific *Umwelten* - in later chapters. I raise them now in order to cast into sharper relief a third level, namely one that is constituted by various affective processes. Even though our species-specific senses are limited, the information available through them would overwhelm us were there not an affective filter operating largely beneath our conscious awareness.¹⁴⁷ Different scholars have emphasised different aspects of this in different ways, such that there is no simple way to integrate the whole. However, by summarising some of the most well-known contributions it is possible to grasp why these processes comprise, in aggregate, a robust argument that all cognition is affective. More specifically for my thesis, it will illustrate the processes by which

¹⁴⁵ Jakob Von Uexküll, *A Foray into the Worlds of Animals and Humans* (Tr. Joseph D. O'Neil) (Minneapolis and London: University of Minnesota Press, 2010), p.4

¹⁴⁶ Donald D. Hoffman's entry in John Brockman (ed.), *What We Believe But Cannot Prove* (London: Pocket Books, 2006), p.93.

See also Donald D. Hoffman, 'Non-veridical Perception,' in John Brockman (ed.), *What Have You Changed Your Mind About?* (New York: Harper Perennial, 2009), pp.75-77; and Donald D. Hoffman, 'Our Sensory Desktop,' in John Brockman (ed.), *This Will Make You Smarter* (London: Transworld, 2012), pp.135-38.

He elaborated this position recently in *The Case Against Reality: How Evolution Hid the Truth from Our Eyes* (London: Allen Lane, 2019).

¹⁴⁷ See e.g. Graham Ward, 'Aesthetics, Music, and Meaning-Making,' *Religions*, 10(3), 2019

concepts may become affectively loaded long before they are deployed in the narratives through which we communicate propositional beliefs.

When interacting with our environments we never encounter objects as detached observers. The pioneering work of J. J. Gibson, that key figure for later enactive cognition, proposed that the very act of perception involves detecting possibilities for interaction with the thing perceived. At the very point that an organism registers these possibilities – or ‘affordances’ - affects are involved.¹⁴⁸ For example, there is no gap between a thirsting mammal’s detection of water and of that water being a thirst-slaking phenomenon. Or consider the example provided by Stephen Asma and Rami Gabriel in their book *The Emotional Mind* (2019):

In the act of recognizing the rabbit...I am affectively or emotionally drawn (‘Oh, isn’t he cute?’ or ‘I’ll get that varmint!’) These positive and negative judgments are very tightly conjoined with our perceptions and slip into the psychological mix well ahead of the conceptual processing. These affective aspects are a part of the ‘seeing as’ core of perception.¹⁴⁹

The point is made even more colourfully by social psychologist Robert Zajonc:

Perhaps all perceptions contain some affect. We do not just see ‘a house’: we see ‘a handsome house,’ ‘an ugly house,’ or ‘a pretentious house.’ We do not just read an article...We read an ‘exciting’...‘important’...or a ‘trivial’ article...And the same goes for a sunset, a lightning flash, a flower, a dimple, a hangnail, a cockroach, the taste of

¹⁴⁸ James J. Gibson, *The Ecological Approach to Visual Perception* (Boston, MA and London: Houghton Mifflin, 1979)

¹⁴⁹ Asma and Gabriel, *The Emotional Mind*, p.171

quinine,...the color of earth in Umbria, the sound of traffic on 42nd Street, and...the sight of the letter Q.¹⁵⁰

Zajonc's cautionary 'perhaps' is unnecessary. This is not merely a theoretical argument, but one confirmed by studies of covert motor activity in perceivers: when we process images or names of manipulable objects motor activity is triggered, and the activity matches fixed patterns of interaction - so-called canonical affordances - with the objects concerned.¹⁵¹ This is crucial for understanding the affective richness of the imagination. As I will discuss below, the weight of this kind of empirical research now means that we should reinterpret imagination as an integrated mental-bodily activity, rather than just the former.

Affordances are not static: there is also the positive or negative *history* of interactions that an individual has with a particular object, or with similar objects. The best known account of this process is Damasio's somatic marker hypothesis (SMH), where somatic markers are emotions and feelings that are connected, by learning, to anticipated future outcomes of specific scenarios:

When a negative somatic marker is juxtaposed to a particular future outcome the combination functions as an alarm bell. When a positive somatic marker is juxtaposed instead, it becomes a beacon of incentive...You may think of it as a system for automated qualification of predictions, which acts, whether you want it or not, to evaluate the extremely diverse scenarios of the anticipated future before you. Think of it as a biasing device.¹⁵²

¹⁵⁰ R. B. Zajonc, 'Feeling and thinking: Preferences need no inferences,' *American Psychologist* 35, 1980, pp.151-175

¹⁵¹ Anežka Kuzmičová, 'The Words and Worlds of Literary Narrative: The Trade-off between Verbal Presence and Direct Presence in the Activity of Reading,' in ed. L. Bernaerts *et al.*, *Stories and Minds: Cognitive Approaches to Literary Narrative* (Lincoln, NE: University of Nebraska Press, 2013), p.117

¹⁵² Damasio, *Descartes' Error*, p.174

The result is what Michelle Maiese calls pre-reflective ‘affective framing,’ or ‘carving out,’ in which certain selections from the flow of experience are served up to consciousness.¹⁵³ Thus, in Damasio’s words:

Few if any perceptions of any object or event, actually present or recalled from memory, are ever neutral in emotional terms. Through either innate design or by learning, we react to most, perhaps all, objects with emotions, however weak, and subsequent feelings, however feeble.¹⁵⁴

Using quite different language and frames, some scholars have introduced highly influential concepts to distinguish between these unconscious, affect-infused processes at the lowest virtual reality tier and the deliberative thought of the highest. For example, Daniel Kahneman and Amos Tversky’s Nobel-prizewinning work on prospect theory involves a distinction between System 1 and System 2 thinking (or, in the title of Kahneman’s influential book, *Thinking Fast and Slow* (2011)), where the former refers to instinctive affect-based judgments and the latter to conscious analytical judgments. Another leading example is Iain McGilchrist’s distinction, based on brain lateralisation, between two forms of attention, the one a primarily affective, unconscious ‘global’ attentiveness to surroundings, the other a focused, conscious attentiveness towards something more specific. McGilchrist describes how ‘the left hemisphere interposes a simulacrum between reality and our consciousness,’ leading to the ‘increasing virtuality’ of human experience.¹⁵⁵ The significance of McGilchrist’s work is something to which I will return in Chapter 4.

¹⁵³ Michelle Maiese, *Embodiment, Emotion, and Cognition* (London: Palgrave MacMillan, 2011)

¹⁵⁴ Damasio, *Looking for Spinoza*, p.93

¹⁵⁵ McGilchrist, *The Master and his Emissary*, pp.402, 407

But it is Graham Ward who offers the most valuable frame for our purposes. While he does not use the terms ‘affordances’ or ‘somatic markers,’ he is referring to the same phenomena when he writes:

To appreciate more fully the critical role belief plays, we need to understand more how consciousness is always a seeing as. Because perception is always woven into a neural network of images, associations, memories and affects, we never see *as such*.¹⁵⁶

He goes on to quote Terrence Deacon: ‘We live in a world that is both entirely physical and virtual at the same time.’¹⁵⁷ Ward argues that we are used to conceiving of belief as *propositional* belief - that is, operating at the highest tier. However, it must also be considered at the lowest virtual reality tier, as *dispositional* belief, because we are continually making unconscious affective judgments and unconsciously filtering and highlighting (or ‘lowlighting’) aspects of our environment. We must therefore be careful in using Dewey’s distinction, because he is using *religion* to refer to top level, propositional belief. When forming such beliefs, however, we are already disposed in certain directions due to unconscious affective engagement with the environment. Ward concludes that:

Our development as Homo sapiens lay in our ability to generate actualities from virtualities. As a symbolic species we were already committed to virtual realities that were so closely allied to aspirations, ambitions, hopes and dreams. We dwelt within the myths we composed, the utopias we fantasied, the dystopias we feared.¹⁵⁸

¹⁵⁶ Ward, *Unbelievable*, p.49 (emphasis in the original)

¹⁵⁷ Terrence Deacon, *The Symbolic Species: The Co-evolution of Language and the Brain* (London: W. W. Norton and Company, 1997), p.454

¹⁵⁸ Ward, *Unbelievable*, p.224

From the lenses on AEC provided by Ward and others, the question that arises for RN is as follows: if, as Chapter 1 concluded, RN is fundamentally concerned with developing myths (a high tier virtual reality activity) based on mainstream science, *how are the essential ingredients of those myths already affectively charged by low tier processes?* In other words, what affects might concepts (as the essential ingredients) carry prior to being placed in a narrative context or otherwise rhetorically enhanced?

The behaviorists used to distinguish between what they called conditioned stimuli – entities in the environment that had, in Damasio’s terms, been somatically marked – and unconditioned stimuli, which carried innate affective associations. Crude behaviorism is no longer credible, and the unconditioned-conditioned distinction is simplistic now that we understand the complex interplay between genes and environment. Moreover, one cannot easily use cultural universality as a hermeneutic for innateness, because those universals can originate in widely shared experience. The snake, for example, has been offered as an example of a concept carrying innate (negative) affect, but even in nonhuman primates this possibility is complicated by the influence of caregivers whose reactions to snakes may be observed by infants.

This is a difficult question, but fortunately my purposes do not require a specific or detailed answer. It does, however, require me to assess whether certain concepts *tend* to carry certain affective associations, even if I cannot isolate their origin, and recognising that considerable individual differences exist. Hence, I will – as the thesis evolves – evaluate some common concepts used in RN mythmaking according to what I believe to be their commonly held affective associations (at least in contemporary Western cultures), whatever the source of those associations. The example that I will examine most fully is the star. While there is some cultural variation, in the modern West stars generally have a range of positive connotations, from

the wonder of the night sky to the assignation of the label ‘star’ to artistic or cinematic celebrities.

However, the immediate task is to comprehend two other aspects of EC relevant to the latent affectivity of particular ideas. I will begin with the role affect plays in the metaphorical structure of abstract thought, before turning to affect in imagination.

The Second Strand of EC: The Body and its Movements as the Primary Source of Metaphor in Abstract Thought

Engaging with the ACAN fundamentally concerns the affective resonance of different narratives, which themselves constitute particular concepts arranged in particular sequences. Embodiment is central to this enquiry because our anatomy and motility shape the basic concepts through which we understand the world. This claim, however astonishing to traditional philosophy and Cartesian biases, is vindicated by both reason and experiment. The emergence of *Homo sapiens* – as per the evolution of any species in the past, present or future – involves an integrated organism and the interplay between its brain and its other parts. In Damasio’s words:

The mind had to be first about the body, or it could not have been. On the basis of the ground reference that the body continuously provides, the mind can then be about many other things, real and imaginary.¹⁵⁹

He continues:

¹⁵⁹ Damasio, *Descartes’ Error*, p.xxvi

Our very organism rather than some absolute external reality is used as the ground reference for the constructions we make of the world around us and for the construction of the ever-present sense of subjectivity that is part and parcel of our experiences; that our most refined thoughts and best actions, our greatest joys and deepest sorrows, used the body as a yardstick.¹⁶⁰

Ontogenetically, too, an infant's body form is its essential reference for framing higher conceptual and representational entities. As Maxine Sheets-Johnstone investigated in great depth in her book *The Primacy of Movement* (2011), it is not just body plan, but its essential dimensions and the constraints of how that body moves, that shaped conceptual patterning in evolution and continue to do so in each individual life.¹⁶¹

Building on Dewey and Merleau-Ponty, George Lakoff and Mark Johnson constructed the bridge from body form to abstract concepts first in *Metaphors We Live By* (1980) and later in *Philosophy in the Flesh* (1999).¹⁶² They not only observed that many of our abstract concepts are only comprehensible with reference to metaphor, but that these 'base metaphors' originate in the body and its movements. Such facts as the human body's vertical orientation, our possession of a front and a back, and our movement in the direction of the front side, bequeath a psychology with a specific set of fundamental concepts which will, in turn, influence how we comprehend and develop more abstract concepts.¹⁶³ That is, we use a 'source domain' of more concrete experience in order to get a handle on a less grounded, more amorphous, 'target domain.' Time,

¹⁶⁰ Damasio, *Descartes' Error*, p.xxvi

¹⁶¹ Maxine Sheets-Johnstone, *The Primacy of Movement*, 2nd edition (Amsterdam and Philadelphia: John Benjamins, 2011)

¹⁶² George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago and London: University of Chicago Press, 1980)

George Lakoff and Mark Johnson, *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought* (New York: Basic Books, 1999)

¹⁶³ Shapiro, *Embodied Cognition*, p.88

for example, is an abstract concept that is understood by recourse to our concrete experience of space; purposes are understood in terms of destinations; justice in terms of balance; and so on.

Lakoff and Johnson continued to elaborate in great detail how the mapping between metaphorical source and target domains consistently operates, and with substantial cross-cultural patterning.

While one can deploy metaphor consciously and creatively, Lakoff and Johnson focus on the potency of their unconscious influence. This unconscious influence in some cases owes more to cultural embeddedness than fundamental embodiment. The metaphors LABOUR IS A RESOURCE and TIME IS MONEY, for instance, are cultural but now instinctive in capitalist societies. The metaphor ARGUMENT IS WAR might likewise seem natural, but is to a significant degree cultural; it is possible to envision a functioning society operating with ARGUMENT IS DANCE. Finally, there are metaphors that are more intrinsically embodied and without which we could barely function. The mapping of space onto concepts of time, for example, is thoroughly cross-cultural. While Lera Boroditsky observes that time tends to be conceived horizontally in English but vertically in Mandarin, these are both based on our bodily experience of space.¹⁶⁴

How might one resist this basic argument that the nature of the body, its movements and its internal processes heavily influence abstract concepts? At best, one can protest that, even if the original and continuing basis of human thought is as part of an integrated organism, its range and flexibility demonstrate an essential liberation from bodily constraint. But one can do so only in the face of patterns of thought which are not just readily observable but thoroughly

¹⁶⁴ Lera Boroditsky, 'Does Language Shape Thought? English and Mandarin Speakers' Conceptions of Time,' *Cognitive Psychology* 43(1), 2001, pp.1-22

underwritten by the experimental data.¹⁶⁵ At worst, one might fall back on a Cartesian mind-body dualism involving what Dewey called ‘the dogma of immaculate conception of philosophical systems.’¹⁶⁶

The embodiment paradigm also streamlines a famous problem whose solution otherwise demands philosophical contortions. The so-called ‘symbol grounding problem’ refers to the enigma of how, under the computational model of mind, thoughts acquire meaning. Meaningless symbols cannot draw meaning from their associations with other symbols, where those symbols are also meaningless. Symbols must ‘bottom out’ somehow, and embodiment supplies such a foundation. Computational theories generally hold that the information we receive through our senses is transduced into a common mental language, or ‘mentalese,’ and that we then traffic in these ‘amodal’ representations. By contrast, Lawrence Barsalou and others have accumulated evidence to support the more plausible hypothesis that cognition is modal: actual encounters with the entity in the real world are, in a manner and to a degree that we do not yet fully understand, preserved in subsequent recollections.

Barsalou’s theory of ‘perceptual symbols’ begins with the fact that when we perceive objects, we do so through various channels or modes. We may, for example, see a bird but not hear it, or vice-versa. Barsalou suggests that the transition from such modal representations to amodal representations such as a generic concept ‘bird’ – a translation integral to computational theories - is unnecessary. Cognition need not detach modal information from representations; rather, cognition is inherently perceptual because it shares many systems with perception. Hence, later thoughts about birds, or a specific type of bird, will involve representations of the visual

¹⁶⁵ For example, according to Fraser Watts, some kinds of cognition are more embodied than others. Fraser Watts, ‘Embodied Cognition and Religion,’ *Zygon* 48(3), 2013, pp.745-758

¹⁶⁶ John Dewey, ‘Context and Thought,’ *University of California Publications in Philosophy* 12(3) (Berkeley, CA: University of California Press, 1931), p.220

and auditory encodings, whether real, encountered in books or TV, or imagined. Overlapping cognitive processes are involved in perception, memory, and imagination.¹⁶⁷

These processes have important consequences for the manipulation of subsequent concepts. The theory of perceptual symbols helps to explain how so much cognition could be affective: affect might have been involved in some or all of the original perceptions of the object or event. If there is no transduction into mentalese, there is no ‘air gap’ between experience and symbol. And where Damasio’s somatic markers emotionally tag our experiences, these can be transferred into concepts and hence symbols. It seems that the same neural pathways representing a word are fixed with those representing the experience.¹⁶⁸ As we shall see, this is also of supreme importance in understanding the affective power of the imagination, prompted by the reading or hearing the linguistic symbols of which narratives are constituted.

We can be fairly certain that concepts acquire affect in this way, but the more difficult question is whether a concept can acquire affect via a more basic concept that structures it. Recall that, through embodiment, Lakoff and Johnson refuted the idea that metaphors are mere rhetorical fancies by showing how they structure more abstract thought. However, metaphor theorists who consider only the transfer of *attributes* from metaphorical source to referential target may still underplay the importance of metaphor. This is because transfer of attributes risks upholding the old paradigm populated by dry, disembodied symbols. What about the potential transfer of *affects*? If a concept in the source domain – the domain of more concrete experience –

¹⁶⁷ Lawrence W. Barsalou, ‘Perceptual Symbol Systems,’ *Behavioral and Brain Sciences* 22, 1999, pp.577-609; Lawrence W. Barsalou, W. Kyle Simmons, Aron K. Barbey, and Christine D. Wilson, ‘Grounding Conceptual Knowledge in Modality-Specific Systems,’ *Trends in Cognitive Sciences* 7, 2003, pp.84-91. Discussed in Shapiro, *Embodied Cognition*, pp.98-100.

The best known elaboration of this process – the details of which need not concern us here - is the *indexical hypothesis* offered by the psychologist Art Glenberg and his colleagues. See e.g. Arthur Glenberg and Michael Kaschak, ‘Grounding Language in Action,’ *Psychonomic Bulletin and Review* 9, 2002, pp.558-65

¹⁶⁸ Michael Cavanaugh, *Biotheology: A New Synthesis of Science and Religion* (Lanham, MD: University Press of America, 1996), p.88

is used to structure a concept in the more abstract target domain, is the affect associated with the source concept transferred to the target domain too? If so, a metaphorical choice is always an affective choice, whether intentional or not. And this is where the real significance for religion and RN enters. Religious thought involves many abstract, complex concepts, some of which have clear bodily connections (such as the bread and wine of communion) and others which tend to appear in rarefied discourse (such as god as the ‘ground of being’). In whatever case, however, the theory of metaphor within EC implies that we can only really understand theological target domains by considering more concrete source domains. To approach this problem, I must first outline the third strand of EC.

The Third Strand of EC: The Imagination as Embodied Simulation

Marco Caracciolo defines the imagination as ‘the intentional mode through which one directs one’s consciousness toward non-actual objects.’¹⁶⁹ The ambiguity of the term ‘non-actual’ is not helpful though – does it mean ‘not present’ or ‘not existing’? If the former, the definition is vulnerable to the criticism that Wordsworth and Coleridge levied on the Augustans in the Preface to *Lyrical Ballads* (1798). Wordsworth and Coleridge argued that poetry was not mere fantasy – which only recombines that with which we are already familiar – but the product of the imagination, a genuinely creative faculty capable of generating new experiences.¹⁷⁰ Their view is reflected in Michael Cavanaugh’s definition in his book *Biotheology* (1996): ‘Imagination is the ability to form conscious ideas or mental images of things never before perceived by the imaginer.’¹⁷¹ However, note that ‘never before perceived’ could still relate to experiences others have had, rather than truly innovative experiences. I will therefore use the term ‘imagination’ in

¹⁶⁹ Marco Caracciolo, ‘Blind Reading: Toward an Enactivist Theory of the Reader’s Imagination’, in L. Bernaerts *et al.* (eds.), *Stories and Minds: Cognitive Approaches to Literary Narrative* (Lincoln, NE: University of Nebraska Press, 2013), p.90

¹⁷⁰ Discussed in McGilchrist, *The Master and his Emissary*, p.341

¹⁷¹ Cavanaugh, *Biotheology*, p.20

an encompassing way to mean *anything that is not directly experienced at the time*, whether real or invented, and however closely related to personal memory. A common imaginative mode of religious naturalists involves phenomena that are real as far as mainstream science is concerned, even if they are not - and will never be - directly experienced. The potential for constructing innovative affective ‘naturalist imaginaries,’ and their potential for undermining the ACAN, is addressed in the next chapter.

Embodied simulation thus involves the activation of perceptual, motor, and emotional systems to simulate situations that are not currently being directly experienced, or – following Cavanaugh – that have never or could never be experienced.¹⁷² In other words, it involves simulating surroundings, actions, and emotions. The human imagination – and its various possible manifestations in other animals – evolved through a process whereby the sensory, motor, and emotional faculties engaged while interacting with the environment became available ‘offline.’ The survival advantages conveyed by this process of ‘decoupling’ from live experiences are obvious: ‘The key shift was from real-time perceptual behavioral affordances to valence-tagged simulations decoupled from here-and-now demands for the purposes of planning and decision-making.’¹⁷³ It enabled both the reliving of ‘online’ experience and the generation of possible scenarios, whether realistic future possibilities, fictitious, or impossible.

Note the crucial point that the same physiological structures are involved both ‘online’ and ‘offline’: ‘Imagining something, watching someone else do something, and doing it ourselves share important neural foundations.’¹⁷⁴ More precisely, ‘the modality-specific states that represent perception, action, and introspection when one experiences a particular object also serve to

¹⁷² Marco Caracciolo defines *simulation* as ‘enacting a mental state, [and] trying to produce it in the absence of the appropriate stimulus.’ See ‘Blind Reading,’ p.84.

¹⁷³ Asma and Gabriel, *The Emotional Mind*, p.154

¹⁷⁴ McGilchrist, *The Master and his Emissary*, p.250

represent the object later, offline.¹⁷⁵ This underpins the close relationship between memory and imagination. Memories are not infallible deposits of past experiences in the way that recordings or photographs are often perceived to be. They are physical reconstructions, such that the neural processes engaged in the reconstruction are very similar to those involved in imagining.¹⁷⁶ Indeed, an important function of memory is to enable the ability to project forward into the future by recombining past information – potentially including fictions and impossibilities at least influenced by memories - into simulations that can be safely tested offline.¹⁷⁷

In *perceptual simulation*, imagining a visual scene activates brain areas that would be engaged if we actually experienced that scene.¹⁷⁸ The same is the case in *motor simulation*. Motor simulation in particular engages the mirror neuron system (henceforth MNS), whereby the same areas of the brain are activated when watching another perform an action as would be the case if one performed the action oneself. Indeed, the MNS may be the basic mechanism through which we internalise and learn from the thoughts and actions of others.¹⁷⁹ Moreover, one need only *imagine* the action for the MNS to respond.¹⁸⁰ One study even suggests that imagining one's own muscle contractions significantly increases actual muscle strength.¹⁸¹

¹⁷⁵ Paula Niedenthal, Adrienne Wood, and Magdalena Rychlowska, 'Embodied emotion concepts,' in Lawrence Shapiro (ed.), *The Routledge Handbook of Embodied Cognition* (London and New York: Routledge, 2014), p.242

¹⁷⁶ K. Dijkstra and R. A. Zwaan, 'Memory and action.' In Lawrence Shapiro (ed.), *The Routledge Handbook of Embodied Cognition* (London and New York: Routledge, 2014), pp.297-98.

Mary Helen Immordino-Yang, *Emotions, Learning, and the Brain: Exploring the Educational Implications of Affective Neuroscience* (New York: W. W. Norton and Company, 2016), p.88.

Antonio Damasio, *Self Comes to Mind: Constructing the Conscious Brain* (London: Vintage, 2012), p.136.

¹⁷⁷ David Eagleman, *The Brain: The Story of You* (Edinburgh: Canongate, 2015), p.28

¹⁷⁸ Stephen M. Kosslyn, *Image and Brain: The Resolution of the Imagery Debate* (Cambridge, MA: MIT Press, 1994)

¹⁷⁹ Immordino-Yang, *Emotions, Learning and the Brain*, p.156. This may also be relevant to autism – see e.g. Lindsay M. Oberman and Vilayanur S. Ramachandran, 'The simulating social mind: the role of the mirror neuron simulation system and simulation in the social and communicative deficits of autism spectrum disorders,' *Psychological Bulletin* 133(2), 2007, pp.310-27.

¹⁸⁰ Vittorio Gallese, 'Mirror Neurons and Art,' in F. Bacci and D. Melcher (eds.), *Art and the Senses*. New York: Oxford University Press, 2011), pp.441-49.

Imagining certain motor actions activates some of the brain regions involved in performing that action. See e.g. M. Jeannerod, 'The Representing Brain: Neural Correlates of Motor Intention and Imagery,' *Behavioral and Brain Sciences*, 17, 1994, pp.187-245.

¹⁸¹ Wan X Yao *et al.*, 'Kinesthetic imagery training of forceful muscle contractions increases brain signal and muscle strength,' *Frontiers in Human Neuroscience* 7, 2013

The third area of simulation, alongside the perceptual and the motor, is *emotional simulation*. In order to appreciate what precisely is simulated here, I draw upon some of the most commonly cited and sophisticated work on basic human emotional processes. This is the work of Jaak Panksepp conveyed in *Affective Neuroscience: The Foundations of Human and Animal Emotions* (1998) and *The Archaeology of Mind: Neuroevolutionary Origins of Human Emotions* (2012, with Lucy Biven).¹⁸² Donovan Schaefer refers to ‘ancient evolutionary processes operating in deep time,’¹⁸³ and what is perhaps most remarkable about the distinct emotional circuits that underlie our everyday lives is that these circuits have strong similarities across mammalian species. Panksepp’s model comprises Primary-Process Affects, Secondary-Process Emotions, and Tertiary-Process Emotions. Primary-Process Affects are hard-wired, shared with all vertebrates and include homeostatic affects (hunger, thirst, etc.), sensory affects (sweetness, bitterness, disgust, etc.), and emotional affects (emotion-action tendencies). Secondary-Process Emotions are different because, while partly instinctive, they are shaped by learning and conditioning. Here, Panksepp identifies (and capitalises) seven affective ‘systems’ – each with particular neural electrochemical pathways and feeling states - that are shared with all mammals: FEAR, LUST, CARE, PLAY, RAGE, SEEKING, and PANIC/GRIEF. While the Primary- and Secondary-Process layers are largely unconscious, Tertiary-Process Emotions – complex social emotions from envy, guilt, and shame to awe, hope, and humour - are more thoroughly interwoven with conscious, cognitive activity.

¹⁸² Jaak Panksepp, *Affective Neuroscience: The Foundations of Human and Animal Emotions* (New York and Oxford: Oxford University Press, 1998);

Jaak Panksepp and Lucy Biven, *The Archaeology of Mind: Neuroevolutionary Origins of Human Emotions* (New York and London: W. W. Norton and Company, 2012).

Panksepp’s work is generally classed as affective neuroscience rather than EC, but it is legitimate to consider it under a broad EC banner given that the affective colouring of our cognition owes so much to its integration with the embodied processes he has researched in such detail in his animal studies.

¹⁸³ Schaefer, *Religious Affects*, p.58

I will use this basic evolutionary-biological model – which Panksepp and Biven call the ‘archaeological treasure’ of our minds - throughout this thesis for several reasons.¹⁸⁴ First, it is rooted in a huge corpus of experimental research. Second, it is a valuable frame, alongside the aforementioned virtual realities construct, for analysing how our Tertiary-Process encounter with narratives engages affects at lower levels, particularly the Secondary-Process affective systems that we share with other mammals. Third, it rebalances the common academic focus on Tertiary-Process Emotions and conscious cognition, especially in narratology and RN.

It is to some extent possible for us to simulate these emotions. At the primary level, we can ‘imagine’ hunger, thirst, sweetness, bitterness, disgust, and so on - their actual bodily feeling – based on our memory of those states or via their imaginary stimuli. At the secondary level we can conjure in a physically potent way FEAR, LUST, CARE, PLAY, RAGE, SEEKING, and PANIC/GRIEF. And at the tertiary level we can summon envy, shame, humour, and so on. However, ‘to some extent’ entails a substantial debate about how close emotional simulations are to the real thing. For example, however horrifying the depiction of a Viking raid in a television drama, or some genuine footage of an atrocity from a modern civil war, it is unlikely that the viewer will feel the same quality and degree of terror or panic as would a first-hand experiencer.¹⁸⁵ Were this the case, the function of the imagination as something akin to a safe laboratory for simulating scenarios would be gravely undermined.¹⁸⁶ Indeed, it has been argued that literary art and religious rituals function to allow important emotions to arise at the most beneficial aesthetic distance.¹⁸⁷

¹⁸⁴ Panksepp and Biven, *The Archaeology of Mind*, p.x

¹⁸⁵ In my own experience at least, there seems to be a scale of activation from real life through dreams to simulation. Dreaming, because one is totally immersed and regards the events as real at the time, might on occasion offer similar activation. As one who has - two or three times only – had a lucid dream, and thus been able to observe the contents from a detached standpoint, I can testify that the content is rendered in as much detail as in real life. Simulation tends not to be as potent, but the connection between the different phenomenological experiences of real life-dreaming-simulation on the one hand and physical mechanisms on the other is a complex matter.

¹⁸⁶ Keith Oatley, *The Passionate Muse: Exploring Emotion in Stories* (New York: Oxford University Press, 2012), pp.51-52

¹⁸⁷ Thomas J. Scheff, *Catharsis in Healing, Ritual, and Drama* (Berkeley, CA: University of California Press, 1979)

The matter becomes more complicated with experimental evidence indicating that one can recognise an emotion being communicated while feeling a different one. Citing such studies, Philip Johnson-Laird and Keith Oatley write: ‘It is enjoyable to listen to sad music; it is enjoyable to mourn the death of Hamlet.’ They implies that there is a distancing effect in play here, continuing: ‘But it is not enjoyable to mourn the death of a person one loves.’¹⁸⁸ The mechanisms enabling this, or those that allow some people to enjoy horror films, for example, are not well understood. Fortunately, these are not puzzles that I must solve. To be affectively important, emotional simulation need have neither the fidelity of real experience nor be fully conscious. As Gregory Currie writes:

Conscious experience of one’s self as undergoing an emotion is very variably associated with the activation of the mechanisms that underlie that emotion, and may depend on the strength of the activation.¹⁸⁹

Simulation, as with many other physical phenomena, may be causal without reaching consciousness, or may generate faint and thus unnoticed conscious experience.

The distinction between perceptual, motor and emotional simulation is grounded in the physiological structures enabling them, and it is a very useful one for the purposes of analysis. However, a further complication is that these three types should not be regarded as entirely separate. For example, emotions and their simulation are often roused via perceptual or motor

¹⁸⁸ P. N. Johnson-Laird and Keith Oatley, ‘Emotions in Music, Literature, and Film,’ in Lisa Feldman Barrett, Michael Lewis and Jeannette M. Havilland-Jones (eds.), *Handbook of Emotions* (4th ed.). (New York: The Guilford Press, 2016), p.93

¹⁸⁹ Gregory Currie, ‘Empathy for Objects,’ in Amy Coplan and Peter Goldie (eds.), *Empathy: Philosophical and Psychological Perspectives* (New York: Oxford University Press, 2011), pp.91-92

simulation. This is why George Santayana was able to claim that ‘to stimulate the imagination is to produce the deepest, the most pertinacious emotions.’¹⁹⁰

What is more integral to my purposes is to understand how consuming narratives, particularly through reading, engages simulation processes, given that my focus is on RN in its written forms. However, before turning to this subject, I want to do two things. The first is to deal with the extent to which AEC, as described above, relates to experiences that might be deemed religious. The second is to clarify the originality of my approach in the context of the work of others.

AEC and Religious Experience

The ACAN concerns the fear that naturalism cannot be as emotionally potent or satisfying as supernaturalism, and it is experiences deemed religious - or at least conditions of mind deemed religious - which ACAN advocates consider to be at risk. I must therefore clarify the relationship between AEC and kinds of experience or condition that might legitimately be called religious. It is important to note at the outset that I do not – and need not – propose that AEC exhausts the causes (natural or supernatural) behind such experiences and conditions. I make a more modest claim, namely that AEC can overturn the ACAN because it has a significant part in such experiences and moods and is as associable with naturalist ideas and cosmologies as with supernaturalist ones.

William James’s *The Varieties of Religious Experience* is only the most famous of attempts to understand - or indeed catalogue – the types of experience which people wish to describe as

¹⁹⁰ Santayana, *Interpretations of Poetry and Religion* (1957 edition), p.9

religious.¹⁹¹ This is a formidably complex area for several reasons: the inherent subjectivity involved; the biases – intended and unintended – of self-reporting; the profound issues of description and hence comparison, not least for experiences for which ‘ineffable’ might be apt; and the numerous problems in seeking reliable connections between particular experiences and particular neurological or broader physical patterns. Doubtless these complexities were what led James to a position that respects an individual’s subjective experience, before clarifying that this gives them no authority over what others need accept:

- (1) Mystical states, when well developed, usually are, and have the right to be, absolutely authoritative over the individuals to whom they come.
- (2) No authority emanates from them which should make it a duty for those who stand outside of them to accept their revelations uncritically.¹⁹²

If we try to be more specific than James, we immediately run into difficulties. For example, if we say that experiences and conditions deemed religious tend to involve *powerful* emotions we are faced with counter-examples like some interpretations of Buddhist philosophy. Equally problematic is the somewhat absurd level of abstraction represented by ‘positive’ and ‘negative’ affect: one cannot assume that the affects to which people might affix the term religious will be secondary process ‘positive’ affects like joy or even primary process homeostatic affects. Some individuals favour fasting or sexual abstinence, as in the related mystic, Jesuit, and other traditions. There is then the complexity of positive affects that might ‘wrap around’

¹⁹¹ See e.g. Ann Taves, *Religious Experience Reconsidered: A Building-Block Approach to the Study of Religion and Other Special Things* (Princeton and Oxford: Princeton University Press, 2009); and Marghanita Laski, *Everyday Ecstasy* (London: Thames and Hudson, 1980).

A long-established cataloguing project in the UK is that of The Religious Experience Research Centre at the University of Wales Trinity St David, founded by Alister Hardy in 1969.

¹⁹² James, *The Varieties of Religious Experience*, p.422

negative affects, as when anorexics experience serotonin and dopamine increases from withholding food.

These examples cannot be belittled as outliers or aberrations. The explicit wish for unalloyed, interminable positive affect, even where beautifully set as in Brahms's *ewige Freude* (eternal joy) in *Ein Deutsches Requiem*, tends to be rhetorical – a quasi-ideal - insofar that it tends not to be sought in any simple, uninterrupted sense in practice. This is the case in both everyday life and popular narrative. As Alexa Weik von Mossner observes:

Happy people living harmoniously in perfect worlds do not make for a whole lot of conflict, and so one of the intrinsic problems of utopian writing is precisely this: boredom.¹⁹³

The entertainment industry is only one aspect of cultural life that could not function without the conflict inherent in storytelling, and the ways in which that conflict is portrayed are often emotionally disturbing. As I will note below in the context of emotional simulation, people enjoy scaring themselves, at least from a position of personal safety and, in some cases, even at their own considerable peril (I am thinking of warzones or extreme sports).

As I will explore in Chapter 5, one might even consider in this context those existentialist forms of RN that almost pride themselves on their willingness to embrace a conception of a callous universe. These are tempered by a celebration of human-created meaning, but the more nihilistic conclusions of thinkers like John Gray still sell very well, almost as if the complete

¹⁹³ Alexa Weik von Mossner, *Affective Ecologies: Empathy, Emotion, and Environmental Narrative* (Columbus: Ohio State University Press, 2017), pp.177-78

absence of meaning reaches around and catches its own tail.¹⁹⁴ It may be that it is less the absence of meaning itself that many readers enjoy, but the uncompromising purity of the stance and the self-esteem that accompanies the belief that one possesses rare honesty and bravery, a Nietzschean exhilaration in this ‘voluntary living in ice and high mountains.’¹⁹⁵

Others point to mixed emotions as the recipe for the most satisfying whole. Mary Beth Oliver suggests that many seek an experience of ‘tenderness’: people pursue stories that involve mixed emotions, including sadness, where there is human vulnerability and compassion. She relates this to our pursuit of meaningfulness - we enjoy reflecting upon such stories and they can often be more satisfying than comedies.¹⁹⁶ And more than one famous musician has specified an ability to convey joy and sorrow simultaneously as a trait of great composers.¹⁹⁷

Regarding simulation specifically, the interpretation of narratologist Patrick Colm Hogan is, I believe, quite convincing. It unites this question of affective valence, or quality, with the more brute dimension of quantity, while being evolutionarily plausible. Hogan suggests that, for many people, much of the time, simulation is itself pleasurable, even where it involves simulating aversive situations. This makes evolutionary sense given the survival value in imagining the possible painful consequences of our actions.¹⁹⁸ A simple quantitative approach, like a simple qualitative one, soon runs into problems. First, one can of course have too much affect: being permanently inundated by dopamine, oxytocin, and other generally ‘feel good’ neurotransmitters would probably begin to pale. Second, the Western tradition may have tended to associate religious encounters with elevated experience – so ‘more’ affect, whether or not on a single

¹⁹⁴ e.g. John Gray, *Straw Dogs: Thoughts On Humans and Other Animals* (London: Granta, 2002)

¹⁹⁵ Friedrich Nietzsche, *Ecce Homo: How One Becomes What One Is* (London: Penguin Books, 1992), p.4

¹⁹⁶ Mary Beth Oliver, ‘Tender Affective States as Predictors of Entertainment Preference,’ *Journal of Communication* 58(1), 2008, pp.40–61

¹⁹⁷ e.g. the conductor Simon Rattle on BBC Radio 4’s *Desert Island Discs*, 2008

¹⁹⁸ Patrick Colm Hogan, *What Literature Teaches Us about Emotion* (New York: Cambridge University Press, 2011), p.29

occasion - but as already noted, Buddhism and other traditions appear to associate experiences of emptying out with the divine.

My interpretation of this perplexing landscape is that many individuals enjoy emotional experience (including its simulation) *per se*, and these need not always involve unalloyed types of what are usually classed as positive affect. It would be tempting to say that what elevates them to *religious* status is their association with something beyond everyday experience, something which they might consider *transcendent*. However, this is too difficult a position to maintain without a very precise definition of what is meant by that term, because most would hesitate to use the term *religious* for those experiences associated with alleged encounters with ghosts, aliens, and other such beings.

My approach, then, will follow James's allowance for subjectivity and emphasise the emotions that individuals seek, without trying to define strong patterns in what those emotions are. However, regardless of the specific affects, there is a desired quality, or condition, that I suggest is widely shared. In this regard it is useful to characterise a state described by Charles Taylor in *A Secular Age*:

Somewhere, in some activity, or condition, lies a fullness, a richness; that is, in that place (activity or condition), life is fuller, richer, deeper, more worthwhile, more admirable, more what it should be. This is perhaps a place of power: we often experience this as deeply moving, as inspiring. Perhaps this sense of fullness is something we just catch glimpses of from afar off; we have the powerful intuition of what fullness would be, were we to be in that condition, e.g., of peace or wholeness; or able to act on that level of integrity or generosity or abandonment or self-forgetfulness. But sometimes there will be

moments of experienced fullness, of joy and fulfillment, where we feel ourselves there... 'Fullness' has come to be my shorthand term for the condition we aspire to.¹⁹⁹

Taylor is keenly aware of the inadequacy of this word (not least because of the sort of emptiness (*sunyata*) sought by Buddhists and their seemingly paradoxical view that fullness comes only via emptiness) while noting that any language has shortcomings.²⁰⁰ Echoing the ACAN, Taylor suggests that secular lives are 'flattened,' and, invoking Feuerbach, argues that 'we project God because of our early sense of this awesome power which we mistakenly place outside us; we need to re-appropriate it for human beings.' He then proposes that experiential fullness for believers tends to be perceived as coming from without, whereas for modern nonbelievers 'the power to reach fullness is within.'²⁰¹ I suggest that AEC offers a window into how this sense of fullness may arise, while *intentional* AEC suggests how we may appropriate these processes.

Jane Bennett's characterisation of 'enchantment,' which I discussed in the last chapter, involves particular moments rather than a condition. However, it is notable that she also chooses the word 'fullness':

The mood that I call enchantment is provoked by a surprise, by an encounter with something that one did not expect. Surprise itself includes both a pleasant, charming feeling and a slightly off-putting sense of having been disrupted or tripped (up). In enchantment, these two are present in just the right measures so as to combine, fortuitously, in a way that engenders an energizing feeling of fullness or plenitude – a momentary return to childhood joie de vivre.²⁰²

¹⁹⁹ Taylor, *A Secular Age*, pp.5, 780 (note 8)

²⁰⁰ Taylor, *A Secular Age*, p.780 (note 8)

²⁰¹ Taylor, *A Secular Age*, pp.8-9

²⁰² Bennett, *The Enchantment of Modern Life*, p.104

If Taylor and Bennett express the notion of fullness admirably in prose, nobody has done so in poetry better than Ezra Pound:

And the days are not full enough

And the nights are not full enough

And life slips by like a field mouse

Not shaking the grass.

His subject is the absence of fullness, rather than its presence, but the image brilliantly conveys the lack which many people report.²⁰³

I suggest that the condition of fullness or richness – and probably many of the activities to which Taylor and Bennett also refer – tends to correlate both with increased quantities of desired affect (which need not be solely or unmixed ‘positive’ affect) and with increased levels of affective embodied simulation. The extension from directly experienced affect to simulated affect may seem unwarranted, but what these authors and Pound describe as fullness is more consistent with imaginative activity – that is, with more perceptual simulation – than with none. It is more consistent also with (albeit unconscious) resonances of motor simulation than with none. And it is more consistent with varied and heightened emotional activity – albeit simulated – than with none. One might recall also Hogan’s evolutionary argument that simulation itself is enjoyable.²⁰⁴

²⁰³ I do not have empirical evidence for this claim; it is based solely on a lack of satisfaction that many report (whether in the media, in entertainment, in personal communication or elsewhere) for which a lack of emotional ‘fullness’ seems apt.

²⁰⁴ Hogan, *What Literature Teaches Us about Emotion*, p.29

It is worth noting at this point a commonly cited passage of the mythographer Joseph Campbell, who, though he does not use the word fullness, appears to be referring to the same condition as that highlighted later by Taylor:

People say that what we are all seeking is a meaning for life. I don't think that's what we're really seeking. I think that what we are seeking is an experience of being alive, so that our life experiences on the purely physical plane will have resonance with our innermost being and reality; so that we actually feel the rapture of being alive. That's what it's finally all about.²⁰⁵

One could gauge degrees of 'being alive' by various means, but it is likely that among the relevant criteria would be both directly experienced emotions and phenomena such as imagination, motor responsiveness, and vicarious emotion.

In this context, it is interesting that Alexa Weik von Mossner criticises one ecological narrative for lacking 'a single sentence in the story that invites readers to simulate in their minds the characters' actions and emotions or the worlds that they behold'²⁰⁶ – in other words, for being deficient in producing motor, emotional, and perceptual simulation. She suggests that readers are likely to notice when a text fails in simulation terms. Note that, while higher levels of simulation make it more likely that the frequently unconscious elements of motor and emotional simulation will break through into consciousness, it is also not entirely necessary. A condition of fullness may derive in part from unconscious simulation activity, and conversely, a reader could detect a deficient narrative without awareness of the role played by a comparative dearth of simulation.

²⁰⁵ Joseph Campbell, with Bill Moyers, *The Power of Myth*. Ed. Betty Sue Flowers (New York: Doubleday, 1988), p.5

²⁰⁶ Von Mossner, *Affective Ecologies*, p.144

The complexities involved in defining and evaluating ‘religious experience’ and ‘fullness’ mean that I will not attempt to measure, in any quantifiable or objective way, the affectivity of extant and potential versions of RN. Individual histories and preferences, the fact that there are multiple ways to enjoy things, the reality that affect is not a zero sum game of on or off and that there is no simple division between ‘positive’ and ‘negative’ affect - all these and more promise to derail such an effort. One could try to use a proxy: sales figures, for example, might suggest popularity and hence positive experience. I will in the coming chapters deal mainly with texts which have enjoyed relative commercial success while recognising that this is a deeply flawed substitute due to other significant factors in play.

What is more certain is that ‘fullness’ and its constitutive affects, whatever they may be for the individual, may be prompted – at varying levels of intensity - by reading, hearing, or reflecting upon ideas and narratives. Here, the *orchestration* of affects becomes very important. Religious scholars emphasise the role played by religion in ‘procedures for eliciting particular affective reactions in bodies...for pushing around and evoking specific affects,’²⁰⁷ to quote Donovan Schaefer, or in ‘educating the emotions,’²⁰⁸ as Loyal Rue would have it. Religions ‘provide the lexicon, rules, and expression for many different sorts of emotions, including those framed as most positive and most negative, most cherished and most condemned,’ according to Thomas Tweed.²⁰⁹ The remainder of this thesis effectively proposes some procedures by which RN might educate the emotions through intentional AEC.

²⁰⁷ Schaefer, *Religious Affects*, p.33. However, Schaefer does not state that there are specifically religious emotions and is not concerned with authorizing a definition of religion.

²⁰⁸ Rue, *Religion Is Not About God*, pp.78-124. Rue is one of the few religious naturalists who explicitly draws upon research upon emotion and intentionally uses it in his form of RN. Lisa Sideris argues he is not successful, however: ‘Rue struggles to articulate how “social emotions” can be directed toward the Epic, which, he concedes, manifests as an abstract temporal framework and “arrow of time.” Something more, it seems, is needed beyond “the unvarnished truth, goodness, and beauty of the epic evolution” itself.’ Lisa H. Sideris, *Consecrating Science: Wonder, Knowledge, and the Natural World* (Oakland, CA: University of California Press, 2017), p.96

²⁰⁹ Tweed, *Crossing and Dwelling*, p.70

The Uses of EC in Theology, Naturalism, and Narratology

I now want to situate my approach within recent scholarship, beginning with Lawrence Barsalou and colleagues, who have probed the ramifications of EC for theology. They propose that embodied simulation plays central roles in religious visions, beliefs, and rituals, and probably many other religious phenomena. When reading about a deity they suggest that readers might simulate the experience of perceiving it, and when reading about an event might simulate what the experience of that event might be like. They further note the possibility that anthropomorphic conceptions of a deity's characteristics, including their desires, sensory and communicative abilities, and spatial boundaries and movements, originate in the human body.²¹⁰ However, they do not delve into the details of the process, and their interest in beliefs mainly concerns propositional beliefs about the body and the environment. My interest is instead in how EC influences more general cosmological beliefs and their affectivity.

Tobias Tan builds on their work in his doctoral thesis and in a book chapter.²¹¹ His analysis is more detailed, and his conclusions about the influence of EC are similarly bold: 'In summary, the very inventory of the theological concepts which articulate and inform our experiences are grounded in the particular perceptual capacities of our bodies.'²¹² However, while I concentrate on myths and narrative, Tan shines the spotlight elsewhere: he concentrates on ritual practices and symbolism, and specifically the Christian liturgy, invoking 'a well "curated"

²¹⁰ Lawrence W. Barsalou, Aron K. Barbey, W. Kyle Simmons, and Ava Santos, 'Embodiment in Religious Knowledge,' *Journal of Cognition and Culture* 5.1-2, 2005, pp.36, 38-39, 42-43

²¹¹ Tobias Tan, *Corporeal Theology: The Nature of Embodied Understanding in Light of Embodied Cognition* (DPhil thesis, Oxford University, 2017).

Tobias Tan, 'Corporeality in Religious Experience: Embodied Cognition in Religious Practices,' in Thomas Hardtke, Ulrich Schmiedel, and Tobias Tan, *Religious Experience Revisited: Expressing the Inexpressible?* (Leiden: BRILL, 2016), pp.207-226.

See also David Cave and Rebecca Sachs Norris (eds.), *Religion and the Body: Modern Science and the Construction of Religious Meaning* (Leiden: BRILL, 2012).

²¹² Tan, 'Corporeality in Religious Experience,' p.7

worship service' involving 'music, architecture, stain-glass windows, movement, gesture, vestments, posture, poise, incense, art, vessels and other liturgical objects.'²¹³ He is also occupied with traditional theological subjects such as the principle of accommodation and the risks of idolatry that EC might entail. And neither Barsalou nor Tan is primarily concerned, as I am, with *affective* EC.

Well-known affective narratologists such as Patrick Colm Hogan and Keith Oatley do tackle some similar questions to my own, such as the nature of affectivity in the reading process and how different genres or plots focus on particular emotions.²¹⁴ However, the foundation of their analysis is not EC, and their treatment of affect is not grounded in Panksepp's framework of emotional systems to the same extent. One does not get the sense that these authors have investigated the deep significance of EC for their endeavours.

My approach will echo most strongly that of Alexa Weik von Mossner in her book *Affective Ecologies: Empathy, Emotion, and Environmental Narrative* (2017). Her analysis of case studies of environmental narratives, both literary and cinematic, is grounded in EC, and given the subject matter there are clear overlaps with the ecological concerns of many religious naturalists. In particular, she considers some of the challenges faced for human simulation capabilities when attempting empathetic resonance with nonhuman phenomena, a theme to which I will return in the next chapter. My main points of divergence are my focus on RN and my intentional stance.

AEC when Reading

²¹³ Tan, 'Corporeality in Religious Experience,' p.10

²¹⁴ e.g. Patrick Colm Hogan, *Affective Narratology: The Emotional Structure of Stories* (Lincoln: University of Nebraska Press, 2011); Hogan, *What Literature Teaches Us About Emotion*; Oatley, *The Passionate Muse*.

Having contextualised my approach, I can return to the question of AEC in the particular context of reading. I focus on reading partly for reasons of space, but also because while religious naturalists have on occasion recorded talks and devised rituals, books remain a key medium. RN themes arise in films and television programmes but usually these are not explicitly RN or made by those who identify as such. Considering affect during reading prompts the question: how deep is the affective rot for the mind-body dualist? Or, to put it more positively, to what extent must we intermingle our ideas about these historically distinct realms? We can ask this in terms of how far into abstraction affect reaches, or, from the other end, how ancient are the affective structures involved. Beginning with the latter, it might appear from the discussion so far that when it comes to processing language, and particularly abstract concepts, it is really only motor affects involved, or muscle activity such as eye and eyebrow movements and gesture. However, the range and depth of physiological entanglement is much wider.

For example, Naomi Eisenberger and her colleagues have run experiments on feelings of social pain and social warmth. They found that increasing and decreasing social warmth can increase and decrease perceived physical warmth respectively: estimations of room temperature decrease for individuals who relive an experience of social exclusion, while merely reading loving messages from close others can increase reported feelings of warmth.²¹⁵ Note that this suggests the engagement of some of Panksepp's Primary Process affects – in this instance ancient physical pain systems and temperature regulation mechanisms that are apparently co-opted to discourage social separation. The case recalls Damasio's observation that 'nature appears to have built the apparatus of rationality not just on top of the apparatus of biological regulation, but also *from* it and *with* it.'²¹⁶ A similar point is made by Vittorio Gallese and George Lakoff:

²¹⁵ Naomi Eisenberger, 'Social Pain and Social Pleasure: Two Overlooked but Fundamental Mammalian Emotions?' In Lisa Feldman Barrett, Michael Lewis and Jeannette M. Havilland-Jones (eds.), *Handbook of Emotions* (4th edition) (New York: The Guilford Press, 2016), pp.441, 444

²¹⁶ Damasio, *Descartes' Error*, p.128 (emphases in the original)

A key aspect of human cognition is *neural exploitation* - the adaptation of sensory-motor brain mechanisms to serve new roles in reason and language, while retaining their original functions as well.²¹⁷

Evolution builds with what it has, and the great conceptual and linguistic versatility of *Homo sapiens* does not mean that we have severed the bodily connections to create a self-contained Platonic realm.

In some instances, it seems that specific affects are best considered not merely as closely associated with a concept but essential constituents of that concept. Mary Helen Immordino-Yang, a student of Damasio, has produced experimental evidence reliably connecting admiration for others with specific bodily changes. Specifically, such thoughts ‘resulted in subcortical neural activations in brain stem regions responsible for regulation of survival-related mechanisms, including consciousness, cardiac functioning, and respiration.’²¹⁸ Her explanation for these findings all but dissolves the cognition-affect dichotomy:

The emotions that regulate our sociocultural and intellectual lives appear to have co-opted the same neural systems that manage our survival in the basic biological sense. Just as poets and artists have suspected for millennia, we feel social relationships and appreciate intellectual achievements using the same brain systems that sense and regulate our guts and viscera, adjust our blood chemistry and hormones, and conjure our awareness and consciousness. No wonder our creations, reputations, cultural ideals, and

²¹⁷ Vittorio Gallese and George Lakoff, ‘The Brain’s Concepts: The Role of the Sensory-Motor System in Conceptual Knowledge,’ *Cognitive Neuropsychology* 22 (3-4), 2005, p.456

²¹⁸ Immordino-Yang, *Emotions, Learning, and the Brain*, p.165

personal relationships, including those in educational contexts, have such amazing psychological power.²¹⁹

How about the question posed earlier about whether the affect of a source domain is transferred to the target domain? I contend that the theory of embodied metaphor developed by Lakoff and Johnson is actually affective rather than merely cognitive. In other words, there is *affective ton* from source to target. Let us take the example of ARGUMENT is WAR. If one uses war-related words to describe arguments (or any kind of debate) then those physical responses cannot help but be attached to the target concept. And those responses will be different where different language is used in the hypothetical case of ARGUMENT is DANCE. This is clear when one considers the demonstrated affective differences at more modest levels than the contrast between war and dance. For example, eye tracking studies confirm that one simulates motion when reading ‘the highway runs parallel to the river’ but one simulates a spatial configuration for ‘the highway is parallel to the river.’ In other words, we may simulate one thing – movement – in order to understand language about something which is not literally moving.²²⁰

At the level of individual words, simulation means that synonyms may produce different subjective experiences.²²¹ For example, active, interesting verbs achieve their effect in some part because of their associated motor responses. The very definition of synonym may therefore be problematic, depending upon whether our definition of *meaning*, in turn, encompasses the full body response. And here we encounter an under-appreciated reason why ‘freshness’ of language is praised: original ideas and images are likely to require more simulation to process and

²¹⁹ Immordino-Yang, *Emotions, Learning, and the Brain*, p.19

²²⁰ Benjamin K. Bergen, *Louder Than Words: The New Science of How the Mind Makes Meaning* (New York: Basic Books, 2012), p.221

²²¹ Bergen, *Louder Than Words*, pp.149-50

comprehend them. Experiments confirm that more familiar expressions activate motor systems less than new ones.²²²

How about less obvious affective source domains, such as foundational bodily and kinetic characteristics that serve as root metaphors? It is not at all clear that our notions of time are affectively, rather than merely structurally, influenced by their origins in our understanding of space, until one considers particular uses and extensions of the metaphor. Once we read or hear ‘the time raced away’ or ‘time drifted,’ motor and perhaps other affects are triggered. Or consider one of the most important base metaphors based on the body: the so-called container schema. From infancy – indeed, one could say from our very emergence from the uterus – our encounter with the world involves experiences of being physically inside or outside, of other objects being contained within other objects or spaces, and of boundaries more generally. Our phenomenological experience of these boundaries serves as a key organising principle in conceptual development (even if we know from the science of the very small that there is a much more complex reality). While the container metaphor itself may not carry affect, our affective experiences involving boundaries, and the fact that our emergent conceptual development creates in-out categories with affective associations, is clearly a root for affective distinctions in explicit narratives. In other words, the container metaphor plays an influential role in underwriting an instinctive human dualism and tendency towards separation. However crucial those instincts are to a number of beneficial mental processes, they may reinforce some philosophies that are both scientifically and ethically flawed. I will show in the next chapter how the disruption of the container metaphor has been important in RN and could be further utilised intentionally to overturn the ACAN.

²²² Bergen, *Louder Than Words*, p.206

The question about how far into abstraction affect reaches can be traced back at least to William James. Long before the analysis of Lakoff and Johnson, the often prescient James had noticed that:

There is not a conjunction or a preposition, and hardly an adverbial phrase, syntactic form, or inflection of voice, in human speech, that does not express some shading or other of relation which we at some moment actually feel to exist between the larger objects of our thought...

We ought to say a feeling of *and*, a feeling of *if*, a feeling of *but*, and a feeling of *by*, quite as readily as we say a feeling of *blue* or a feeling of *cold*.²²³

He observed how even apparently reasonable, logical and metaphor-light discourses are tinged with affect. A preposition like 'but' can instil a sense of imbalance and a desire for cognitive ease that comes with logical resolution. More than a century later, Mark Johnson developed these insights in *The Meaning of the Body* (2007). While James could only glimpse what might be going on, we now have much more evidence to suggest that it is via differences in simulation that grammatical constructions might be meaningful in this way, a position now known as the *principle of no synonymy*, or the *principle of non-equivalence of grammatical forms*.²²⁴

Numerous experiments are exposing the details of how simulation when reading operates. A remarkable conclusion of scientific studies is that when we read or hear language, comprehending visual words involves the visual system, understanding action verbs entails use of the motor system to simulate the relevant actions, and understanding emotion language

²²³ William James, *The Principles of Psychology* (New York: Henry Holt and Co., 1890), pp.245-46 (emphases in the original). If true, this raises some intriguing questions: How universal are the relations between particular biological patterns and prepositions? How did these associations emerge in evolution, and how do they arise in each individual life? To what extent do the biological constraints impose conceptual constraints?

²²⁴ Bergen, *Louder Than Words*, pp.104, 108

requires the internal simulation of the equivalent emotional states.²²⁵ Indeed, specific language is not always necessary. For example, fMRI and behavioural studies combine to demonstrate that when a protagonist lays down an object, the area of the reader's brain associated with grasping and releasing is active, and that when a location changes, the part concerned with visual perception of a scene is active.²²⁶ This represents further evidence to support Damasio's claim that bodily processes and affects are to some extent constitutive of conceptual operations and understanding, and the bridge is thereby strengthened between the once-alleged gulf between body and ideas and hence between bodies and the great mythic narratives through which individuals and civilisations orient themselves.

The strength of simulation will vary according to a number of factors. There are differences between individuals and perhaps some gender-related patterns.²²⁷ Some may have a greater ability to produce detailed mental imagery (perceptual simulation). In my own case, intense musical training throughout my second decade has left me with relatively rich auditory compared to perceptual simulation, suggesting that simulation may be trained to some extent. Others may experience stronger than average motor resonance: it is not unknown for someone to have the experience of being touched when they see another person being touched.²²⁸ Still others simulate emotionally more or less than others, and not only in conditions such as hyperempathy or autism. There is then the dynamic factor of attention: if one is not fully

²²⁵ Michael P. Kaschak, John L. Jones, Julie Carranza, and Melissa R. Fox, 'Embodiment and language comprehension,' in Lawrence Shapiro (ed.), *The Routledge Handbook of Embodied Cognition* (London and New York: Routledge, 2014), p.118.

Mark Johnson puts this more directly, arguing that understanding is a form of simulation: Johnson, *The Meaning of the Body*, p.161.

²²⁶ N. K. Speer, J. R. Reynolds, K. M. Swallow, and J. M. Zacks, 'Reading stories activates neural representations of visual and motor experiences,' *Psychological Science* 20, 2009, pp.989-999.

²²⁷ Keith Oatley cites studies where male readers experienced more emotions and memories with male protagonists than with female protagonists, but female readers experience emotions and memories to the same extent in each case: Oatley, *The Passionate Muse*, p.32

²²⁸ Currie, 'Empathy for Objects,' p.92

engaged in a simulation-rich activity like reading or listening then one is unlikely to simulate to the same degree.

But what is the contribution of the text itself – including those narratives created by religious naturalists - to the strength of simulation, beyond its capacity to dominate our attention? A key determinant is the kind of language used. Elaine Scarry's investigations of the literary imagination suggest that simulation will become stronger as it approximates actual experience. Vividness and detail are therefore important.²²⁹ Paula Niedenthal and colleagues later argued that greater simulation will grant:

access to more and deeper perceptual features of a concept. Tasks that require extensive simulation of emotion concepts, due to protracted exposure, heightened motivation to imagine the concept, or the complexity of conceptual processing necessary for their performance may even result in the reexperience of an emotional state. More superficial treatment may not.²³⁰

This lies behind the distinction that is sometimes made between sympathy – where one merely understands the emotion a character is experiencing – and empathy, an ancient autonomic response where the reader experiences the emotion vicariously.²³¹

The extent to which our emotional simulation takes the form of empathy rather than merely sympathy also owes much to how a text orientates the reader. In his book *Entranced by*

²²⁹ Elaine Scarry, *Dreaming by the Book* (New York: Farrar, Straus, Giroux, 1999)

²³⁰ Paula M. Niedenthal, Anette Rohmann, and Nathalie Dalle, 'What is Primed by Emotion Concepts and Emotion Words?' in Jochen Musch and Karl C. Klauer (eds.), *The Psychology of Evaluation* (Mahwah, NJ: Lawrence Erlbaum Associates, 2003), p.328

²³¹ Oatley, *The Passionate Muse*, p.31. Graham Ward highlights the autonomic nature of empathy in 'Reading to Live: Miracle and Language,' *Religion and Literature* 44(1), 2012, p.7

Story (2014), Hugh Crago argues that not only is the existence of a protagonist crucial, but this needs to be a character with whom the reader *can* merge and with whom they *want* to merge. That wanting in turn requires us to be ‘going somewhere,’ by prompting the sensations of ‘seeking’ which – though Crago does not make the connection – we might associate with the dopaminergic SEEKING system described by Jaak Panksepp.²³² Research suggests that it is only when we come to know a character quite well – that is, not at the opening of a story – that we can sympathise with their successes rather than only their difficulties.²³³ I will expand upon this theme in Chapter 5 because the availability and nature of protagonists is an important issue in the affectivity of RN.

In sum, the embodied approach to conceptual origins and constraints is persuasive due to its rational and empirical weight as well as its solution to the symbol-grounding problem. William James claimed that ‘we *comprehend* a thing when we synthesize it by identity with another thing,’²³⁴ and that process bottoms out with the body. Humans understand abstract concepts – and perhaps, as James explored, their proximate sentential connections – with recourse to the body and its movements. In the words of a recent commentator:

We take what we know about how to perceive concrete things and to perform actions, and we use that knowledge to both describe and also think about abstract concepts. In this way, we bootstrap harder things to think and talk about – abstract concepts – off of easier things to think and talk about – concrete concepts.²³⁵

²³² Hugh Crago, *Entranced by Story: Brain, Tale and Teller, from Infancy to Old Age* (New York and London: Routledge, 2014), p.221

²³³ Edward B. Royzman and Paul Rozin, ‘Limits of symhedonia: The differential role of prior emotional attachment in sympathy and sympathetic joy,’ *Emotion* 6(1), 2006, pp.82-93

²³⁴ James, *The Will to Believe*, p.85 (emphasis in the original)

²³⁵ Bergen, *Louder Than Words*, p.209

Critically for our purposes, *affects* that pertain to those physical foundations or to the way that base metaphors are communicated, elaborated, and extended may simultaneously be transferred onto more abstract concepts downstream.

It is not simply that the body and its movements shape more abstract concepts, but that real-time processing of at least some concepts engages bodily systems in patterned ways. In other words, an individual body, having shaped abstract concepts in infancy, continues to be engaged in comprehension and does so through embodied simulation.

Using AEC to analyse RN

I suggest the following logical chain between the conclusions of Chapter 1 concerning RN and those above on AEC. Chapter 1 proposed that RN is concerned with developing meaningful myths, based on the discoveries of mainstream science, that allow us not just to describe the world but to navigate it. Its foundational philosophers variously sought to unify scientific convictions not only with the possibilities of myth, but with those of idealism and of those experiences justifiably termed religious. The creation of myths and ideals involves raw materials – or concepts – whether characters, situations, objects, or other entities. The availability of those raw materials relies on processes of *attention* and *imagination*. Moreover, *raw* is an imperfect term, in that these are not the arid, disembodied concepts of analytic philosophy or of the *mentalese* of the computational model. EC shows that even before their use in a particular myth they will be affectively charged due to individual histories but also, perhaps, to widely shared biological factors. The three particular aspects of EC relevant to affect that I have defined – 4EA cognition, the metaphorical basis of abstract thought, and imagination as embodied simulation, which together form what I have called AEC – are means by which we can peer ‘under the bonnet’ of the overt constituents of myth. Only in so doing can we engage Dewey’s

distinction at its base, namely, whether any propositional belief - in our context, RN and its orienting myths founded on mainstream science – is potentially associable with any set of affects, such that the ACAN is theoretically untenable.

There are two technical questions around my approach to applying AEC to RN that I should like to clarify before concluding. I have focused in this chapter on the affectivity of concepts that arises from embodied metaphors and from differences in simulation, but acknowledge that this does not exhaust the sources and types of concept affectivity. These also include:

- Personal history with that to which the concept refers, such as where these have been affectively tagged with somatic markers as per Damasio's theory
- Particular cultural associations of that to which the concept refers
- Any affect that may be inherent, in some deep sense, in that to which the concept refers; I note again, however, debates around even commonly cited examples such as snakes
- The appearance and vocal mechanics of the word itself; that is, its physical shape on the page and the oral movements necessary to pronounce it. As poets have always intuited, symbols do not reside in some disembodied realm and they are often not arbitrary. This is not surprising when one considers the deep history of writing and its origin in pictographs. A classic experiment remains instructive: when participants are given the possible labels 'bouba' and 'kiki' ('baluba' and 'takete' in the original 1929 study) they routinely assign the former to a cloud-like shape and the latter to a jagged shape.²³⁶
- The specific form the concept takes, such as the different motor simulation that may result from the use of different synonyms or indeed between different grammatical cases

²³⁶ Wolfgang Köhler, *Gestalt Psychology* (New York: Liveright, 1929)

- The influence of the surrounding text, including rhetorical devices

Evaluating these several variables in case study texts is extremely difficult. However, some albeit simplified version is necessary in order to understand the extent to which the ACAN is a significant obstacle for naturalism. This is because, as argued in the previous chapter, Dewey's alleged gap between a set of ideas on the one hand and experience deemed religious on the other depends on whether the concepts have any intrinsic or unmalleable affect in either case. Specifically, for this project, it depends on whether the differences between the concepts available to supernatural and natural accounts of the world constrain their affective potential. The first two sources of concept affectivity above are particularly challenging because they refer to individual or cultural differences, while the third is heavily contested. I shall therefore focus on simulation, affective transfer from base metaphors and the engagement of Pankseppian affective systems, and occasionally on the more poetical and rhetorical sources in the final three bullets above.

The analysis in this chapter has shown that there is a complex patterning between concepts and affects and, indeed, that affects may be to some extent constitutive of concepts. It is no longer credible to consider language on a page, or in the ear, as a matter of dry disembodied symbols. Even concepts and words formerly thought of as particularly neutral (like prepositions) may carry affects before they are afforded narrative context or rhetorical attention. We should therefore approach the concepts used by religious naturalists or anyone else with the awareness that they are likely to carry affect before they are placed in a broader philosophical and narrative context.

The second technical issue involves the reading process itself. With reading or listening, we are dealing with extended collections of concepts that influence one another. Allusion and

memory can relate to individual concepts, but the consequences of their combinations may be yet more intricate and unpredictable. In his book *Literary Reading, Cognition and Emotion: An Exploration of the Oceanic Mind* (2011), Michael Burke proposes a model for cognitive inputs while reading which, while necessarily simplified, is broadly consistent with the empirical research and serves as a skeleton upon which to hang my analysis of concept affectivity.²³⁷ The model neatly conveys that the affective responses of readers are not confined to the immediate text being read. They may linger from earlier sections of text or follow from expectations of what will happen next. Alternatively, they may relate to a previous experience that the text has somehow triggered in memory, or to previous experiences that are recalled for reasons unconnected to the text.²³⁸ In summary:

<i>Bottom-up / 'Sign-fed'</i>	<i>Top-down / 'Mind-fed'</i>
The exact text being read	The reader's knowledge of how similar texts tend to unfold (e.g. 'scripts' or 'intertextuality')
Sections of previous text, whether the previous sentence or significant earlier fragments	Subconscious information about earlier experiences (whether or not related to reading)

The bottom boxes – the influences of sections of previous text and the reader's earlier experiences – are essentially inaccessible to analysis. When examining RN texts I will therefore concentrate on the exact text being read, but also to *intertextuality*: the likely reader's knowledge

²³⁷ Based on Michael Burke, *Literary Reading, Cognition and Emotion: An Exploration of the Oceanic Mind* (New York and London: Routledge, 2011)

²³⁸ This raises various questions that we do not have space to explore, such as the differences in the quality of the affects, or simulated affects, in each case. It is also of interest to note that readers apparently start to simulate early in a sentence and then adapt where necessary, rather than awaiting the full meaning before beginning (Bergen, *Louder Than Words*, p.248).

of how similar texts unfold, including unconscious knowledge, due to the prevalence of certain plot forms, ‘scripts,’ or tropes common in Western culture. It may also be possible, on occasion, to identify common associations or allusions of particular ideas contained in the text. While in all cases there is much subjectivity, my contention is that there are demographically significant patterns.

Conclusion

I acknowledge that I have devoted this chapter to developing a model of AEC rather than allocating space to review debates between supporters and detractors of EC.²³⁹ However, I will proceed on the basis that the broad account in recent EC literature is essentially correct. This is a fairly safe assumption. Just taking embodied simulation as an example, the evolutionary account of the decoupling of online and offline perception would be credible based solely on how evolution tends to build upon pre-existing structures, but it is abundantly supported by a large corpus of compelling empirical evidence from both behavioural studies and neuroimaging demonstrating that when we imagine, we engage the same cortical structures – for perception, action, and emotion - as we would during direct experience.²⁴⁰

Given the evidence in its favour, this understanding of the nature and implications of EC – and of imagination in particular - deserves to be much better known. Its import is why I

²³⁹ See e.g. Peter Carruthers, ‘*Simulation and self-knowledge: A defense of theory-theory*,’ in Peter Carruthers and Peter K. Smith (eds.), *Theories of Theories of Mind* (Cambridge: Cambridge University Press, 1996), pp.22-68. Given the strength of the empirical evidence, the more sensible critiques do not deny simulation entirely but posit an additional ‘abstract’ or ‘symbolic’ layer. See Kaschak *et al.*, ‘Embodiment and language comprehension,’ pp.122-23.

²⁴⁰ Reviewed by e.g. Kaschak *et al.*, ‘Embodiment and language comprehension,’ pp.118-22; Claudia Scorolli, ‘Embodiment and Language,’ in Lawrence Shapiro (ed.), *The Routledge Handbook of Embodied Cognition* (London and New York: Routledge, 2014), p.127; Suzanne Oosterwijk and Lisa Feldman Barrett, ‘Embodiment in the construction of emotion experience and emotion understanding,’ in Lawrence Shapiro, (ed.), *The Routledge Handbook of Embodied Cognition* (London and New York: Routledge, 2014), pp.254-57

concur with the sentiment of Mark Johnson with which this chapter began: *Coming to grips with your embodiment is one of the most profound philosophical tasks you will ever face*. Most glaring, this understanding suggests that many linguists, psychologists, and computer scientists have been labouring under a false paradigm; it reforms the foundations of literary aesthetics; and its ramifications spin off in various directions. Consider, as just one such example, the fact-fiction boundary: according to narratologists such as Patrick Colm Hogan and Richard Gerrig, it does not matter to the processes of readers' affective engagement whether the text in question is classed as non-fiction rather than fiction.²⁴¹ This may be because there is little difference in terms of the processes of simulation involved, especially when one recalls the connections with memory. Graham Ward notes in his book *Unbelievable*:

There appears to be no difference – at the level of the operations of imagination, believing, desire and the expectant emotion of hope – between ‘visiting’ places that are totally fictional (as in *Lord of the Rings*), quasi-fictional (as in *À la recherche du temps perdu*) or non-fictional (as in *Dubliners*). Style creates verisimilitude and so invents characters and places that are believable.²⁴²

He develops the point in *Unimaginable*:

We can make a distinction between the imagined worlds of literature, poetry and film, and the world reimagined theologically...Nevertheless, though the distinction is one available to rational analysis, it is a distinction that is not lived as such. The imagination

²⁴¹ Richard J. Gerrig, *Experiencing Narrative Worlds: On the Psychological Activities of Reading* (Boulder, CO: Westview, 1998), p.7; Hogan, *Affective Narratology*.

²⁴² Ward, *Unbelievable*, p.155

cannot make such a distinction; the imagination cares nothing for legitimating truth claims.²⁴³

Perhaps the most important implication is that the imagination does not reside in some separate disembodied realm, and nor is it confined to the cranium. Rather, *imagination is a full body process*. This full body aspect underlies comments such as: ‘It’s a book that you don’t just read, you live.’²⁴⁴ All books – all narratives – are lived in the sense that the imagination is fully embodied, and, as we have seen, fiction and non-fiction involve similar processes.

I have begun to show why my formulation of AEC, and its role in the reading process, are crucial for understanding how RN might push back against the ACAN. The kind of religious experience (as an enduring condition of mind rather than a special occasion) that ACAN advocates claim to be incompatible with naturalism entails the orchestration of affects, both direct and simulated. But it also requires a perceived association with something transcendent. The mythic narratives of RN have their own flavours of transcendence that help their readers to orientate themselves and to navigate their lives. That affective orientation must be towards an individual’s immediate spatial environment and in relation to their position and role in time. The part – and potential part - played by AEC in these orientations, and the ways in which this overturns the ACAN, are the subject of the remaining chapters.

²⁴³ Ward, *Unimaginable*, p.82. To say that the same physical structures are used when reading fact and fiction does not mean that imagination is identical to perception. As Thomas Nagel says about the work of Brian O’Shaughnessy: ‘He holds that imagination is very different from perception, in that it does not contain any “unnoticed but noticeable” parts. (This was also observed by Sartre.) If I imagine a bed of daffodils, there need be no specific number of daffodils that I imagine; but when I actually see a bed of daffodils, there is a specific number of daffodils that I see and a specific number of daffodil images in my visual field. This difference reflects the absence from the imagination of the direct causal control of my senses by the external world that occurs in perception. The content of imagination, O’Shaughnessy argues, is fully determined by what is imagined – here, for example, a bed of daffodils, with no number specified. It is not merely a pale form of perceptual image.’ (Nagel, *Secular Philosophy and the Religious Temperament*, p.159)

²⁴⁴ Simon Schama, front cover comment on *War and Peace* (Leo Tolstoy, *War and Peace*, tr. Anthony Briggs (London: Penguin, 2006))

PART II: APPLICATION

CHAPTER 3

Countering Alienation (I): Elevating the Material through Embodied Naturalist Imaginaries

Were one asked to characterize the life of religion in the broadest and most general terms possible, one might say that it consists of the belief that there is an unseen order, and that our supreme good lies in harmoniously adjusting ourselves thereto. This belief and this adjustment are the religious attitude in the soul...

What keeps religion going is something else than abstract definitions and systems of concatenated adjectives, and something different from faculties of theology and their professors. All these things are after-effects, secondary accretions upon those phenomena of vital conversation with the unseen divine.

– William James²⁴⁵

I began this thesis with an account of the ACAN, and proposed that it can be broken down into the Problems of Alienation, Demotivation, and Oblivion. The remaining chapters will deal with each of these problems in turn, demonstrating how they can be avoided to a significant extent by drawing upon AEC.

In the present chapter, I will expose that the Problem of Alienation is fundamentally about how we understand and orient ourselves towards our surroundings. It is essentially, then, an issue of space, whereas the Problem of Demotivation - as a matter of narrative - pertains to our relationship with time.²⁴⁶ The spatial problem is eased, I will argue, through aspects of AEC relating to imagination and attention. Drawing upon the work of ecologist and philosopher David Abram, I will articulate how his use of areas of AEC on which I focused in the previous

²⁴⁵ James, *The Varieties of Religious Experience*, pp.53, 447

²⁴⁶ It does not matter that, scientifically speaking, space and time are intimately connected. Phenomenologically we perceive them as quite distinct dimensions, so they remain a useful way to organise these chapters.

chapter – his incitement of embodied simulation, his disruption of common base metaphors, and his recruitment of mammalian emotional systems - counteracts the Problem of Alienation. I thereby create an AEC theory of literary aesthetics and apply it to these texts. In the course of doing so, I will investigate some of the challenges that human beings may have in affectively resonating with nonhuman beings, given that our affective systems have evolved in no small part for social interactions with other humans. In the latter part of the chapter, I contextualise Abram as an example of a *naturalist imaginary*. I develop this notion as a constructive frame within which some other religious naturalists operate, but which has further potential for harnessing AEC in order to enhance engagement with the nonhuman world.

According to the ACAN, naturalism is incompatible with emotions deemed ‘religious.’ Let us remind ourselves of the specific Problem of Alienation: at its core, it suggests that the very fact of scientific explanation counters desirable affect, particularly wonder, and that the nature of the explanations proposed by scientists and social scientists similarly fail to generate such affect. This view was espoused by William James in his critique of naturalism – ‘we have seen how the lustre and enchantment may be rubbed off from the goods of nature’²⁴⁷ – and later described (but then challenged) by Max Weber:

Today youth in particular feels rather the reverse – that the thought processes of science constitute an unreal world of artificial abstractions, which with their lean hands seek to capture the blood and sap of real life without ever being able to grasp it. Here in life, which for Plato was the play of shadows on the walls of the cave, genuine reality pulsates; the other things are lifeless ghosts, derived from life, and nothing else.²⁴⁸

²⁴⁷ James, *The Varieties of Religious Experience*, p.144

²⁴⁸ Weber, ‘Science as a Vocation,’ p.15

According to the Problem of Alienation, a universe without supernatural or other entities beyond matter and energy is irretrievably cold and colourless, detached and unresponsive, and the scientific explanations upon which it is based difficult to understand, counter-intuitive, or simply uninteresting. Many people who consider the scientific approach to be epistemically pre-eminent buy into this narrative. They can feel estranged from the universe and, to paraphrase William James, no longer at home in it.²⁴⁹

Confronting the Problem of Alienation involves countering the remote and the abstract, qualities which need not necessarily characterise scientific commitments. Defeating the former – the perceived remoteness of the world - requires connection and its associated affects. Defeating the latter – abstraction – must invite the concrete, the particular and their accompanying affects, so is very much about experiential fullness as described in the last chapter. The task for religious naturalist authors is to express, or re-imagine more fundamentally, naturalist cosmologies – to forge naturalist imaginaries - in ways that defy the assumptions of remoteness and abstraction. This chapter will illustrate how AEC contributes to current and potential attempts to do so.

The stakes are high. Countering remoteness and abstraction in our engagement with the natural world might, for example, be a significant part of countering ecological devastation. *The Dasgupta Review on the Economics of Biodiversity*, led by ecological economist Partha Dasgupta and published by the UK Government in 2021, outlined the challenge posed to traditional economics by assets that are silent, invisible, and/or mobile.²⁵⁰ Naturalist imaginaries can play an important role in supercharging different kinds of awareness. Those kinds of awareness may be required to

²⁴⁹ William James wrote: ‘We are, ourselves, parts of the universe and share the same one deep concern in its destinies. We crave alike to feel more truly at home with it.’ William James, *A Pluralistic Universe: Hibbert Lectures at Manchester College on the Present Situation in Philosophy* (Auckland: The Floating Press, 2012), p.9

²⁵⁰ *Final Report - The Economics of Biodiversity: The Dasgupta Review* (available at www.gov.uk; retrieved 12 May 2021)

reform the economic, educational, and other institutions that continue to reinforce the idea that humans are in some way set apart from the rest of nature.

The Language Project of David Abram

I will analyse these themes with reference to David Abram's two books: *The Spell of the Sensuous: Perception and Language in a More-Than-Human World* (1996) and *Becoming Animal: An Earthly Cosmology* (2010).²⁵¹ Reviewing the latter title, the magazine *Shambhala Sun* declared that Abram had 'crafted the rarest of literary gems.'²⁵² My own experience is that both works have a radiant, stunning quality, and I use the word 'experience' deliberately because there is something about the encounter with them that transcends a typical reading event. This is entirely Abram's intention, for he is explicitly seeking to reduce the representative function of language in order to enhance its more direct experiential power.

Abram does not refer directly to EC in either book, but it suffuses his work in a number of ways. First, there is the language itself: it is clear that the impact he seeks – and in my view, achieves – relies fundamentally on EC, given what we know from empirical research into physical responses while reading. Second, Abram has an academic background in perception and this is a central theme: his detailed elaboration of human-nonhuman dynamics reflects the enactive school of EC. Third, he bases his approach in phenomenology, as do many modern EC theorists. He therefore presents an original opportunity to investigate how the kinds of EC I have elaborated function in these important works of RN.

²⁵¹ David Abram, *The Spell of the Sensuous: Perception and Language in a More-than-Human World*. 2nd edition (New York: Vintage, 2017).

David Abram, *Becoming Animal: An Earthly Cosmology* (New York: Vintage, 2010).

²⁵² Abram, *Becoming Animal*. *Shambhala Sun* quoted in introductory pages.

Abram punctuates *The Spell of the Sensuous* with anecdotes from his time living among traditional oral cultures in Indonesia and Nepal, including his encounters with shamanic personalities. His interactions were energised by his role as a sleight of hand magician, and it was this fascination with magic – and the role of perception in it – that led him to study the phenomenological philosophies of Edmund Husserl and Maurice Merleau-Ponty. Abram focuses on Husserl’s notion of the ‘life-world’ (*Lebenswelt*), the world of our immediate experience prior to our thoughts and theories. The life-worlds of different species, and indeed different cultures and individuals, are hugely diverse, but the Earth is the encompassing ‘ark of the world,’ the ‘root basis’ of all life-worlds.²⁵³ While Husserl clung to the notion of the self (the subject of experience) as a disembodied, transcendental ego, Merleau-Ponty favoured the bodily organism as the foundation of the self.²⁵⁴ In order to evade the interposition of our cogitations upon direct experience, Merleau-Ponty offered, in Abram’s words:

a style of language which, by virtue of its fluidity, its carnal resonance, and its careful avoidance of abstract terms, might itself draw us into the sensuous depths of the life-world.²⁵⁵

Abram’s own language project takes forward what Merleau-Ponty began, but seeks to integrate phenomenology with ecology. Abram claims that:

to describe the animate life of particular things is simply the most precise and parsimonious way to articulate the things *as we spontaneously experience them*, prior to all our conceptualizations and definitions.²⁵⁶

²⁵³ Discussed in Abram, *The Spell of the Sensuous*, pp.40, 43

²⁵⁴ Discussed in Abram, *The Spell of the Sensuous*, pp.45

²⁵⁵ Abram, *The Spell of the Sensuous*, p.44

²⁵⁶ Abram, *The Spell of the Sensuous*, p.56 (emphasis in the original)

This clearly resonates with William James's reflection at the top of this chapter: 'What keeps religion going is something else than abstract definitions... These things are after-effects, secondary accretions upon those phenomena of vital conversation with the unseen divine.'²⁵⁷ While Abram does not speak of the 'divine,' he is plainly seized by an attitude that might be called 'religious' in Dewey's terms, and thereby qualifies as a religious naturalist. As I shall explore in the next chapter, Abram's project also chimes with Ian McGilchrist's theory about two distinct forms of attention and their respective associations with phenomenology and detached, rational analysis.

Abram's approach to language is anchored in historical and ontogenetic depth. The theory he presents in *The Spell of the Sensuous* traces the development of written language from art and pictographs through increasingly stylised and abstracted symbols. This process involved a transfer of human animistic faculties from the dynamic world to the flat page, and he attributes to these ancient origins the richness of our experience when reading mere signs.²⁵⁸ But there is also a transition in each individual life: we enter into language not by conscious study but:

by actively making sounds... *We thus learn our native language not mentally but bodily.* We appropriate new words and phrases first through their expressive tonality and texture, through the way they feel in the mouth or roll off the tongue, and it is this direct, felt significance – the *taste* of a word or phrase, the way it influences or modulates the body –

²⁵⁷ James, *The Varieties of Religious Experience*, p.447

²⁵⁸ Abram also argues that animistic capacities were reoriented towards God with the rise of monotheism: 'The primordial impulse to animate and participate with our terrestrial surroundings has long been channeled by sedentary civilization into a more focused participation with a Source presumed to dwell beyond the perceivable cosmos. We have already seen how formal religion, by concentrating our age-old animist proclivities upon a single, omnipotent agency located *outside* the apparent world, loosened our respectful relation to the sensuous surroundings.' (*Becoming Animal*, pp.276-77, emphasis in the original).

that provides the fertile, polyvalent source for all the more refined and rarefied meanings which that term may come to have for us.²⁵⁹

Both the historical development of alphabetic language, and our individual learning of it, erect ‘an impenetrable barrier, a hall of mirrors...’The ‘I,’ the speaking self, was hermetically sealed within this new interior.²⁶⁰ It is in this way that we become estranged from the animate world around us.

Having explained the origin of this alienation, Abram suggests a means to end it. This – his central task - is ‘*taking up*’ the written word, with all of its potency, and patiently, carefully, writing language back into the land.²⁶¹ He proposes:

translation back from the pose of a pure, bodily rationality to a language appropriate to our lived engagement and rapport with the life around us.

Any such translation would need to render those insights in a manner accessible to felt, bodily experience.²⁶²

He is thus interested in what Gilles Deleuze and Félix Guattari refer to as the ‘sonority’ of language,²⁶³ offering both an archaeology of sonority and a means for its resurrection. This is re-enchantment in a quite literal sense: the word *enchant* is connected with the French verb ‘to sing’ – *chanter* - so that, as Jane Bennett says, to ‘en-chant’ is:

²⁵⁹ Abram, *The Spell of the Sensuous*, p.75 (emphases in the original)

²⁶⁰ Abram, *The Spell of the Sensuous*, p.257

²⁶¹ Abram, *The Spell of the Sensuous*, p.273 (emphasis in the original)

²⁶² Abram, *Becoming Animal*, p.74, (emphasis in the original)

²⁶³ Discussed in Bennett, *The Enchantment of Modern Life*, p.133

to surround with song or incantation; hence, to cast a spell with sounds, to make fall under the sway of a magical refrain, to carry away on a sonorous stream.²⁶⁴

Abram, the sleight-of-hand magician, is intentionally using sounds to cast *The Spell of the Sensuous*.

These two volumes are significant achievements theoretically, aesthetically, and in their contribution to RN, but they are not above criticism. Abram wants his readers to be able to perceive and to think, as far as is possible, in a similar manner to people in oral animist societies,²⁶⁵ and there is a risk of naïve advocacy for a return to a more innocent epoch. However, Abram largely avoids that trap. If there is a Golden Age-type nostalgia, the criticism might be via Donna Haraway's claim that humans have always been 'cyborgs.'²⁶⁶ But while Abram is critical of how modern technology has undermined human perception of the nonhuman world, he never claims that ancient or current oral cultures are less technological. In his remarkable synthesis of human nature, *The Tangled Wing* (1982), Melvin Konner suggests that:

If we return, it should be to learn, not to mimic. The direct study of hunter-gatherers does not and cannot mean mere imitation of them, but it can lead to insights that must figure in the design of a workable world.²⁶⁷

This is a better description of Abram's position.

²⁶⁴ Bennett, *The Enchantment of Modern Life*, p.6

²⁶⁵ In doing so, Abram may help religious scholars to overcome the challenge identified by Stephen T. Asma and Rami Gabriel: 'Just as it is difficult for linguistically shaped minds like ours to think our way into the prelinguistic mind, it is difficult for monotheistic Westerners to think their way into animism, pantheism, and polytheism. But any understanding of the evolution of religion, especially as it relates to affect, will need to go beyond the familiar Axial Age religions, to consider some of the more spontaneous, preliterate forms of spiritualism.' (*The Emotional Mind*, p.285)

²⁶⁶ 'A Cyborg Manifesto' is contained in Donna Haraway, *Simians, Cyborgs and Women: The Reinvention of Nature* (New York: Routledge, 1991). Haraway's understanding of technology is expansive, so she would argue that oral cultures are not any less technological than modern capitalist societies.

²⁶⁷ Konner, *The Tangled Wing*, p.10. He continues: 'If we can make a workable social world (and it is not clear that we can), it will resemble hunter-gatherer life as little, or as much, as a wheel resembles a leg.'

Ironically, Abram is more vulnerable to criticism – this time from mainstream science - in the context of perhaps the most scientifically interesting aspect of his argument. He borrows from anthropologist Lucien Lévy-Bruhl the term *participation*, meaning:

the animistic logic of indigenous, oral peoples...for whom particular plants, particular animals, particular places and persons and powers may all be felt to *participate* in one another's existence, influencing each other and being influenced in turn.²⁶⁸

This is scientifically intriguing because the unconscious, prelinguistic affective responses that characterise EC, such as simulation processes (including the mirror neuron system) must be an important part of any current theory of animism. While he never uses the words ‘embodied cognition,’ his characterisation of participation as ‘the experience of an active interplay, or coupling, between the perceiving body and that which it perceives’²⁶⁹ is precisely what the EC theory of enaction proposes. He therefore feels able to conclude that, ‘prior to all our verbal reflections, at the level of our spontaneous, sensorial engagement with the world around us, we are *all* animists.’²⁷⁰

Thus far he is on fairly solid ground. Where Abram might over-extend, and risks disgruntling his more conventionally scientific audiences, is in the degree of participation he affords to inorganic entities. He claims that:

Once I acknowledge that my own sentience, or subjectivity, does not preclude my visible, tactile, objective existence for others, I find myself forced to acknowledge that *any*

²⁶⁸ Abram, *The Spell of the Sensuous*, p.57 (emphasis in the original)

²⁶⁹ Abram, *The Spell of the Sensuous*, p.57

²⁷⁰ Abram, *The Spell of the Sensuous*, p.57 (emphasis in the original)

visible, tangible form that meets my gaze may also be an experiencing subject, sensitive and responsive to the beings around it, and to me.²⁷¹

This does not follow. It is one thing to argue that trees and plants are sensitive and responsive – their possession of the equivalents to the animal senses of sight, smell, and touch (their light, chemical, and contact responsivity) is well established - and one might say that they have some form of awareness, albeit very different from the human kind.²⁷² However, this is much more problematic for rocks and rivers. These stretch the definitions of sensitive and responsive, and the case that they are ‘experiencing subjects’ is hard to sustain.

Lithic and fluvial exaggerations notwithstanding, Abram’s account of human-nonhuman interactivity - of ‘participation’ - is highly valuable for RN. My own experience is that awareness of participation while one is in the presence of nonhuman life can facilitate some of the desirable affects that RN cherishes. It is a form of enchantment which easily prompts, as Jane Bennett hopes in *The Enchantment of Modern Life*, an ethical attitude because of the additional respect it entails for the sentience of other life and the peculiarities of the myriad forms taken by that sentience: their strange combination of striking similarity to - and complete difference from - our own.

This might seem overly subjective. Maybe most readers are left cold by these texts? This is possible, but research (including laboratory studies) into reader responses to different kinds of language, some of which I reviewed in the previous chapter, suggests that my own reactions are not entirely idiosyncratic. There is also the fact of Abram’s popularity: it is clear from the Afterword to the second edition of *The Spell of the Sensuous* (2017) that the book has resonated in

²⁷¹ Abram, *The Spell of the Sensuous*, p.67 (emphasis in the original)

²⁷² See e.g. Daniel Chamovitz, *What A Plant Knows: A Field Guide to the Senses of your Garden – and Beyond* (London: Oneworld Publications, 2012)

a startling range of communities, and well beyond what he calls ‘the broad movement for ecological sanity.’²⁷³ It has been taught within philosophy, performing arts, the history of science, education, literature, anthropology, theology, and even architecture. Many bookstores considered it ‘uncategorizable,’ but this is perhaps one reason for its wide appeal. Indeed, Abram was honoured as one of the *Visionaries of the 20th Century* in the 2006 book of that name.²⁷⁴

However, I concede that my approach has limitations. Even if Abram has enjoyed a certain level of commercial success, there is doubtless work by many others which similarly engages our AEC but which languishes in obscurity. At the same time, some authors may not particularly engage our AEC and yet achieve a wide following. I might build a case around the vagaries of publishing and sales, but will instead point to the fact that not only is embodied simulation (which Abram, I will show, particularly provokes) only one aspect of what I have included under the AEC banner, but AEC is only a partial lens on affect, albeit an important one. The broader question of how texts relate to affect is vast, encompassing literary aesthetics, poetics, affective narratology, and more, and so well beyond my scope. AEC, then, is a significant part of a larger and more complex affective armoury that may contribute to the ‘deep experience’ defined in the last chapter, but which is not its only possible cause.

My analysis will be based on an approach to the reading process derived from the work of Michael Burke,²⁷⁵ which I summarised in the previous chapter as follows:

<i>Bottom-up / ‘Sign-fed’</i>	<i>Top-down / ‘Mind-fed’</i>
-------------------------------	------------------------------

²⁷³ Abram, *The Spell of the Sensuous*, p.276

²⁷⁴ Satish Kumar and Freddie Whitefield (eds.), *Visionaries of the 20th Century: A Resurgence Anthology* (Totnes: Green Books, 2006), pp.20-21

²⁷⁵ Burke, *Literary Reading, Cognition and Emotion*.

The exact text being read	The reader's knowledge of how similar texts tend to unfold (e.g. 'scripts')
Sections of previous text, whether the previous sentence or significant earlier fragments	Subconscious information about earlier experiences (whether or not related to reading)

Given the difficulties in analysing the affective influences in the bottom two boxes, I will focus in this chapter on the top left box – the exact text being read. In Chapter 5, when I consider the affective challenges for RN posed by narrative and plot, I will increasingly deal with the top right box - the reader's likely knowledge (conscious and unconscious) of how certain narratives unfold.

The Anthropomorphism Challenge for an Affectively Embodied RN

George Santayana wrote:

To stimulate the imagination is to produce the deepest, the most pertinacious emotions.

To repress it is to chill the soul, so that even the clearest perception of the truth remains without the joy and impetuosity of conviction.²⁷⁶

The ACAN's Problem of Alienation – the allegedly cold, drab character of naturalism – owes much to how its common conceptual reformulations engage the imagination, or fail to do so, and thus how they alter embodied affectivity. In many of its forms, naturalism appears to replace a universe of spirits, angels, and divinely inspired persons – of beings that are anthropomorphic

²⁷⁶ Santayana, *Interpretations of Poetry and Religion* (1957 edition), p.9

or otherwise familiar in their bodies and behaviour – with Euclidean, Newtonian, Darwinian, and (similarly alien) Einsteinian processes. As I showed in the last chapter, EC demonstrates why imagination is fundamentally a whole body phenomenon or, some would argue, a whole ecology phenomenon, and not one sealed inside the skull. The quality of embodied simulation engendered by a naturalist text is key to its capacity to confront the Problem of Alienation. As Graham Ward remarks, simulations or ‘as-if feeling states’ illuminate the processes by which beliefs are communicated.²⁷⁷ Naturalists are proposing a vision, and as with any other communication intended to persuade, the quality of the simulation is essential.

Before scrutinising Abram’s writing, what exactly is high quality simulation when it comes to ameliorating the Problem of Alienation? It is worth noting that reading is a less direct way to stimulate simulation than, say, physical imitation. One of the most memorable anecdotes in *Becoming Animal* involves Abram learning to embody, as far as possible, the form and behaviour of a raven.²⁷⁸ Similarly, Jane Bennett, in her study of enchantment, proposes that:

Once you have identified lines of flight distinctive to your own (always already) hybridized body, you might experiment with specific techniques to induce a rehybridization, to enter into new alignments with, say, animals.²⁷⁹

Such activities are beyond my scope. I am concerned with texts, and specifically with how Abram uses language-prompted simulation to deepen reader engagement with the nonhuman world.

²⁷⁷ Ward, *Unbelievable*, p.97

²⁷⁸ Abram, *Becoming Animal*, pp.226-27, 238-50, 254-58

²⁷⁹ Bennett, *The Enchantment of Modern Life*, pp.26-27

Simply triggering more simulation in a reader contributes to experiential ‘fullness,’ because the naturalist cosmology becomes suffused with heightened affective activity. While experiential ‘fullness’ need not always require consciousness of affective activity, it is generally desirable that it does so, and the simple quantity of simulation will make this more likely. Where a text fails in this regard, readers are likely to notice: as I mentioned in the previous chapter, Alexa Weik von Mossner criticises one ecological narrative for lacking ‘a single sentence in the story that invites readers to simulate in their minds the characters’ actions and emotions or the worlds that they behold’²⁸⁰ – in other words, for being deficient in producing motor, emotional, and perceptual simulation.

However, confronting the Problem of Alienation requires not just inducing large quantities of simulation but addressing some of the distinct simulation-related obstacles for naturalism. I will now examine these in turn, devoting most attention to the challenge of anthropocentrism, but also considering briefly the need for what Elaine Scarry calls linguistic ‘vivacity,’ and the influence of literary point of view.

RN has a characteristic that does not initially seem to bode well for spurring simulation. Alexa Weik von Mossner explains that:

Readers will map the sensations, emotions, and movements of a character onto their own brains, thereby understanding, and literally *feeling*, their interaction with the character’s environment, its pleasures, and its pain.²⁸¹

²⁸⁰ Von Mossner, *Affective Ecologies*, p.144

²⁸¹ Von Mossner, *Affective Ecologies*, p.25 (emphasis in the original)

Religious naturalists often wish to liberate humans from the locally and historically anchored settings of many traditional religious texts into the vastness of cosmic space and time. They therefore tend to avoid significant individual human actors. Their focus is more likely to be the biosphere as a whole, or the integration of life with broader planetary processes, or our situation among astronomic immensities. If emotional simulation evolved primarily as a means to understand other human beings, what does this mean for the comparative affective power of narratives that do not always put humans in the foreground? And is the activation of the motor neuron system (MNS) similarly biased towards observing, imagining, or reading about people rather than other animals or inanimate objects?²⁸²

The ‘purist’ RN position has been articulated by George Levine:

To move from a notion of a disenchanted world to a new experience of enchantment one needs to begin by rejecting anthropocentrism and coming to terms with the fact of nonhuman diversity, by recognizing perhaps in a Feuerbachian way that the values that inhere in the condition of prescientific enchantment were not only theological but powerfully anthropocentric.²⁸³

Another religious naturalist, Robert Corrington, similarly argues that:

Whenever it seems compelling to use a human trait at a key juncture in the [his] framework, every effort must be spent to assure that it is rendered as generically as possible.²⁸⁴

²⁸² This does not mean that any philosophy lacking human beings must necessarily lack emotional resonance, but that resonance must be achieved without recourse to some of the most powerful available affective resources.

²⁸³ Levine, *Darwin Loves You*, p.269

²⁸⁴ Robert Corrington, *Nature's Religion* (Lanham, MD: Rowman and Littlefield Publishers, 1997), pp.136-37

However, as both these authors recognise, it may not be possible to escape anthropomorphism. Feuerbach, along with Xenophanes, Tylor, and Freud are among the most famous thinkers to emphasise the projection of human attributes onto the divine. More recently, others have elaborated sophisticated arguments as to how and why we use our physical selves as templates for more than just the gods, and indeed why this process may be inescapable. As I have discussed, a key strand of EC builds from the work of Lakoff and Johnson on image schemas and how humans understand abstract concepts through bodily metaphor. Stewart Guthrie, whose cognitive theory of religion proposed that religions can be interpreted as systematised anthropomorphism, has also implied the universality of this phenomenon by identifying its presence in scientific explanation.²⁸⁵

Anthropomorphism may extend beyond projection and bodily metaphor. Embodied simulation, according to some scholars, can only get going in response to human beings, or at least living bodies. I will summarise the view of those who make relatively binary claims of this sort about embodied simulation, before arguing that it is less a case of ‘on versus off,’ and instead varies in kind and intensity.

Michelle Maiese claims that ‘persons have an affective and desiderative pull on us in a way that mere objects do not’ and, slightly more generously, that ‘living, lived bodies resonate with other living, lived bodies in a way in which they do not resonate with inanimate objects.’ She goes on to suggest that:

²⁸⁵ e.g. Stewart Guthrie, ‘A Cognitive Theory of Religion,’ *Current Anthropology* 21(2), 1980, pp.181-203

This is in part due to the coordination and mutual modulation activity that takes place during second-person interaction, whereby our affective framing patterns are continuously being influenced and reshaped by others' desires and concerns.²⁸⁶

Ed Tan and Nico Frijda argue that the emotions with which we respond to a great cinematic landscape are, by definition, non-empathetic.²⁸⁷ And an extension of this view is evident where Jesse Prinz highlights the bias and selectivity of empathy in moral judgment: we tend to empathise more easily with people close to us, or at least like us, rather than with out-groups.²⁸⁸

At this point, RN seems to be in a fix. It often wants to focus on the biosphere or the cosmos, rather than typical narratives with their human intentions and emotions, yet our capacities for embodied simulation (including emotional simulation) have presumably evolved for understanding other human beings and predicting outcomes of different behavioural choices. In other words, they are capabilities that resonate most strongly with anthropomorphic entities. Without heroes and villains, without immediate personal stakes, RN seems poorly placed to run a simulation on our bodies like traditional religions have done through their anthropomorphic beings. This would then place many potent, and specific, emotions beyond reach. For example, some scholars distinguish between sympathy, where one understands and might loosely 'feel for' another person in their predicament, and empathy, which involves actually sharing the same emotion.²⁸⁹ Indeed, one reason we enjoy fiction may be that we enjoy what we are good at, and fiction usually involves questions of the characters' genuine intent, a highly evolutionarily

²⁸⁶ Michelle Maiese, *Embodiment, Emotion, and Cognition* (London: Palgrave MacMillan, 2011), pp.167, 178

²⁸⁷ E. S. Tan and N. Frijda, 'Sentiment in Film Viewing,' in Carl R. Plantinga and Greg M. Smith (eds.), *Passionate Views: Film, Cognition, and Emotion* (Baltimore: Johns Hopkins University Press, 1999), p.52.

²⁸⁸ Discussed in von Mossner, *Affective Ecologies*, p.81. Keith Oatley makes a similar point: 'Reading a story about a protagonist with whom we share some characteristics is likely to trigger more emotional memories than reading about someone very different from ourselves.' (Oatley, *The Passionate Muse*, p.180)

²⁸⁹ Johnson-Laird and Oatley, 'Emotions in Music, Literature, and Film,' p.89; Oatley, *The Passionate Muse*, p.31; Ward, 'Reading to Live,' p.7

adaptive human skill.²⁹⁰ Some research suggests that when one reads about a character acting altruistically, the reader is ‘elevated’ – heightened and happy.²⁹¹ Affective powers such as these explain the increasing use of anthropocentric techniques in communication. ‘Literary non-fiction,’ for example, is a blended genre that adds fictional affect strategies to non-fiction, while research in legal settings exposes the affective shortcomings of the nonfiction format of court proceedings.²⁹²

However, the situation is more nuanced than many of these authors would suggest. Any theoretical position going so far as to propose a complete lack of ‘resonance’ for nonhumans soon runs into trouble. This is rather obvious from personal testimonies: the experience of many people is that they respond affectively to other forms of life, if only to their domestic pets. This is not surprising given the long line of investigation into the trans-species similarities in basic affective physiology, from at least Darwin’s *The Expression of the Emotions in Man and Animals* (1872) to Panksepp and Biven’s *The Archaeology of Mind* (2012).

Even for non-living entities the empirical evidence suggests considerable resonance. I described in the last chapter how direct or imagined perception of actions, and indeed reading or hearing certain action-related words, sparks motor simulation. However, Vittorio Gallese, one of the pioneers of MNS research, in a paper with art historian David Freedberg, cites research that even observing an object, at rest, that *affords* certain human actions – such as grasping - can trigger simulation of the relevant motor act. This has been demonstrated for tools, fruits, vegetables, clothes, and sexual organs.²⁹³ And recall that simulation does not require observing the object itself: it is prompted merely by reading the word for the object. Research using a

²⁹⁰ Oatley, *The Passionate Muse*, p.156

²⁹¹ Oatley, *The Passionate Muse*, p.165

²⁹² Oatley, *The Passionate Muse*, p.124

²⁹³ David Freedberg and Vittorio Gallese, ‘Motion, Emotion and Empathy in Esthetic Experience,’ *Trends in Cognitive Sciences* 11(5), 2007, p.200

device known informally as a ‘Graspasaurus’ demonstrates the activation of affordances when reading nouns such as belt, grape, and dish.²⁹⁴

Experiments also illuminate the physical responses to nouns that are harder to connect to bodily action, like cloud, pond, and flood, suggesting that affordances may not even be necessary.²⁹⁵ fMRI tests indicate that humans map inanimate movement, such as that of a waterfall (even if only perceived in art rather than directly) onto motor systems, simulating and thereby understanding it relative to their own bodies. The fact that we cannot perform that sort of movement appears not to matter.²⁹⁶ Gregory Currie’s argument that ‘some simulative processes are recruited to both personal empathy and empathy for objects’ builds on the work of the early twentieth century Empathists but includes a further fMRI study, co-authored by Gallese, showing that the secondary somatosensory cortex is activated by watching two inanimate objects touch.²⁹⁷ Freedberg and Gallese go as far as to ponder the kind of simulation evoked by a still-life.²⁹⁸ As von Mossner argues, our felt response to the destruction of Pandora’s Hometree in the film *Avatar*, or to the tornados in *Twister*, owes something to the human capacity for embodied simulation of botanical and meteorological entities.²⁹⁹

In sum, the extent and intensity of embodied simulation may depend at least as much upon how a text is executed than on the presence of anthropomorphic beings. This may seem obvious, but as noted above, Maiese, Tan, and Frijda are among those who have suggested otherwise. The conclusion most consistent with the evidence is that simulation may be maximally promoted by the presence in stories of other human beings, and indeed may begin to

²⁹⁴ Bergen, *Louder Than Words*, p.84

²⁹⁵ Bergen, *Louder Than Words*, pp.84-85

²⁹⁶ Von Mossner, *Affective Ecologies*, p.72

²⁹⁷ Currie, ‘Empathy for Objects,’ p.86.

C. Keysers, B. Wicker, V. Gazzola, J-L. Anton, L. Fogsi, and V. Gallese, ‘A Touching Sight: SII/PV Activation during the Observation and Experience of Touch,’ *Neuron* 42(2), 2004, pp.335-46.

²⁹⁸ Freedberg and Gallese, ‘Motion, Emotion and Empathy in Esthetic Experience,’ 2007, p.201

²⁹⁹ Von Mossner, *Affective Ecologies*, pp.72-73

reduce as soon as a human being is appreciably different from ourselves, but that the actions and perhaps implied emotions of nonhumans and inanimate objects can still be simulated by direct or imagined perception.

The approach and skill of artists and authors is therefore directly relevant to embodied simulation. What matters in written texts is ‘vivacity,’ the term used by Elaine Scarry to describe the quality that creates simulation not just of sensory outcomes but the material conditions that give rise to them.³⁰⁰ As stated above, it may help to use specific action, emotion, or perceptually rich words, but Scarry’s view aligns with that inviolable rule of fiction writing: ‘show, don’t tell.’ The sounds and rhythms of poetic language, for example, can boost simulation beyond that achieved by a particular word.

Embodied simulation may also be affected by point of view. Identification in narrative theory is a complicated topic and I cannot hope to do it justice here. I note only that some studies suggest that first person singular narratives are superior to third person perspectives at increasing identification with the protagonist,³⁰¹ and that affective resonance is likely to grow with such increasing identification. For Anežka Kuzmičová, what matters more is the presence of an ‘experiencer’;³⁰² in other words, she would agree with Marco Caracciolo when he argues that ‘we simulate only those characters to whose consciousness we are given direct access.’³⁰³ It is perhaps the case that the ideal for simulation combines these two properties in what is called a homodiegetic narrator – a first person narrator who is also a character³⁰⁴ – but as one of the discoverers of the MNS reminds us:

³⁰⁰ Scarry, *Dreaming by the Book*

³⁰¹ Johnson-Laird and Oatley, ‘Emotions in Music, Literature, and Film,’ p.89

³⁰² Anežka Kuzmičová, ‘Literary Narrative and Mental Imagery: A View from Embodied Cognition,’ *Style* 48(3), 2014, p.282

³⁰³ Caracciolo, ‘Blind Reading,’ p.84

³⁰⁴ Aristotle would have loved to learn that the rhetorical appeal he called *ethos* – the personality and credibility of the orator – is doubtless boosted by the superior simulations produced by a speaker providing vivid anecdotes with herself as protagonist.

The sharp distinction, classically drawn between the first- and third-person experience of actions, emotions, and sensations appears to be much more blurred at the level of the sub-personal mechanisms mapping it.³⁰⁵

The situation is therefore inconclusive, and it is possible that the natural advantages of a particular point of view could in many cases be outweighed by other aspects of authorial style and skill.

Before turning to embodied simulation in David Abram's work, I must engage a potential criticism of what I have just outlined: is this merely a general theory of literary aesthesis informed by EC research? The first response is to dispute 'merely,' because a comprehensive version of such a theory (as contrasted with my brief analysis) would be ground-breaking: von Mossner and Bergen assemble many of the relevant studies, but I am not aware of an explicit, systematic and thorough treatment. Such an account might astonish and perhaps antagonise literary scholars still labouring under the sway of mind-body dualism. A second rebuttal is that I am offering something more specific than an approach to embodied literary aesthesis, given my focus on distinct obstacles for naturalism, particularly around anthropomorphism. And I am operating in the context not just of prose and poetry but of their use for orientating and motivating human beings in ways for which the label 'religious' may be justified. As Santayana argued, 'mere poetry is an ineffectual shadow of life; religion is, if you will, a phantom also, but a phantom guide.'³⁰⁶ What Abram and other religious naturalists seek to offer is not just a shadow, but a guide – a guide that can be more compelling if it intentionally enlists and channels AEC.

³⁰⁵ Vittorio Gallese, 'Embodied Simulation: From Neurons to Phenomenal Experience,' *Phenomenology and the Cognitive Sciences* 4, 2005, p.43

³⁰⁶ Santayana, *Interpretations of Poetry and Religion*, chapter 2 (Project Gutenberg e-book)

Abram and Embodied Simulation

I suspect that the experiential impact of reading Abram's work owes much to the sheer quantity and quality of simulation that it breeds. This is enabled by a first person point of view that fluctuates between singular and plural but includes numerous anecdotes with the narrator as protagonist, thereby facilitating the reader's engagement and identification. However, in this analysis I want to focus on embodied simulation. Both *The Spell of the Sensuous* and *Becoming Animal* teem with simulation-inciting language. Emotional simulation – at least through emotion words - is less prevalent, but perceptual and motor simulation are extraordinarily rich. From a multitude of examples, I will present just three.

- (1) Every solid thing, whether a toothpick or a trumpet, a porcelain plate or a helicopter, is fashioned from materials once birthed by the earth.³⁰⁷

Here the perceptual simulation is of multiple kinds. Visually, we encounter a range of objects of different sizes and appearance, but there are also the auditory qualities of trumpets and helicopters, as well as tactile dimensions in their range of materials (most notably the particular sensation of using a toothpick). The sentence also prompts motor simulation not so much through movement words, in this instance, but through object words with certain affordances – the particular hand movements associated with manipulating a toothpick, playing a trumpet or handling a plate. Finally, the idea of all the common origin of 'every solid thing' is mirrored in the rhyme of *birth* and *earth*. While there is no space here to present a theory of rhyme, I note the experimental evidence confirming the assumptions of cognitive poetics that both meter and

³⁰⁷ Abram, *Becoming Animal*, p.28

rhyme lead to ‘enhanced aesthetic appreciation, higher intensity in processing, and more positively perceived and felt emotions.’³⁰⁸

It is, of course, possible to skip over this or any other sentence. Simulation relies to some extent on quality of attention, but if one has read the words even just to the extent of understanding them, than simulation is evoked; simulation is part of the very process of understanding what we have read. Note also that, because we and other organisms are attuned to notice changes in the environment, rhyme and alliteration are properties that can prompt us to notice and can thereby focus attention, which enhances simulation in turn.

- (2) Flat rocks and rough rocks, needles cast off by the pines, grit that clings between the toes as they flex against the land: each patch of land requests a different kind of step, which my legs discover only in the doing. My feet are like ears listening downward, and a dark rhythm rises up into me from this contact – a pulse that slows down and deepens the private beat within my heart.³⁰⁹

In this case, Abram triggers activity in the reader’s brain regions associated with flexing toes and stepping legs, and may cause associated micro-movements. Doubtless there is also simulation, perhaps more complex, flowing from reading about a slowing, deepening heartbeat and when processing the arresting comparison of feet to listening ears. Nonhuman entities are animated too: the pines *cast off* needles, the grit *clings* and the land *requests*. And the *flexing toes* simulation is

³⁰⁸ Christian Obermeier *et al.*, ‘Aesthetic and emotional effects of meter and rhyme in poetry,’ *Frontiers in Psychology*, Volume 4, Article 10, 2013, p.1.

There is also the ‘rhyme as reason’ effect whereby rhyming statements are judged to be more truthful. See e.g. Matthew S. McGlone and Jessica Tofiqbakhsh, ‘The Keats heuristic: rhyme as reason in aphorism interpretation,’ *Poetics* 26(4), 1999, pp.235-44.

³⁰⁹ Abram, *Becoming Animal*, p.59

augmented and enriched through association with the specific tactile references to *flat*, *rough*, *needles* and *grit*.

- (3) Each is equivalently outrageous, a clump of dirt no less than a marauding brown bear – each enacting its own tenuous and improvised way in the world, each gifting its own rhythms to the riot of life that surrounds it. Every gust of wind, every note ringing forth from the bell tower, each staccato step of a water strider along the stream’s surface, has its own subtle influence on the beings around it.³¹⁰

Here again the perceptual simulation is visual, auditory and tactile, with words indicating movement that prime motor simulation – *marauding*, *rhythms*, *riot*, *gust*, *staccato*. But perhaps the most effective aspect of this passage is that Abram’s point is the ‘subtle influence’ that each being or entity has on others, and much of this influence takes place within ourselves in the form of simulation.

Two other hallmarks of Abram’s language deserve attention. The first is its specificity: ‘the same air that nourishes the cedars and swells the cumulus clouds.’³¹¹ *Cedars* and *cumulus*, not trees and clouds. This is not merely ‘good writing,’ or, if it is, EC gives us an important new – or at least under-appreciated - understanding of why ‘good writing’ works: ‘trees’ and ‘clouds’ do not invite the same vividness of perceptual simulation as *cedars* and *cumulus*, assuming we have some sense of what the latter look like.

The second hallmark is the poetic style, which so effectively matches sound and sense. Abram wants what he calls the ‘more-than-human-world’ to reverberate within us, and he does

³¹⁰ Abram, *Becoming Animal*, p.70

³¹¹ Abram, *Becoming Animal*, p.11

so by casting its movements into the felt rhythms of poetry. Our cognitive processing of what he describes is thereby ‘fleshed out’ with affective embodiment. An example is ‘a kestrel motionless on a fence post,’³¹² which begins by moving iambically but soon falters. ‘Motionless’ is conveyed by the word itself - its length and dactylic petering out suggesting a coming to rest, which the sentence duly does in a ponderous spondee (*fence post*). The final stillness is further reflected by echoing early elements at the end of the phrase, both assonantly (*kes-* and *fen-*) and consonantly (*kestrel* and *post*). To feel the difference, consider the impact had he wrote ‘a kestrel sat on a fence,’ which, while prompting the visual simulation of a kestrel and a fence and the motor simulation of sitting, does not recreate in ourselves, to the same degree, the movements of this denizen of the ‘more-than-human-world’ as it comes to rest.

Elsewhere Abram just as effectively conveys movement rather than calm, as in the following passage:

Only much later, as the child is drawn deeply into the whirling vortex of verbal language – that flood of phrases that earlier surrounded her simply as a beckoning play of melodic sounds continuous with the cries of ravens and the rumble of thunder...³¹³

It is not just the combination of the auditory (*melodic, cries of ravens, rumble of thunder*) and the sensorimotor (*whirling vortex, flood, beckoning*), but the way that ‘flood’ launches a long punctuation-less clause featuring a deluge of alliterative pairs: *flood of phrases, surrounded her simply, continuous with the cries, ravens and the rumble*.

³¹² Abram, *Becoming Animal*, p.137

³¹³ Abram, *Becoming Animal*, pp.38-39

In sum, Abram is essentially promoting a form of language that enhances perceptual and motor simulation, as confirmed by this passage from *The Spell of the Sensuous*:

A story must be judged according to whether it *makes sense*. And “making sense” must here be understood in its most direct meaning: to make sense is *to enliven the senses*. A story that makes sense is one that stirs the senses from their slumber, one that opens the eyes and the ears to their real surroundings, tuning the tongue to the actual tastes in the air and sending chills of recognition along the surface of the skin. To *make sense* is to release the body from the constraints imposed by outworn ways of speaking, and hence to renew and rejuvenate one’s felt awareness of the world. It is to make the senses wake up to where they are.³¹⁴

And, once again displaying his poetic flair, Abram makes his point by contrasting the kind of language that promotes simulation with abstract text that does not. Compare the first section, up to the semicolon, to that which comes afterwards:

Oral language gusts through us – our sounded phrases borne by the same air that nourishes the cedars and swells the cumulus clouds. Laid out and immobilized on the flat surface, our words tend to forget that they are sustained by this windswept earth; they begin to imagine that their primary task is to provide a *representation* of the world (as though they were outside of, and not really *a part of*, this world).³¹⁵

While Abram never mentions simulation in either book, I suspect that the way that he enlists perceptual and motor simulation in particular constitute a large part of the impact to

³¹⁴ Abram, *The Spell of the Sensuous*, p.265 (emphases in the original)

³¹⁵ Abram, *Becoming Animal*, p.11 (emphases in the original)

which many have testified.³¹⁶ Abram ameliorates the Problem of Alienation very directly by engendering a scale and intensity of perceptual and motor simulation that elevate the nonhuman and embody our sense of connection with it. What I have described as experiential fullness is advanced ‘by inhabiting our bodily experience all the more richly and wakefully.’³¹⁷

Abram and Image Schemas

Following embodied simulation, the second area of EC upon which I have focused in this thesis is how the body and its movements provide the base metaphors that shape and constrain abstract concepts. It would be possible to undertake an extensive project on the subject of how Abram’s texts relate to the various image schemas whose identities and functioning were investigated in detail by Lakoff and Johnson.³¹⁸ I will therefore concentrate on perhaps the two most important for Abram’s mission to reunite us with the nonhuman world. The first is the container schema, which Abram must disrupt in at least two of its manifestations: the human-nonhuman divide and, relatedly, the subject-object severance. The second is the connection between the vertical and the superior, the image schema that underpins the Great Chain of Being and that must be undermined in order to establish a more equitable relationship between human beings and nonhuman sources of awareness. As I will show, Abram disrupts these conceptually and reinforces the new alignments through embodied simulation.

³¹⁶ Whether or not his more explicit hypothesis on the consequences of alphabetic literacy is correct, it may not overly reductionist to say that simulation is an indispensable biological substrate for animist sensibilities. I also posit that the more keenly and habitually one observes another animal or ‘inanimate’ object – as might one of the magicians he encounters or indeed a passionate ethologist – the more one is likely to be sensitive to pre-conceptual affective stirrings.

In both books, Abram reports on his encounters with shamans and tribal magicians (his terms for what are contested labels in post-colonial contexts) and the way in which intense engagement with nonhuman animals dissolves species boundaries (*The Spell of the Sensuous*, p.256; *Becoming Animal*, p.217). Given what we now know about simulation processes, this engagement presumably entails attunement to them.

³¹⁷ Abram, *Becoming Animal*, p.143

³¹⁸ e.g. in *Metaphors We Live By* and *Philosophy in the Flesh*

I argued in the last chapter that the container schema is the basis for much human conceptual framing. Categorisation itself emerges from our bodily experience, beginning rather traumatically at birth itself (if not sensed *in utero*), of the capacity for a physical thing to be inside or outside some other thing. Phenomenologists have emphasised that our pre-reflective experience – our lifeworld - is of an undivided field. However, it is also the case that our everyday experience of the world involves containers, whether for our own bodies or other objects. Containerisation therefore precedes conscious classification of the world. There is an irony in that mainstream science, whose practices involve increasingly fine analytical distinctions, often delivers results that undermine boundaries. For example, it is modern science that has revealed evolutionary, physiological and other continuities between the human and the nonhuman, and the porosity between apparently separate entities when observed or theorised at very small scales.

Hence, the container schema is at play, and is generally adaptive, both phenomenologically and where we consciously extract phenomena for analysis. One can, with sufficient awareness, mitigate its more baleful influences: Richard Dawkins, for example, is wary of the ‘discontinuous mind’ and how its essentialism is an obstacle to grasping evolutionary theory.³¹⁹ However, containerisation is too fundamental to be expunged, even if that were desirable. Given its intransigence, authors might be wise to redefine the edges of specific containers and our relationship to them, rather than trying to dissolve the landscape into conceptual slush.

³¹⁹ See the essay titled ‘Gaps in the Mind’ in Richard Dawkins, *A Devil’s Chaplain* (London: Phoenix, 2004), pp.23-30. It is worth noting that the container schema is also relevant to what people containerise as ‘science’ or ‘scientific’ versus ‘not science’ or ‘unscientific,’ and that in the context of an argument the disputants tend to harden the boundary.

This is what Abram achieves on several fronts, redrawing the customary boundaries of human identity. For example, he not only makes the connection between the sonority of human speech and the sounds of other beings, but situates our speech within a vastly bigger container: ‘It is the animate earth that speaks; human speech is but a part of that vaster discourse.’³²⁰ Elsewhere, he discusses the everyday parlance of living ‘on’ the Earth, which unhelpfully suggests isolated beings on a surface (outside a container), whereas we are in fact located within an atmosphere on which our survival depends (inside a container). He uses the term ‘Eairth’ to convey this sense of a much larger planetary body that consists of both earth and air. In both cases – the world of ‘speech’ and the planetary borders - he expands the container and hence repositions us within rather than outside it.

This is part of his broader strategy of challenging the containers ‘subject’ and ‘object.’ What he seeks to remedy is the historical error pinpointed by Lakoff and Johnson:

The problem with classical disembodied scientific realism is that it takes two intertwined and inseparable dimensions of all experience – the awareness of the experiencing organism and the stable entities and structures it encounters – and erects them as separate and distinct entities called subjects and objects. What disembodied realism (what is sometimes called ‘metaphysical’ or ‘external’ realism) misses is that, as embodied, imaginative creatures, *we never were separated or divorced from reality in the first place.*³²¹

Bryan Appleyard describes the affective fallout from this error in his version of the ACAN:

³²⁰ Abram, *The Spell of the Sensuous*, p.179

³²¹ Lakoff and Johnson, *Philosophy in the Flesh*, p.93 (emphasis in the original)

Science trapped us all in our private reasons. It divided us from our world, locked us in the armoured turrets of our consciousness. Outside was an alien landscape which was either illusory or meaningless, inside was the only possession of which we could be sure – the continual, anxious chattering of our self-awareness. Our souls were removed from our bodies.³²²

A further plank of Abram's subject-object integration strategy is his theme of human-nonhuman 'participation.' While the oft-cited fact of biological kinship helps integration, Abram's accounts of the participatory processes of continuous interactivity and responsiveness between the human and the nonhuman, and the extent to which they operate beneath the threshold of conscious awareness, deepens integration further.

If we are to consider speech to be a property of the nonhuman too, and if we are to conceive of ourselves as existing within the air – within an atmosphere - rather than merely atop the planetary surface, how is that to be made affective? How is it to be experienced and felt? Abram achieves it by combining these re-conceptualisations of particular containers with the kinds of embodied simulation I have already explored. We cannot help reading his vivid passages about nonhuman speech without somehow simulating what that speech might be like (as discussed, simulation is part of understanding a text in the first place), and it does not matter – as far as increasing our engagement is concerned – that those simulations may be wildly inaccurate in a scientific sense. Considering the surrounding air, he writes:

³²² Appleyard, *Understanding the Present*, p.59

What plants are quietly breathing out, we animals are breathing in; what we breathe out, the plants are breathing in. The air, we might say, is the soul of the visible landscape, the secret realm from whence all beings draw their nourishment.³²³

Following our earlier discussion of the extent to which simulation extends to nonhumans, one wonders if motor and indeed perceptual simulation are spurred by this reference to plants breathing, but again, we will simulate in order to understand the text, however scientifically inaccurate that simulation. In any case, the reference to plants breathing is in proximity to ‘we animals are breathing in,’ which we will simulate more directly.

Abram’s definition of ‘nonhuman’ is more than just the living. He wants to place us within a whole Earth container. The combination of this re-conceptualisation with simulation is also at play here. While I have criticised the generosity with which he affords sentience to geological phenomena, his discussion of gravity is less problematic. By referring to the ‘erotic nature of gravity’³²⁴ he yokes certain simulations to abstract and potentially alienating concepts, contrasting starkly with the kind of arid Newtonian accounts that the ACAN cites under the Problem of Alienation. Note the difference between ‘erotic nature of gravity’ and Brian Swimme’s ‘gravity is love’³²⁵: it is hard to conceive the latter as anything but metaphorical, but the former is primarily phenomenological, and much more immediate and visceral. It is Abram’s attempt to convey his sensation – however foreign to many readers – of the feeling of the ground, and one’s weight, through bare feet. Readers are unlikely to have encountered previous descriptions of gravity being ‘erotic,’ and novelty of this kind has been shown to activate the

³²³ Abram, *The Spell of the Sensuous*, p.226

³²⁴ Abram, *Becoming Animal*, p.27

³²⁵ Brian Swimme, *The Universe is a Green Dragon: A Cosmic Creation Story* (Santa Fe: Bear and Company, 1984)

motor system more than expressions whose vibrancy has dimmed through use.³²⁶ This is to be expected given that simulation is itself part of the comprehension process.

In this section I have so far focused on containerisation and how Abram reconceptualises the boundaries and generates simulations to underpin this revised cosmology. I now turn to another of the basic aspects of the human body that, according to EC theory, provides a framework for more abstract thought, namely its vertical axis. Some EC scholars propose that our upright posture, and the association of height and depth with dominance and submission respectively (in stature and gesture, and in relation to other creatures) is ultimately why most cultures and languages conceive of ‘up’ as positive, superior, happy, and so on, and ‘down’ with the opposite. They cite studies such as that in which those imagining or hearing about theological entities with a canonical location – such as god, who is canonically above – use the parts of their visual system dedicated to perceiving objects in that location (eye-tracking occurs even when people are imagining).³²⁷

In this view, our upright posture has helped to establish, for example, the idea of a Great Chain of Being. Many religions, including the great monotheisms, suppose a Great Chain and encourage an orientation towards, and desire for connection with or even absorption into, the ‘higher’ echelons. The faithful will mirror the actions and emotions of those ‘above’ – saints, prophets, angels, God himself – through embodied simulation, and may be encouraged to do so in the language of ‘imagination’ or following divine examples. RN therefore faces a challenge regardless of whether the theory of embodied metaphor is correct, due to the weight of cultural inheritance that might counter the attempt to persuade others that more equitable relationships with the nonhuman are justified both cosmologically and ethically.

³²⁶ Bergen, *Louder Than Words*, p.206. The studies in question relate to metaphors, but even if gravity as ‘erotic’ is not strictly metaphorical, it is likely that motor activity will be similarly stimulated by the novelty of the expression.

³²⁷ Bergen, *Louder Than Words*, pp.60-63

Right at the beginning of his first book, Abram disrupts the reigning verticality, not through abstract discussion but implicitly through striking descriptive language. *The Spell of the Sensuous* opens with a vivid account of Indonesian paddy fields into which a clear night sky laden with stars is reflected, leading to a kind of enchanted disorientation. The simultaneous reflection of a host of fireflies compounds the effect.³²⁸ Note that he is not attempting to overpower the inherent affectivity of verticality, which, as I have argued, has a strong neurobiological grounding. That affectivity is retained through our embodied linguistic comprehension of what is canonically above: the stars and, probably, the idea of flight (in this case of the fireflies), while at the same time we are placed in the midst of this activity. It represents a collapsing of immanence and transcendence, or perhaps their integration. The affects commonly associated with stars and flight are harnessed while a re-containerisation takes place whereby, phenomenologically at least, we are immersed within.

Here and throughout Abram's work are examples of perhaps the main strategy through which RN seeks to topple the verticality challenge, namely what I call *elevating the material* but which in Abram's specific case might be called elevating the nonhuman. It is achieved by much greater attention, specificity, and respect to what has traditionally been conceived as 'below,' so that, in the words of Swimme and Berry, 'we have not descended to a lower level; they [nonhuman entities] have, as it were, been recognized at a higher level.'³²⁹ We can massively increase our appreciation for the variety and sophistication of the nonhuman, and of materiality itself.

³²⁸ Abram, *The Spell of the Sensuous*, pp.3-4

³²⁹ Swimme and Berry, *The Universe Story*, p.246

Elevating the nonhuman is also achieved more directly through the changes within our bodies that constitute simulation. As we have seen, part of the simulation process involves the same brain regions being activated for third-person experience – on nonhuman experience – as they are for first-person experience. Simulation can therefore underpin David Herman’s call for ‘new ways of imagining and responding to transspecies relationships within the larger biosphere,’ which ‘remains an urgent task for narratology in the twenty-first century.’³³⁰ The emphasis in Abram and elsewhere in RN on ‘transcorporeality,’ as Graham Ward calls it,³³¹ is reflected in the realities of simulation.

Simultaneously, what is naturally ‘highest’ – such as the stars – can be brought into close association not just with ourselves but with the nonhuman. Abram does this in reflecting the stars in the paddy fields, but scientific discovery has demonstrated the presence in Earth’s organic beings of the heavier elements in a supernova, hence the common reference to humans (and erroneously usually only humans) as stardust or starstuff. I will develop the affective potential of this idea in Chapter 6. For now, I suggest that connecting the ‘high’ to the nonhuman is an important affective strategy because of the phenomenon of ‘affective transfer’ or ‘affective tow.’ As Stephen Asma and Rami Gabriel argue:

Source patterns will have affective tone and thus affective content. This affective content will map onto the target pattern of the analogy, and the degree of this affect transfer will depend on the level of executive control of emotional editing the animal can do.³³²

In the current context, this means that the affectivity of the high (metaphorical source, derived from the nature and consequences of human body orientation) will often be transferred to the

³³⁰ David Herman, ‘Narratology beyond the Human,’ *Diegesis* 3(2), 2014, p.141

³³¹ Ward, *Unimaginable*, p.63

³³² Asma and Gabriel, *The Emotional Mind*, p.203

more abstract concept (the metaphorical target).³³³ RN would be in difficulty if the affectivity carried by height is not easily available for the nonhuman, but it can be harnessed if authors not only elevate the nonhuman but bring ‘down’ and attach notions of height.

Abram and Pankseppian Emotional Systems

I have described how Abram redefines and expands containers, how he disrupts prevailing (arguably embodied) affective biases towards height, and how he invigorates the new cosmology with embodied simulation, all of which enhances the depth of our integration within a more-than-human community. However, there is a complementary strategy available involving the third strand of AEC that may seem the most direct, namely to activate – in the context of the nonhuman - the emotional systems distinguished by Jaak Panksepp, such as CARE, GRIEF, PLAY, and SEEKING.³³⁴

The immediate challenge for RN and CARE in particular might appear to be the scientific consensus around the evolution of altruism: it derives from kin selection and, to some extent, reciprocity. It may indeed be difficult to challenge the evidence that CARE and the oxytocin-based system to which it refers are activated in mammals preferentially towards those with whom we share a greater genetic inheritance: it is supported in evolutionary theory and algorithms (since the original ‘Hamilton’s rule’ on kin selection³³⁵) and by both studies of behaviour and direct physiological monitoring such as that carried out by Panksepp himself. However, it is obvious that this emotional system can be activated for relatively distant kin (and perhaps inorganic entities), in human beings and indeed other animals in certain circumstances.

³³³ I concede that while the notion of ‘affective tow’ has considerable support via affective neuroscience, a longer defence would be desirable in Chapter 2 had space constraints permitted.

³³⁴ Panksepp and Biven, *The Archaeology of Mind*

³³⁵ W. D. Hamilton, ‘The genetic evolution of social behaviour,’ *Journal of Theoretical Biology* 7, 1964, pp.1-16

A systematic approach would be to begin with a diagram like that reproduced by religious naturalist Connie Barlow in *Green Space, Green Time* (1997). Labelled ‘Expanding the Circle’ (and thereby echoing the title of Peter Singer’s animal rights-related book *The Expanding Circle* (1981)), it shows concentric circles moving from the self outwards to kin; tribe; race, nation, and religion; all other people; individual sentient animals; individuals of nonsentient species; whole species, ecosystems, and Earth.³³⁶ One would then seek to activate the CARE system, and perhaps also its relation where the bonds are broken – GRIEF - in the context of increasingly distant circles.

A recent example of a dwindling glacier in Iceland called Ok demonstrates how the activation of CARE and GRIEF may be feasible outside organic contexts. In a poignant piece of anthropomorphism, a memorial plaque was erected to commemorate the demise of the glacier, thereby associating with it the GRIEF responses usually reserved for humans. The text on the plaque reads:

A letter to the future: Ok is the first Icelandic glacier to lose its status as a glacier. In the next 200 years all our glaciers are expected to follow the same path. This monument is to acknowledge that we know what is happening and what needs to be done. Only you know if we did it.³³⁷

One might argue that GRIEF here is more associated with the prospect of more dire ecological changes in future than with the glacier itself, but it is at least a significant step towards binding GRIEF circuits with something inorganic. A similar appeal is proposed by those who argue that

³³⁶ Connie Barlow, *Green Space, Green Time: The Way of Science* (New York: Copernicus, 1997), p.259. Barlow states that the diagram is adapted from Reed F. Noss, ‘Issues of Scale in Conservation Biology,’ in P. L. Fiedler and Subodh K. Jain (eds.), *Conservation Biology* (New York: Chapman and Hall, 1992), pp.239-50. Peter Singer’s earlier elaboration of such an ethical framework is found in *The Expanding Circle: Ethics and Sociobiology* (Oxford: Oxford University Press, 1981).

³³⁷ www.bbc.co.uk/news/world-europe-49345912, 17 Aug 2019, retrieved 23 Sep 2020

ecological awareness and action is not easily spurred by references to abstract or numerical data. Rather than emphasising the size of (often distant) forests lost, highlighting the threat to – or loss of – a particular woodland in which one played as a child is likely to be far more galvanising due to GRIEF and perhaps an associated RAGE.³³⁸

One can see how, for the glaciers and ancient woodlands that remain, other Pankseppian systems might be engaged. The release of oxytocin essential to the CARE system may be expanded even to glaciers if authors communicate their positive felt experiences with them in a way that prompts strong simulation in a reader. The PLAY circuits might be incited by appropriately descriptive writing – perhaps relating to skiing or huskies - while the anticipation of such activity might trigger the dopaminergic responses of the SEEKING system. This has yet to be demonstrated convincingly, and there would doubtless be much individual variation. However, if such activations are to any extent feasible for a glacier, they are likely to be at least as possible for woodlands and other nonhuman forms of life.

It is not clear from Abram's texts whether he is familiar with Panksepp or other affective neuroscientists, but he evidently wants to encourage emotional responses, and particularly CARE, towards the 'more-than-human world.' He does not do so by frequent use of emotion words themselves, which, as I mentioned in the context of language processing, might be effective so long as the impact of these were not dimmed by overuse. He does, however, encourage it through an increased quantity and quality of attention towards the countless astonishing manifestations of the nonhuman, which, as Jane Bennett proposed, can promote an ethical stance by virtue of their enchanting character. Having thus elevated the nonhuman, and

³³⁸ See e.g. Charles Eisenstein, *Climate: A New Story* (Berkeley, CA: North Atlantic Books, 2018), pp.131-53

helped us to resonate with it physically through simulation, raising the spectre of its annihilation might activate GRIEF.

Naturalist Imaginaries

In this final section of the chapter, I want to move forward from the analysis of how Abram's particular work intersects with AEC to a broader, constructive suggestion for how other religious naturalists might harness AEC in order to enhance engagement with the nonhuman world. There may be very different approaches that, like Abram, accomplish the same feat and thereby counter the detachment and abstraction problems underlying the Problem of Alienation.

I began this chapter with William James's suggestion that 'the life of religion...consists of the belief that there is an unseen order, and that our supreme good lies in harmoniously adjusting ourselves thereto.'³³⁹ James was referring to traditional religion, but if, as an experiment, we interpret his claim in a naturalistic sense, we have an avenue by which to understand the role of AEC in our bodily resonance with the natural 'unseen order.' The use of instruments that hugely extend the limits of the human senses has produced a multitude of scientific discoveries relating to such an order – or, better, to such a *realm*, a term which avoids unnecessary claims about structure or hierarchy, and has an enchanting quality. We sense and respond to some aspects of that realm in the form of unconscious affects, but much of it we can engage with more proactively through imagination and its processes of simulation. I will propose that embodying, in this way, more of the universe in its various forms can spur ethical motivations. Moreover, the use of imagination in this way is arguably a form of transcendence insofar as we seem to escape

³³⁹ James, *The Varieties of Religious Experience*, p.53

from our bodies, and yet, as the phenomenon of simulation demonstrates, this is achieved with entirely bodily facilities.³⁴⁰ Religious naturalists may therefore, in the words of James, adopt a ‘religious attitude’ with an unseen realm through ‘harmonious adjustment.’

James’s case for the importance to religion of an ‘unseen order’ is echoed by contemporary scholars. Gavin Flood observes that ‘most religions claim to be revelations of something previously concealed... These revelations are displays or attempts to show human communities some truth about the world.’³⁴¹ Graham Ward proposes that ‘as human beings we increasingly became defined by our symbolic capacity and our concomitant ability to carve something from what was unseen.’³⁴² But this preoccupation with the unseen is not solely a feature of traditional religion. As Dennis Ford proposes, there is a more general human desire for an unseen and somehow more meaningful realm: ‘Humankind seems to have a restless hunger to connect with something – a realm, spirit, or community – that is more universal and timeless than the lives we experience.’³⁴³

What then is that unseen yet highly meaningful *naturalist* realm that will counter the Problem of Alienation? And how do we engage it? It seems to me that religious naturalists can – and often do – propose an unseen dimension of supreme importance, but that these are the unseen phenomena of scientific discovery, which are very much of the same world rather than existing on a supernatural plane. A number of thinkers have followed this line of thought, including John Dewey, who highlights its emotional fruits:

³⁴⁰ Lakoff and Johnson, *Philosophy in the Flesh*, p.565

³⁴¹ Gavin Flood, *The Importance of Religion: Meaning and Action in our Strange World* (Chichester: Wiley-Blackwell, 2012), p.212

³⁴² Ward, *Unbelievable*, p.224

³⁴³ Ford, *The Search for Meaning*, p.75

The idea of invisible powers would take on the meaning of all the conditions of nature and human association that support and deepen the sense of values which carry one through periods of darkness and despair to such an extent that they lose their usual depressive character.³⁴⁴

Some religious naturalists, too, are aware of this idea: I will shortly come to how Abram interprets it, but for now note that Jerome Stone ‘urge[s] us to be open to norms and resources that are beyond our narrowly perceived present situation yet are not resident in a different realm.’³⁴⁵ This is how we might understand what I call *naturalist imaginaries*.

I choose this formulation partly because it follows Gavin Flood’s proposal that ‘religions function as traditions with long histories that contain fundamental metaphors and imaginaries.’³⁴⁶ However, it also serves to disrupt a common conception that a scientific outlook and imagination are somehow in opposition. Imagination is not merely involved in the generation of hypotheses for testing, but is usually required for the communication of, and reflection upon, scientific discoveries. And yet, in the opposite direction – and contrary to what the Problem of Alienation may imply - scientific discovery and indeed reason itself can also expand our imaginations beyond what they can achieve unaided. Darwin understood this when he reflected that reason led him to what others had failed to imagine,³⁴⁷ and it is why Santayana’s claim that imagination is ‘the true realm of man’s infinity’ is questionable where imagination is interpreted too narrowly.³⁴⁸ Scientific discovery can act as a *portal* for a richer imaginative appreciation of the unseen.

³⁴⁴ Dewey, *A Common Faith*, pp.14-15

³⁴⁵ Stone, *Religious Naturalism Today*, p.145, when summarising his book *The Minimalist Vision of Transcendence: A Naturalist Philosophy of Religion* (Albany, NY: State University of New York Press, 1992)

³⁴⁶ Flood, 2012, p.127

³⁴⁷ See discussion in Levine, *Darwin Loves You*, pp.153, 244

³⁴⁸ Santayana, *Interpretations of Poetry and Religion*, p.20

It is noteworthy that in English and German, wonder (*Wunder*) may originate in *wound*, and perhaps refers to ‘a tear in the fabric of the ordinary, an “uncanny opening.”’³⁴⁹ Scientific understandings can offer such an opening – such a portal - to something beyond everyday experience, and while music, literature, sports, and various other phenomena may also act as gateways to wonder, I draw attention to the particular value of the science-informed portal for illuminating the unseen. This is very different from the theological notion of nature as an extra-biblical revelation from which we can discern divine intentions and action,³⁵⁰ because it refers only to the *experimentally substantiated* unseen of the universe, and of a universe *naturalistically* understood.

Conceiving scientific discovery as a portal of the magical type characteristic of childhood tales is more important as a line of thought than it might initially seem. This is not just because my use of ‘imaginary’ intentionally invokes the fantastical affect that using this adjective as a noun can create, but because there is in many people a desire for the freshness of childhood perceptions. Dennis Ford notices this in his discussion of naturalism:

The biblical pattern of paradise lost and paradise regained is repeated in a new, entirely naturalistic expression that excites a feeling analogous to those we feel when encountering the divine. As children, everything is new and wondrous and the question of meaning does not arise. As we grow older, however, custom and habit insidiously and relentlessly seduce us into too quickly assimilating new and fresh experiences into familiar, stereotypical categories of perception.³⁵¹

³⁴⁹ Sideris, *Consecrating Science*, p.14

³⁵⁰ Gregory R. Peterson, *Minding God: Theology and the Cognitive Sciences* (Minneapolis, MN: Fortress Press, 2003), p.183

³⁵¹ Ford, *The Search for Meaning*, p.236

He continues in a manner redolent of Abram:

We are alienated from nature, and find the world meaningless as a consequence, because of a failure of perception. We fall from the innocent grace of childhood whenever we substitute habitual modes of perception for the ecstasy of our sensuous existence.³⁵²

The connection with *The Spell of the Sensuous* is unmistakable, as is George Monbiot's allusion to Narnia when reflecting in his book *Feral* (2014) that rewilding is:

The most bewitching topic I have ever explored...It has wrought deep changes in my own life. At times investigating these issues has felt like stepping through the back of the wardrobe.³⁵³

I suggest that many adults yearn for something similar: amidst the hilarious neologisms of Roald Dahl's *The BFG*, for example, even the most down-to-earth parent might be arrested by the big-eared giant's disclosure to Sophie: "You is hearing only thumping loud noises with those little earwigs of yours. But I am hearing *all the secret whisperings of the world!*"³⁵⁴ It perfectly encapsulates the exhilaration of naturalist imaginaries. Affective RN can intentionally enlist these nostalgic affects without violating scientific scruples.

Where does this leave us in relation to the modernist narratives of disenchantment? Later in *Feral*, Monbiot remarks that 'Palaeoecology – the study of past ecosystems, crucial to an understanding of our own – feels like a portal through which we may pass into an enchanted

³⁵² Ford, *The Search for Meaning*, p.236

³⁵³ Monbiot, *Feral*, p.13

³⁵⁴ Roald Dahl, *The BFG* (London: Puffin Books, 2016), p.29 (emphasis in the original)

kingdom.³⁵⁵ Douglas J. Davies also uses the idea of a portal, taking it in an interesting direction with a connection to the affective circuit that Panksepp calls the SEEKING system:

It is as though the animal drive to investigate new potential habitats has also been extended in a virtual direction...humans not only settle geographical domains but create imaginary worlds and then select certain places as portals from one to the other.³⁵⁶

With work like Monbiot's, or Daniel Chamovitz's examination of botanical senses in *What a Plant Knows* (2012), or Merlin Sheldrake's celebration of the importance of fungi in *Entangled Life* (2020),³⁵⁷ we are very much within Weber's lost 'enchanted garden,' not cast out from it, even if its residents are neither anthropomorphic nor able to offer us cosmic guidance or ultimate salvation.

Abram's concern with the 'unseen' and the 'invisible' is rooted in his central thesis about the damage wrought by alphabetic language. He points to the 'extreme invisibility' represented by 'the utterly incorporeal realm of pure "ideas,"' proposing that:

The experiential interplay between the *seen* and the *unseen* – this duality entirely proper to the sensuous life world – was far more real, for oral peoples – than an abstract dualism between sensuous reality and some other, utterly non-sensuous heaven.³⁵⁸

³⁵⁵ Monbiot, *Feral*, p.93

³⁵⁶ Douglas J. Davies, *Emotion, Identity, and Religion: Hope, Reciprocity, and Otherness* (Oxford: Oxford University Press, 2011), p.245

³⁵⁷ Daniel Chamovitz, *What a Plant Knows: A Field Guide to the Senses of your Garden – and Beyond* (London: OneWorld Publications, 2012);

Merlin Sheldrake, *Entangled Life: How Fungi Make our Worlds, Change our Minds and Shape our Futures* (London: Bodley Head, 2020)

³⁵⁸ Abram, *The Spell of the Sensuous*, pp.253-54 (emphases in the original)

Abram seeks to reorient us towards a less extreme realm of the unseen, namely the interplay between ourselves and the ‘more-than-human world’ which we are liable not to notice. His principal notion here is what he calls ‘participation,’ which he defines as ‘the experience of an active interplay, or coupling, between the perceiving body and that which it perceives,³⁵⁹ and is thus akin to the EC theory of enaction. However, Abram also populates his naturalist imaginary with unseen phenomena in a more literal sense, such as the hidden air and its character. We may know about respiration and photosynthesis in scientific terms, but we tend not to encounter them in ways that invite us to focus on what is happening in the unseen air:

As long as we experience the invisible depths that surround us as empty space, we will be able to deny, or repress, our thorough interdependence with the other animals, the plants, and the living land that sustains us...Only as we begin to notice, once again, our immersion in the invisible air do we start to recall what it is to be fully a part of this world.³⁶⁰

Abram lingers on the example of the reciprocity between ourselves and plants in that unseen air:

What plants are quietly breathing out, we animals are breathing in; what we breathe out, the plants are breathing in. The air, we might say, is the soul of the visible landscape, the secret realm from whence all beings draw their nourishment. As the very mystery of the living present, it is that most intimate absence from whence the presence presences, and thus a key to the forgotten presence of the earth.³⁶¹

³⁵⁹ Abram, *The Spell of the Sensuous*, p.57

³⁶⁰ Abram, *The Spell of the Sensuous*, p.260

³⁶¹ Abram, *The Spell of the Sensuous*, p.226

As mentioned at the outset of the chapter, this perspective is important in light of the fundamental issue of invisibility for economics, as highlighted in *The Dasgupta Review on the Economics of Biodiversity*.

To further contextualise this notion of a science-informed portal I wish to return to Jakob von Uexküll and his distinction, in *A Foray into the Worlds of Animals and Humans*, between the *Umwelt* and the *Umgebung*.³⁶² Recall that, due to their particular sensory capabilities, any organism, including ourselves, has access only to its *Umwelt* but not to the *Umgebung*, which is the entirety of its surroundings. I also referred to Donald Hoffman's related suggestion that our everyday experience is a 'species-specific user interface between ourselves and a realm far more complex.'³⁶³ Scientific instrumentation, in concert with reason, vastly extends our appreciation of the *Umgebung* – of this more complex realm of the unseen. It helps to mitigate, though cannot entirely overcome, the evolved biases of our senses and attention as well as of those of our culturally-steered preoccupations. We may select particular things for attention but can remain aware of the totality, of both the local and the global, exploding an otherwise narrow habitual perspective.

Note that this is not just extending the unseen, but the broader *unsensed*. There may be an evolved human bias – rather than just a Western Enlightenment bias – towards the visual sense, and naturalist imaginaries can help to escape this 'ocularcentrism.'³⁶⁴ As we imagine those aspects of the *Umgebung* that lie beyond our senses – such as when von Uexküll invites us into the *Umwelt* of the tick, or when Peter Godfrey-Smith ushers us into the world of cephalopod evolution and intelligence³⁶⁵ - it does not particularly matter if we cannot do so with any fidelity; we need not

³⁶² Von Uexküll, *A Foray into the Worlds of Animals and Humans*

³⁶³ Hoffman, entry in Brockman (ed.) *What We Believe But Cannot Prove*, p.93

³⁶⁴ See e.g. Manuel Vásquez's discussion of Leigh Schmidt: Manuel Vásquez, *More than Belief: A Materialist Theory of Religion* (Oxford: Oxford University Press, 2011) p.119

³⁶⁵ Peter Godfrey-Smith, *Other Minds: The Octopus and the Evolution of Intelligent Life* (London: William Collins, 2018)

worry about failing Thomas Nagel's famous challenge: 'What Is it Like to be a Bat?'³⁶⁶ The aim is rather that of J. A. Baker:

People who love other creatures are often accused of anthropomorphizing them. This was not true of Baker. Rather than anthropomorphizing other species, Baker tried the experiment of deanthropomorphizing himself. Seeing the world as he imagined hawks might see it, he was able at times to be something other than he had been.³⁶⁷

This same objective, in our context, is the activation of AEC in relation to the more-than-human world and the richer experience that results.

This engagement with naturalist imaginaries, then – this perspectival shift from *Umwelt* to *Umgebung* - is about advancing the quest for a greater 'fullness' of experience described in the previous chapter. Bryan Appleyard, an advocate of the Problem of Alienation, complains that 'compressing the catalogue of the world is one way of expressing the nature of the entire scientific project,' but naturalist imaginaries like that of Abram demonstrate that the same scientific project, understood as the aggregate of its discoveries, massively expands rather than compresses 'the catalogue of the world.' For many, the 'fullness' of a refulgent imaginary is an enticing prospect, even a vital need, as William James himself saw:

Among the buildings-out of religion which the mind spontaneously indulges in, the aesthetic motive must never be forgotten...Although some persons aim most at

³⁶⁶ Thomas Nagel, 'What Is It Like to Be a Bat?' *The Philosophical Review* 83(4), 1974, pp.435-450

³⁶⁷ Discussed in John Gray, *The Silence of Animals: On Progress and Other Modern Myths* (London: Penguin, 2014, p.157). George Levine is more ambitious: 'It is not so much anthropomorphism, then, as zoomorphism: that is, humans are animals, and therefore one can – as an animal oneself – understand non-human behavior simply by imagining one's way into the animal's mind.' (Levine, *Darwin Loves You*, p.197)

intellectual purity and simplification, for others richness is the supreme imaginative requirement.³⁶⁸

And here, my proposal for AEC and RN is the intentional, maximum embodiment of the unseen or unsensed. Recalling that embodied simulation has perceptual, motor, and emotional dimension, to imagine in this expansive mode engages the whole array: it is a fullness within AEC responding to a fullness without - the *Umgebung* – a fullness that may be unseen or unsensed, yet with strong epistemological roots in our current scientific understandings, and able to evolve with them.

Elevating the Material

William James is also helpful for examining a recurring theme in naturalist imaginaries that is invigorated by AEC in just this way. The Problem of Alienation claims that a strict naturalism's confinement to the material – to an ontology ultimately built from matter and forces – is a pallid, sterile or otherwise necessarily inferior proposition to that of the immaterial. One of its key advocates, Huston Smith, claims that science 'is an artificial language that cannot accommodate the human spirit.'³⁶⁹ Its discoveries allegedly amount to an anaemic *Weltanschauung*; naturalism as vampirism.³⁷⁰ Against this claim, the common RN strategy is to *elevate the material*, emphasising that matter is at least marvellous and perhaps agential. For James, who was sceptical of an affective naturalism, a more conventionally religious orientation by contrast can offer 'a zest, or a meaning, or an enchantment and glory to the common objects of life,' and 'a feeling

³⁶⁸ James, *The Varieties of Religious Experience*, p.459

³⁶⁹ Huston Smith, *Why Religion Matters: The Fate of the Human Spirit in an Age of Disbelief* (New York: HarperSanFrancisco, 2001), p.62

³⁷⁰ I am recycling Nietzsche's phrase 'morality as *vampirism*' (Nietzsche, *Ecce Homo*, p.103; emphasis in the original)

that great and wondrous things are in the air.³⁷¹ Reflecting on James's position, Ronald Dworkin writes that 'the enchantment [of religion] is the discovery of transcendental value in what seems otherwise transient and dead.'³⁷² But the enchantment to which they refer need not be something added from an external source; it is not sprinkled over materiality like fairy dust. Arthur Peacocke observed this in his understanding of the 'sacraments of science,' drawing attention to 'the moments when a level of reality became visible to them [scientists] of which they had not been mindful until that moment.' For Peacocke:

Sacramentality is about seeing relationships, not about the discovery of a supernatural agency at work in physical forms. The ordinary is seen as the extraordinary, the extraordinary does not elevate the ordinary.³⁷³

This same possibility is explored by Anthony Simon Laden in his discussion of 'atheism and invisibility,' which celebrates that 'we can make the ordinary world around us light up with its extraordinary qualities.'³⁷⁴

For some, this elevation may seem insufficient if not impossible. For example, when Huston Smith refers to RN texts like Goodenough's *The Sacred Depths of Nature* (1998) as attempts to 'sweeten the sour apple,' his difficulty seems to lie with 'dead matter.'³⁷⁵ He therefore chooses to attribute sentience to everything, beginning with the Big Bang. The argument for panpsychism - that matter is in some way sentient or conscious 'all the way down' - is a complex

³⁷¹ James, *Varieties of Religious Experience*, p.505. Discussed in Todd Macalister, *Looking to Nature: Exploring a Modern Way of being Spiritual without the Supernatural* (Berkeley, CA: Apocryphile Press, 2020), p.42

³⁷² Ronald Dworkin, *Religion Without God* (Cambridge, MA: Harvard University Press, 2013), p.12

³⁷³ Arthur Peacocke, *All That Is: A Naturalistic Faith for the Twenty-First Century* (ed. Philip Clayton) (Minneapolis, MN: Fortress Press, 2007), p.116

³⁷⁴ Anthony Simon Laden, 'Transcendence without God: On Atheism and Individuality,' in Louise M. Antony (ed.), *Philosophers without Gods: Meditations on Atheism and the Secular Life* (Oxford: Oxford University Press, 2007), p.128.

³⁷⁵ Smith, *Why Religion Matters*, pp.32-33, 48.

Smith is responding to Ursula Goodenough, *The Sacred Depths of Nature* (Oxford: Oxford University Press, 1998), and she replies in 'A Setback to the Dialogue: A Response to Huston Smith,' *Zygon* 36(2), 2001, pp.201-206.

one, beyond my scope, where definitions of consciousness and sentience are critical, but recall my commitment to testing a ‘worst case scenario’ for naturalism based on an ungenerous epistemology. I am not alone in proposing that materialism can be scintillating without imputing consciousness or sentience.

If matter does not require sentience to counter the Problem of Alienation, does it need to be set within an emergentist rather than a reductionist account? Chet Raymo argues otherwise:

If twentieth century physics has taught us anything, it is that nature accommodates beautiful form even at the level of the atom. Beauty in nature is not something that shows up only at a certain level of complexity.³⁷⁶

This is not to say that emergentism is not more persuasive than reductionism, and it may well provide greater aesthetic and affective benefits, not least because it encompasses micro-level phenomena like those highlighted by Raymo within its broader framework. I note only that emergentism may not always be necessary to elevate the material. What *is* necessary is only what Loyal Rue described as replacing the ‘grunge’ theory of a matter with a ‘glitz’ theory, though ‘glitz’ is a grotesquely tacky term for what is involved.³⁷⁷

The example of Darwin himself illustrates this point. George Levine writes that the great naturalist:

³⁷⁶ Chet Raymo, *Honey from Stone* (Dingle, County Kerry: Brandon, 1987), p.43

³⁷⁷ Loyal Rue, *Nature is Enough: Religious Naturalism and the Meaning of Life* (Albany, NY: State University of New York Press, 2011), pp.52-53

transferred reverence to the ordinary...With those remarkable powers of observation, he saw the world in a grain of sand, and he saw diversity where those who do not look closely...see only sameness.³⁷⁸

In Darwin's world, 'matter, so often set up in a dichotomy with spirit, comes alive.'³⁷⁹ Indeed, contrary to what the Problem of Alienation would suggest, he is 'the patron saint of a world where matter is in constant motion, constantly transforming, constantly producing variations and surprises, manifesting stunning connections.'³⁸⁰

AEC is just such an example of matter behaving in this way. The workings of perceptual, motor, and emotional simulation, for example, are astounding discoveries that elevate the material, given that they can be understood as ultimately physical processes. In return, of course, the embodied imagination is also engaged in how we cognitively process the 'elevated material' in all its forms. Jane Bennett, in her study of enchantment, argues that "'mere" plants, ants, and ideas turn out to have a degree of complexity and material efficacy that humans have hitherto ignored or underestimated.' Our naturalist imaginaries are expanded because 'new scientific practices and instruments render these capacities sensible to us, and we are both charmed and disturbed by them.'³⁸¹ But the *character* of that complexity and efficacy propels AEC to the fore, because she suggests that 'if things that we had previously considered to be but the passive context for our activity are themselves mobile, vital matter, then the world becomes so much more interesting.'³⁸² In trying to comprehend that mobility and vitality, we engage our perceptual and motor simulation systems. And as I analysed earlier in this chapter, Alexa Weik von Mossner

³⁷⁸ Levine, *Darwin Loves You*, p.271

³⁷⁹ Levine, *Darwin Loves You*, p.43

³⁸⁰ Levine, *Darwin Loves You*, p.43

³⁸¹ Bennett, 2001, p.171

³⁸² Bennett, 2001, p.112. The connection is clear here to *The Dasgupta Review on the Economics of Biodiversity*, where 'natural assets' and not 'the passive context for our activity,' as Bennett puts it, and are in many cases mobile, silent, and invisible.

highlights how particular uses of anthropomorphic language will deepen that engagement: ‘reading that the snow *bends* and *trims*, lightning *strikes*, and avalanches *mow down* the forests will activate the somatosensory and motor cortices in readers’ brains.’³⁸³ Lavishing not just the material, but the *unseen* material, with simulation contributes to a fuller experience and enlivens the idea of a marvellous hidden realm.

I have been arguing that elevating the material within naturalist imaginaries can counter the Problem of Alienation, and will conclude this chapter with two further implications, one ethical and the other pertaining to the relationships between this strategy and broader religious themes. First, I propose, like Bennett, that this orientation has positive ethical consequences, but in ways that augment her thesis that ‘enchanted’ phenomena are likely to prompt greater ethical commitment. The broader aperture represented by the *Umgebung* broadens our comprehension of our ‘interbeing’ with the more-than-human world.³⁸⁴ Its expanse helps us to escape more limited spatial and temporal orientations in order to understand our impact on the environment. In *The Universe Story*, religious naturalists Brian Swimme and Thomas Berry argue that:

Without entrancement...it is unlikely that the human community will have the psychic energy needed for the renewal of the Earth. This entrancement comes from the immediate communion of the human with the natural world, a capacity to appreciate the ultimate subjectivity and spontaneities within every form of natural being.³⁸⁵

³⁸³ Von Mossner, *Affective Ecologies*, p.35 (emphases in the original)

³⁸⁴ I borrow the term ‘interbeing’ from Eisenstein, *Climate*, p.9

³⁸⁵ Swimme and Berry, *The Universe Story*, p.268

Elsewhere, Swimme goes as far as to say that ‘all our disasters today are directly related to our having been raised in cultures that ignored the cosmos for an exclusive focus on the human.’³⁸⁶

The extension to the cosmic scale is notable, not least because it accords with astronauts’ reported ‘overview effect,’ whereby seeing the Earth in its entirety prompted changes in ethical perspective. Naturalist imaginaries involve cultivating our appreciation of the myriad different manifestations of the universe represented by the nonhuman world and its multifarious ways of being and sensing.

Beyond this ethical capacity, naturalist imaginaries may occupy some of the same cognitive-affective territory as some aspects of more traditional religion. Many human beings have an appetite for the magical or fantastical that naturalist imaginaries might satisfy. Arthur C. Clarke’s ‘Third Law’ famously states that ‘any sufficiently advanced technology is indistinguishable from magic,’³⁸⁷ and the same might be said for the various biological technologies of life. This claim is a core theme in Chet Raymo’s book *Honey from Stone* (1987):

There is within the human a compelling appetite for the fabulous, typically sated with monsters, mermaids, chimeras, hippogriffs and an imaginative assortment of gods.

Meanwhile, the real wonders are all about us, burrowing into sand and slipping ribbonlike into cracks, wonders hardly less marvellous than any unicorn.³⁸⁸

Raymo directly compares what he gains from his naturalist imaginary to more conventionally religious ideas: ‘The buzzing business of a single cell is more infused with eternity than any

³⁸⁶ Brian Swimme, ‘A Cosmic Creation Story,’ in James E. Hutchingson, *Religion and the Natural Sciences: The Range of Engagement* (Fort Worth, TX and London: Harcourt Brace Jovanovich College Publishers, 2005), p.111 (emphasis in the original).

³⁸⁷ Arthur C. Clarke, *Profiles of the Future: An Inquiry into the Limits of the Possible* (London: Victor Gollancz, 1962)

³⁸⁸ Raymo, *Honey from Stone*, p.125

disembodied soul.³⁸⁹ He is an avid collector of what he calls nature's 'cryptophenomena,' namely 'aspects of the *ordinary* and *presently real* that hide in their very delicacy – very young moons, certain ephemeral kinds of frost and the zodiacal light are examples.'³⁹⁰ Anthony Simon Laden picks up this theme when he argues that:

God is not the only 'invisible' entity in our universe that is worthy of our attention. There are lots more who are closer to hand...the attempt to see such invisible entities can also give the same kind of meaning and value to our life that the fervent believer gets from her religious devotion.³⁹¹

Laden suggests that Aristotle, who proposed that philosophy begins with wonder, might concur with his characterisation of philosophy as 'the practice of seeing the hitherto invisible.'³⁹²

While they may satisfy a quasi-religious desire for the marvellous or magical, can naturalist imaginaries amount to more than this: something worthy of the term 'transcendent'? Laden thinks so. He reports that:

Training myself to pay attention to aspects of what I see that have been invisible...yields the transcendent experience insofar as engaging in it pulls me out of and beyond my ordinary experience...If there are non-transcendent objects that are both invisible and worthy of my attention, then this transcendent experience need not be an experience of transcendent objects.³⁹³

³⁸⁹ Raymo, *Honey from Stone*, p.74

³⁹⁰ Raymo, *Honey from Stone*, pp.115-16 (emphases in the original)

³⁹¹ Laden, 'Transcendence without God,' p.127

³⁹² Laden, 'Transcendence without God,' p.127

³⁹³ Laden, 'Transcendence without God,' pp.126-27

This accords with the claim that *all* diverse frameworks by which humans derive meaning – from traditional religion to science to archetypal psychology to Platonic forms and beyond - share a belief in a realm beyond that of everyday appearances that is in some way more real and more significant.³⁹⁴ Naturalists do not necessarily conceive of the unseen or unsensed as more significant, but the *Umgebung* nevertheless offers experiences beyond the ordinary and which are thus ‘transcendent’ in this more limited sense.

Within RN circles this has been discussed in terms of what Michael Kalton calls ‘horizontal transcendence.’³⁹⁵ Many religions, including the great monotheisms, tend to place more emphasis on a vertical transcendence, featuring a Great Chain of Being with an orientation towards, and desire for connection with or even absorption into, the ‘higher’ echelons. Naturalists may seek some version of vertical transcendence through the notion of emergence, but another strategy is to transcend ‘horizontally’ through greater connection with, and even absorption into, some greater ecospherical or indeed geospherical whole (it is a move sideways rather than down since nonhuman entities are not necessarily regarded as ultimately ‘lower’). Simulation supports horizontal transcendence by softening the subject-object distinction and also means, as I suggested above, that the naturalist interest in what Ward calls ‘transcorporeality’ is reflected in the processes of simulation.

‘Horizontal’ is, however, too limited for what naturalist imaginaries involve. They are not just about how we conceive of our relationship to the nonhuman as separate entities, but about greater embodiment, through the processes of AEC, of all that surrounds us. Chris Jordan’s

³⁹⁴ See e.g. Ford, *The Search for Meaning*

³⁹⁵ Michael C. Kalton, ‘Green Spirituality: Horizontal Transcendence,’ in Melvin E. Miller and Polly Young-Eisendrath (eds.), *The Psychology of Mature Spirituality: Integrity, Wisdom, Transcendence* (London and Philadelphia: Routledge, 2000), pp.148-58
Discussed by Ursula Goodenough in ‘Vertical and Horizontal Transcendence,’ *Zygon* 36(1), 2001, pp.21-31

notion of a ‘trans-scalar imaginary’³⁹⁶ is useful for the kind of multi-dimensional, multi-sensory, and beyond-sensory awareness to which I refer. It is worth noting in this context that the metaphor of *cyberspace* - something infinite and multi-dimensional – quickly replaced the linear *information superhighway*:

It was the choice between being Captain Kirk zapping around in outer space on board the *Starship Enterprise* or Alan Partridge pulling into the middle lane as he takes his Rover 800 up the A10.³⁹⁷

Multi-dimensionality is also more consonant with what I discussed in Abram’s context about enhancing horizontal relationships in ways that do not discard the inherent embodied affectivity of the vertical.

In terms of religious experience, an awareness of naturalist imaginaries is a mode of attention more than a series of unplanned breakthrough incidents. The imaginaries of Abram or Monbiot, for instance, are relatively settled dispositions. There is, of course, a role for what Bennett calls ‘the marvelous erupting amid the everyday,’³⁹⁸ but those moments punctuate a more enduring orientation towards the marvellous. Hence, while it would be tempting to use Mircea Eliade’s notion of hierophany here, that word describes occasions involving the manifestation of the sacred, a ‘reality that does not belong to our world, in objects that are an integral part of our natural “profane” world.’³⁹⁹ Naturalist imaginaries are not occasions, and what they conjure very much belongs to our world. A more apt connection with traditional

³⁹⁶ ‘Introspection, Social Transformation, and the Trans-Scalar Imaginary: An Interview with Chris Jordan,’ in Scott Slovic and Paul Slovic (eds.), *Numbers and Nerves: Information, Emotion, and Meaning in a World of Data* (Corvallis, OR: Oregon State University Press, 2015), pp.200-216

³⁹⁷ Simon Lancaster, *You Are Not Human: How Words Kill* (London: Biteback Publishing, 2017), pp.274-75

³⁹⁸ Bennett, *The Enchantment of Modern Life*, p.8

³⁹⁹ Mircea Eliade, *The Sacred and the Profane: The Nature of Religion* (Orlando, FL: Harcourt, 1987), p.11

religious themes is that of reciprocity with the imaginary, as exemplified by Abram's notion of 'participation.' I have been highlighting William James's reference to 'vital conversation with the unseen divine,' and only the word 'divine' might be contentious in the naturalist context. Richard Holloway alludes to something similar when he refers to 'the mystery of latency I encountered in the hills above the Vale, the sense of something just out of reach, something unseen *that listens!*'⁴⁰⁰ The processes of interactivity and, often, agency to which Abram and others draw attention – processes that scientific discovery have increasingly been illuminating – mean that words like conversation and listening are more apt than many assume.

I wish to pre-empt some potential critiques of the position I have outlined. The first is that it may appear too animistic. In his account of animism, Graham Harvey confesses that his fear of seeming overly animistic may have reinforced his 'under-privileging of the unseen – despite David Abram's encouragement.'⁴⁰¹ But setting aside the question of whether animism is to be eschewed, the characterisation only works if the elevation of the material as discovered by scientific research amounts to animism, or the workings of the imagination as understood in AEC amount to animism, neither or which is a reasonable position.

Second, one might try to dismiss imaginaries as escapism from an unbearable reality. This might be true if they fail to acknowledge the more malign phenomena of the unseen and unsensed, from noxious odours to lethal pathogens. More generally, though, the escapism charge is not valid since imaginaries are simply the world as understood through mainstream science but beyond the reach of our unaided senses. Indeed, they are the very opposite of escapism insofar as they expand our awareness of all that we know to exist: they are, one might say, a combination

⁴⁰⁰ Holloway, *Leaving Alexandria*, p.61 (emphasis in the original)

⁴⁰¹ Graham Harvey, *Animism: Respecting the Living World*. 2nd edition (London: Hurst, 2017), p.225

of simulated subjectivities. There is therefore no easy comparison to imaginaries involving deities and angels, or fauns and elves, or ley lines and vague energies.

Third, one might argue that imaginaries regard what is beyond human senses as inherently more important. I hope not to have made that claim, but instead raised their value for broadening our perspective, providing a source of wonder, and fostering more ethical judgements about how we should relate to the more than human world.

Conclusion

I began this chapter with William James's reference to 'those phenomena of vital conversation with the unseen divine,' and I have explored how Abram and other religious naturalists seek to bring into the light something concealed – something which for them possesses an experiential significance they might describe, in a non-literal sense, as 'divine.' One can imagine the unseen, and also the unheard and whatever else is beyond the unaided senses but known from science. And thus, because the imagination is embodied, one feels those things - one feels the unseen and the wider unsensed – even if one's own affects bear little comparison to the subjective experience of other beings.

I hope I have demonstrated, then, the deficiency of the Problem of Alienation when its proponents claim that a universe lacking entities beyond matter and energy is irretrievably cold and colourless, detached, and unresponsive. I believe I have also shown the role that AEC can play in countering it. However, I have yet to address that other pillar of the Problem of Alienation, namely that explanation itself dents affect. It is to that question that I now turn.

CHAPTER 4

Countering Alienation (II): The Coexistence of Explanation and Wonder

The kind of attention we pay actually alters the world: we are, literally, partners in creation. This means we have a grave responsibility, a word that captures the reciprocal nature of the dialogue we have with whatever it is that exists apart from ourselves.

– Ian McGilchrist⁴⁰²

The Problem of Alienation for an affectively resonant RN has two parts: the supposedly detached and abstract character of naturalist cosmology, and the allegedly destructive force of scientific explanation. In the last chapter I argued that understanding and harnessing AEC can help to alleviate the former, including by forging *naturalist imaginaries* that nurture a deeper communion with William James’s ‘unseen divine,’ naturalistically understood. However, even if it is accepted that naturalism can sparkle in this way, does this kind of reflection not spoil the precious affects that arise from direct unadulterated experience? In this chapter I will show why explanation can co-exist with that significant category of affects called wonder. The idea of such a compatibility can seem counter-intuitive, but it is experienced in practice by religious naturalists and others. I will demonstrate, with reference to the work of Iain McGilchrist, why appreciating how we *toggle* between different forms of embodied *attention* solves the conundrum. I will set this within the context of current debates relating to wonder and explanation in RN, focusing in particular on Lisa Sideris’s critique of several prominent religious naturalists.

An anecdote will set the stage. I once attended a wedding where the groom, towards the end of his speech, said that there was something irresistibly mysterious about his bride. It was a force that he did not understand; but more than that, it was a force that he did not really *want* to

⁴⁰² McGilchrist, *The Master and his Emissary*, p.5

understand. The implication was that understanding would threaten its affect. As I sat listening, I was fairly sure that this fear was misplaced. I was almost certain that even a meticulous scientific explanation for his spouse's cryptic magnetism would have made no difference whatsoever to his sentiments. In my own experience, at least, the detailed explanations offered for various phenomena fail to dim their affective glow. This is not just the case for the emotion we call wonder, but for a broader range of affects. If I am right – that understanding something does not undermine affect for a significant portion of people – why does it seem intuitive to those subscribing to the Problem of Alienation that it should? How can these attitudes co-exist in the mind without disrupting one another? I will begin to answer this by sketching the debate between those for and against the notion that explanation destroys affect.

Affect meets Explanation

Recall how the Romantics in particular cared deeply for wonder. Johann Heinrich Merck believed rationalism had reduced religion to a lifeless phenomenon;⁴⁰³ Goethe claimed 'ratiocination drives poetry away';⁴⁰⁴ and John Keats lamented the kind of philosophy that would 'unweave a rainbow,'⁴⁰⁵ the crime for which Newton had been guilty by revealing the properties of light. Similar attitudes continue to be voiced: Bryan Appleyard claims that scientific details can be damaging when they reductively 'explain away' positive or negative emotions,⁴⁰⁶ while Mark Vernon writes that 'a Darwinist "explanation" that the wing and the song are sexually selected implicitly dismisses the wonder,'⁴⁰⁷ apparently perceiving a zero sum game with wonder taking up where scientific explanation ends.

⁴⁰³ Quoted in Roy Pascal, *The German Sturm und Drang* (Manchester: Manchester University Press, 1953), p.88

⁴⁰⁴ Quoted in A. N. Wilson, *God's Funeral* (London: John Murray, 1999), p.17

⁴⁰⁵ Keats, *Lamia*, Pt II, from *Poems* (1820)

⁴⁰⁶ Appleyard, *Understanding the Present*, pp.168-69, 231-32

⁴⁰⁷ Mark Vernon, *After Atheism: Science, Religion, and the Meaning of Life* (Basingstoke: Palgrave MacMillan, 2007), p.75

Religious naturalists themselves can be influenced by this view, even if they ultimately reject it. Chet Raymo is a case in point. There is a famous saying that ‘the more we learn, the less we know,’ since understanding some aspect of something tends to prompt a number of further questions. In Raymo’s metaphor for this proliferation:

Knowledge is an island. The larger we make that island, the longer becomes the shore where knowledge is lapped by mystery. It is the most common of all misconceptions about science that it is somehow inimical to mystery, that it grows at the expense of God. Aristarchus and Galileo felt the harsh consequences of that misconception. But in a world described by science, mystery abides in the space between the stars and the interstices of snow. The extension of knowledge is the extension of mystery.⁴⁰⁸

This is something in which Raymo exults:

Nowhere a bottom! I have studied science. For forty years I have explored every recess of what science has learned about the world we inhabit, probed every corner of natural philosophy, gone down every rabbit hole. There is no bottom. Every apparent bottom is false.⁴⁰⁹

But this is not the whole story. Many religious naturalists reject the suggestion that the desirable affect offered by an entity is proportionate to the extent to which it withholds its mysteries, and that – should we exhaust the possibilities for understanding it – we would automatically cancel out all the original affect. Instead, desirable affect also resides in the territory where detailed explanations are available. It is this that we need to understand.

⁴⁰⁸ Raymo, *Honey from Stone*, p.52

⁴⁰⁹ Raymo, *Honey from Stone*, p.147

A consequence of the attitude that explanation undermines positive affect is to fear scientific enquiry, to disparage explanation or explainers, or otherwise to seek to protect the treasured emotional qualities perceived to be at risk. This may be a response to particular forms of scientific communication, especially to abstract or dreary styles, which may include mechanically naive explanations for complex phenomena.⁴¹⁰ Another upshot of this stance is the attempt to mitigate the imagined damage of explanation by proposing alternative, more ‘interesting’ accounts. Astrology, the misuse of terms such as ‘energy’ and ‘vibrations’, the selective appropriation of quantum theory – these may be motivated in part by the belief that mainstream scientific explanations are insipid. It was such dubious accounts that led Richard Dawkins to suggest a critical distinction between ‘good poetry’ and ‘bad poetry’: while the former involves a close resemblance between the metaphor or image and its corresponding scientific phenomenon or principle, so that the poetic yield can be enjoyed without impeding understanding, the latter stumbles over the association, distorting findings or failing to comprehend them in the first place.⁴¹¹ But the key point here is that the *content* of any explanation is not what makes it compatible with affect.

One dimension of content is the level of emergence conveyed by the explanation.

William James was right to remark that:

A Beethoven string-quartet is truly, as some one has said, a scraping of horses’ tails on cats’ bowels, and may be exhaustively described in such terms; but the application of this

⁴¹⁰ There is a fine illustration in the film *Dead Poets’ Society*. The English teacher, played by Robin Williams, instructs his obedient pupils to read a passage in a book by an author proffering a simple mathematical equation for understanding poetry, before telling them to tear out the pages: “I want to hear nothing but ripping of Mr Pritchard!”

⁴¹¹ Richard Dawkins, *Unweaving the Rainbow: Science, Delusion and the Appetite for Wonder* (London: Penguin, 1999), pp.180-209

description in no way precludes the simultaneous applicability of an entirely different description.⁴¹²

James clearly had in mind a description of the quartet at a more emergent – indeed more common – level. But positive affect does not correlate with more emergent explanations in a neat linear manner.

Indeed, it can sometimes seem as though explanation and affect have no relationship whatsoever. The neuroscientist David Eagleman observes that:

Being let into the secrets behind the scenes has little effect on our experience...Knowing the code behind the wine does not diminish its pleasure on your tongue... Glimpsing the mechanics of love does not alter its intoxicating appeal.⁴¹³

In a similar vein, the biologist and religious naturalist Ursula Goodenough notes that understanding how a sonata or symphony is constructed does not undermine its impact. She calls this observation the Mozart Metaphor, remarking that such an understanding is, ‘indeed, the only way to have a full understanding of what the sonata entails and what Mozart had in his mind.’⁴¹⁴ Her book *The Sacred Depths of Nature* is essentially a defence of this particular take on reductionism, which she extends into gene expression and much else.

My own experience corroborates Goodenough’s claim. As a teenager, a certain frenzied passage in Mozart’s *Fantasia in C Minor* threatened to scupper my bid for Grade 8 Piano. The challenge was essentially about notes depicted in black ink on white paper and their instruction

⁴¹² James, *The Will to Believe*, p.76

⁴¹³ David Eagleman, *Sum: Tales from the Afterlives* (Edinburgh: Canongate, 2009), p.103

⁴¹⁴ Goodenough, *The Sacred Depths of Nature*, p.34

to hit the right keys in the right order and at the right time with the right pressure. This achieved, passing the examination relied on little hammers hitting strings and on the frequencies, amplitudes and harmonics of the ensuing sound waves suitably massaging the hairs inside the invigilator's highly evolved and diligently trained ear-holes. Yet such an understanding, even coupled with performance anxiety, failed to reduce affect: I was aware of participating in a creation against which the descriptive capacity of words would always founder.

With Goodenough, there is a more ambitious proposition: it is not just that explanation does not undermine positive affect, but can enhance it: 'We can develop a deep understanding of, *and admiration for*, the notes and the strings and the keys of life.'⁴¹⁵ This position is typical of RN, and Goodenough's sentiment is echoed by the many scientists who have offered versions of the Mozart Metaphor. It is worth illustrating and elaborating this point with reference to the testimony of three famous scientists – a physicist, a neuroscientist and an evolutionary biologist – on the compatibility of explanation and wonder. These are Richard Feynman, Antonio Damasio, and Richard Dawkins.

In a 1981 interview, Feynman refers to an artistic friend who suggested that, as a scientist, his appreciation of a flower must be inferior. Feynman responded that he too sees the immediate beauty; but he sees a lot more besides. After all, beauty is not confined to the visible flower, at its species-specific scale of human vision. Feynman sees the beauty of the inner structure, including the actions within each cell. He is then able to reflect on the various processes sustaining life, which have their own more abstract beauty (in this regard we might mention, though he did not, that light streaming from our star comprises a spectrum, that the particular pigment in the petals reflects part of that spectrum onto the retina, and that the brain

⁴¹⁵ Goodenough, *The Sacred Depths of Nature*, p.46 (my emphasis)

construes the shade as red). And this prompts a range of further questions that intensify the ‘excitement, the mystery and the awe,’ not least whether the evolution of the colour to attract pollinating insects suggests that the latter, like us, have what might be described as an aesthetic sense. Crucially, all this understanding does not subtract; in fact, says Feynman, ‘it only adds.’⁴¹⁶ Abstract and purportedly alienating scientific explanations can be a source of wonder that augment rather than undermine their referents.

Antonio Damasio attests to something similar:

To discover that a particular feeling depends on activity in a number of specific brain systems interacting with a number of body organs does not diminish the status of that feeling as a human phenomenon. Neither anguish nor the elation that love or art can bring about are devalued by understanding some of the myriad biological processes that make them what they are. Precisely the opposite should be true: Our sense of wonder should increase before the intricate mechanisms that make such magic possible.⁴¹⁷

This is precisely Feynman’s ‘it only adds’ in the context of affective neuroscience.

Likewise, but at greater length, Dawkins tackled Keats’ complaint head on in *Unweaving the Rainbow*. It is an extended argument for scientific wonder that concludes with a hope that poets and scientists will recognise the treasures offered by the other, so that ‘a Keats and a Newton, listening to each other, might hear the galaxies sing.’⁴¹⁸ Dawkins is frequently accused

⁴¹⁶ Feynman interview at <https://www.youtube.com/watch?v=ZbFM3rn4ldo> (retrieved 24 March 2021).

Similarly, Dennis Ford suggests: ‘The more we know and perceive, the more we apprehend and appreciate the countless miracles and improbabilities surrounding us. The biologist walking in the forest experiences a richer, more complex and wondrous place than I do...Ignorance is impoverishing...Naturalism points to freshness of perception and thought, but not necessarily to unmediated or naïve experience.’ *The Search for Meaning*, p.240

⁴¹⁷ Damasio, *Descartes’ Error*, p.xvi

⁴¹⁸ Dawkins, *Unweaving the Rainbow*, p.313

of misrepresenting religion, but the charge that he propounds an empty and colourless worldview is a greater act of distortion.

While these scientists testify that explanatory detail can generate positive affect, grasping something scientifically does not, of course, eliminate pain or negative affect. Understanding a flower does not destroy its beauty, but nor, sadly, does glimpsing the mechanics of pain take it away. However, being able to summon potential explanations for painful or difficult phenomena, or, more directly, for the very existence of negative emotions and sensations, can be at least therapeutic, not to mention the medical interventions which detailed understanding can enable.⁴¹⁹

It is quite possible that there is significant variation in how individuals experience the explanation-affect relationship. However, I suspect that many who believe – or assume – an incompatibility do so because that seems intuitive, or because they have been influenced by arguments that assert it, rather than because they have introspected carefully on their actual experience. The belief may be encouraged by explanation and affect being associated, respectively, with other pairings often deemed fundamentally irreconcilable, such as detachment and emotion, or objectivity and subjectivity.⁴²⁰ To believe otherwise requires a ‘leap of faith’, especially for those fearful of explanation: it is a matter of trying and seeing rather than being persuaded by argument. My suspicion is that the vast majority of those who do make such a leap will tend to report that explanation has no impact, or indeed bestows a Feynman-style addition. My own experience, and that of the scientists I have cited, reveals that it is entirely possible to enjoy both the phenomenological experience and the scientific comprehension of a particular

⁴¹⁹ It is worth noting Arthur Schopenhauer in this context, who, in spite of his Stygian temperament, recognised that the person with understanding, ‘in the course of his own life and in its misfortunes...will look less at his own individual lot than at the lot of mankind as a whole, and accordingly will conduct himself...more as a knower than as a sufferer.’ Arthur Schopenhauer, *The World as Will and Representation, Vol. I* (tr. E. Payne) (New York: Dover Publications, 1966), p.206.

⁴²⁰ George Lakoff and Mark Johnson discuss the contrast between the ‘myths of objectivity and subjectivity’ in their book *Metaphors We Live By*, p.189

entity without them preying on one another. Yet there is not, to my knowledge, any real insight into *why* this dual appreciation is feasible. Having outlined the character of this conundrum, I will now turn to how it has been elaborated in recent academic discussions.

Lisa Sideris: Serial and Compatibilist Wonder

To bring the dispute up to date I wish to devote substantial space to Lisa Sideris's book *Consecrating Science: Wonder, Knowledge, and the Natural World* (2017) and the reactions to it. Sideris offers the most thorough and sophisticated recent version of the explanation-affect aspect of the Problem of Alienation. She does so in the course of a brilliant analysis of some of the difficulties faced by modern RN. I will summarise her argument before suggesting where I believe she falls short, and use this as a springboard to my proposed AEC-based solution to the explanation-affect enigma.

Sideris argues that the 'new cosmologists,' a category that includes many leading voices in RN, have 'consecrated' science through 'practices and rhetoric that invest science with sacred meaning and purpose, sometimes to the point of conflating science and religion, or making science *into* a religion.'⁴²¹ She suggests that this is accompanied by a 'distorted, deracinated' form of wonder 'tinged with celebrations or hubris, or interwoven with triumphalist claims of progress, certainty, or mastery (over nature, or over others, or even over ourselves).'⁴²² In particular, she is worried about a kind of wonder that became, during the Enlightenment, 'synonymous with a response to knowledge obtained through scientific investigation.'⁴²³ This

⁴²¹ Sideris, *Consecrating Science*, p.7 (emphasis in the original)

⁴²² Sideris, *Consecrating Science*, pp.3, 16

⁴²³ Sideris, *Consecrating Science*, p.20

‘serial’ form of wonder emerges as ‘the *result* of inquiry, a response to *knowledge obtained* rather than to the puzzling, awesome, or mysterious phenomenon itself.’⁴²⁴

Sideris contrasts this with a more immediate, nature-engaged ‘compatibilist’ wonder that characterises writers like Rachel Carson and Loren Eiseley (and, on several occasions, she cites David Abram).⁴²⁵ This form of wonder ‘often engages us at the level of the *senses*.’⁴²⁶ It cannot be reduced to the matter of causes, because ‘the explanation is not the experience... Wonder arises in part from an inability to assimilate what we apprehend: yet failure at assimilation is not a failure of *knowledge*.’⁴²⁷ Unlike the serial wonder of the new cosmologists, compatibilist wonder is ‘strongly shaped by a sense of humility regarding the proper limits of human knowledge and power.’⁴²⁸ Sideris’s argument is therefore simultaneously aesthetic, epistemological, and ethical: compatibilist wonder is seen to be affectively attractive, because of its grounding in the senses rather than detached reason; it allows for a healthy open-mindedness to how scientific understandings are contested and may evolve; and it is more likely to engender constructive ecological relationships because it arises from intimate experience with the nonhuman world.

Sideris highlights the risk of choosing from specific and contested pieces of science. The new cosmologists, she claims, are insufficiently cognisant of the range and variety of scientific knowledge.⁴²⁹ This allegedly frustrates RN on a number of scales: evolutionary biologists, for example, disagree about details such as the unit of selection or gene-environment interactions, while the different sciences present unique, perhaps incommensurable, perspectives. This allows for various interpretations of what all this might mean.⁴³⁰ By contrast, ‘a spiritual orientation

⁴²⁴ Sideris, *Consecrating Science*, pp.23-24 (emphases in the original)

⁴²⁵ Sideris, *Consecrating Science*, pp.169, 183, 194-96, 201 (mentions of David Abram)

⁴²⁶ Sideris, *Consecrating Science*, p.173 (emphasis in the original)

⁴²⁷ Sideris, *Consecrating Science*, pp.173-74 (emphasis in the original)

⁴²⁸ Sideris, *Consecrating Science*, p.25

⁴²⁹ Sideris, *Consecrating Science*, p.7

⁴³⁰ Sideris, *Consecrating Science*, pp.158-59, 193

grounded in experiences of nature, rather than expert knowledge *about* it, is far less likely to be a casualty of changing times and shifting evidence.⁴³¹

One of her strongest arguments concerns the anthropocentrism pervading some of the new cosmologists' projects. These share, she says, the tendency of much Anthropocene literature to exaggerate the extent to which *Homo sapiens* reshapes the Earth, and, more problematically, seem rather upbeat about the idea of humanity's ascendancy, lacking the necessary counterweight of grief:

The generally anthropic modes of wonder underwritten by mythopoeic science are well positioned to *applaud* the ascent of the human in the Anthropocene age, and rather powerless to critique planetary dominance.⁴³²

In elevating humans, the new cosmologists purportedly downplay the complexity and agency of matter (as I discussed in the last chapter), while homogenising people into an undifferentiated species such that they obscure the choices of specific groups and the various disparities that result.⁴³³

Sideris dismantles, at some length, the teleology in their mythmaking, particularly the way that Thomas Berry and some other key RN figures draw on Teilhard du Chardin.⁴³⁴ She also targets the linearity and finality of these narratives, which 'forecloses surprise and novelty,' and 'weakens the wondering perception that we dwell, with awe, fear, delight, sorrow, and

⁴³¹ Sideris, *Consecrating Science*, p.161 (emphasis in the original)

⁴³² Sideris, *Consecrating Science*, p.9 (emphasis in the original)

⁴³³ Sideris, *Consecrating Science*, pp.136, 140-41

⁴³⁴ Sideris, *Consecrating Science*, pp.116-45

ambiguity.⁴³⁵ Coupled with ‘triumphalist science,’ these projects allegedly endanger – rather than enhance – the cause of environmentalism.⁴³⁶

Consecrating Science is a significant achievement that has enabled more mature conversations about wonder and the challenges of mythopoeic RN, but it is not without its faults. For example, Sideris does not provide an explicit definition of her own epistemological position. She states that her critique ‘is aimed not at science per se, but at scientism,’ and refers disparagingly to ‘the superior mythology of scientific materialism,’⁴³⁷ but does not clarify, with precision, her own stance. There are, though, some signs of what it may be, such as where she suggests that the ‘universe story’ told by the new cosmology is ‘neither true (in the strict and narrow sense often claimed), nor obviously superior (in terms of its aesthetics or ethics) to stories and value frameworks it aims to supplant.’⁴³⁸ She is right that the aesthetic and ethical cases are debatable, but her qualification ‘in the strict and narrow sense often claimed’ is not sufficient. If she means the story in its teleological, linear form, her critique is valid, but her general thrust throughout the book seems a little too sceptical about the epistemological status of science.

I have commended Sideris for observing that RN must choose from among a vast body of dynamic, contested, and sometimes incommensurable scientific information. Any mythopoeic enterprise based on scientific discovery has what might, in the framing of this thesis, be called a Problem of Doubt, given that aspects of its cosmology are liable to revision. Doubt arguably exacerbates both the Problem of Alienation and that of Demotivation. However, Sideris should concede that there is a gradation in certainty. For example, the details of evolution are debated,

⁴³⁵ Sideris, *Consecrating Science*, p.28

⁴³⁶ Sideris, *Consecrating Science*, p.51

⁴³⁷ Sideris, *Consecrating Science*, pp.7, 53 (emphasis in the original)

⁴³⁸ Sideris, *Consecrating Science*, p.168

but evolution itself is not, and while some key aspects like the unit of selection continue to be disputed, there is virtually no dissent around the existence of processes like natural selection and sexual selection as important ways in which evolution has occurred. These confidence levels means that, while the epistemological foundation for naturalist mythopoeisis is, indeed, forever unstable, there is a more solid platform than is granted by Sideris.

On another occasion she describes Jonathan Gottschall as ‘a literary critic known for putting readers in MRI machines and swabbing their saliva for hormone analysis.’⁴³⁹ Her tone might be read to suggest that, alongside other modes of literary criticism, nothing useful might be learned from investigating the relationship between reading and hormone production. This seems rooted in squeamish fears of reductionism; such analysis is potentially valuable when exercised in concert with the necessary theoretical maturity and breadth offered by the humanities.

The closest she comes to an explicit epistemological commitment is probably in the context of her response to reviews of her book in the journal *Zygon*. In praising the positive assessment of Courtney O’Dell Chaib, Sideris claims that:

These narratives do not, in fact, tell everyone’s story. That their image of the human cannot stand in for all people and all experiences. That the knowledge on which *Journey* [Brian Swimme and Mary Evelyn Tucker’s book *Journey of the Universe*] stands is not timeless truth but is, like all knowledge, culturally produced and constrained.⁴⁴⁰

⁴³⁹ Sideris, *Consecrating Science*, p.64

⁴⁴⁰ Lisa H. Sideris, ‘Wonder Sustained: A Reply to Critics,’ *Zygon* 54(2), 2009, p.441, referring to Brian Swimme and Mary Evelyn Tucker, *Journey of the Universe* (New Haven, CT and London: Yale University Press, 2011)

Here she slides from O'Dell Chaib's valid point that many people exist in conditions and environments that are less than ideal for embracing the narratives of the new cosmologists, to a more general rejection of the idea of 'everybody's story.' Science-based mythopoiesis involves choices in content and how that is communicated, and this invites various distortions, but in what way is our common ancestry not everybody's story? In what sense is the interaction of genetic and environmental influences, say, not everybody's story? In what way, for that matter, are aspects of AEC like somatic markers, image schemas, and embodied simulation not everybody's story? It appears here that Sideris has slipped into a relativism that fails to take these human universals seriously. And the upshot of her apparent epistemological position is that, unlike the albeit blemished attempts of new cosmologists, she fails to grapple with the real problem of orienting ourselves spiritually in a universe where science, however flawed in theory and practice, cannot simply be regarded as one of many epistemic equals.

Sideris is wary of the new cosmologists' commitment to educational reform, particularly where inspired by Edward O. Wilson's notion of 'consilience.'⁴⁴¹ In line with her preference for compatibilist wonder, she dislikes this thrust towards a single story, citing a phrase commonly attributed to Oliver Wendell Holmes: 'The mind, once expanded to the larger dimensions of new ideas, never returns to its original size.'⁴⁴² However, a plurality of stories is not the only path to mind expansion: as I suggested in my discussion of naturalist imaginaries, what science has exposed about what we cannot detect with our unaided senses, and much of the workings of what we *can* detect, is likewise mind-expanding. There is also, I venture, a case for some rebalancing towards scientific thinking – though not necessarily consilience – in some parts of the academy, given the dominance that anti-foundationalism has enjoyed. When Sideris notes that critics 'characterize consilience as harboring a colonizing agenda,'⁴⁴³ or cites Travis Landry's

⁴⁴¹ Sideris, *Consecrating Science*, pp.12, 59-63

⁴⁴² Sideris, *Consecrating Science*, p.26

⁴⁴³ Sideris, *Consecrating Science*, p.62

allegation of an ‘often pedantic tone and the unmistakable, unapologetic imbalance of power, evident each time it boils down to which side holds the knowledge key,⁴⁴⁴ this is exactly how many have felt about some reforming ant-foundationalist zealots. So when Sideris advocates a “two-way street” between science and the humanities,⁴⁴⁵ there is a debate over where the right balance lies. Finally, Sideris upbraids Michael Dowd and Connie Barlow, whose ‘educational mission extends more broadly to include children as a key target audience,⁴⁴⁶ but does not contextualise this in the broader setting of traditional religion - or special interest groups - behaving similarly but with more dubious content and much greater resources.

This failure to recognise the relatively benign position of new cosmologists in the greater scheme of things is also evident in her argument that their narratives are unlikely to spur ethical behaviour. She points to immersive child experiences in nature as important for adult environmental conscience,⁴⁴⁷ but scientific understandings can also lead to better ethical responses. Killing insects needlessly, for example, may be more difficult where one has reflected on the evolutionary journey they have made before today, or appreciates details of their intricate workings, neither of which is apparent through ordinary observation. Sideris disputes Ursula Goodenough’s claim that understanding evolution leads to ethically sound behaviour,⁴⁴⁸ and she is right that the relationship is not simple, but the fact that we are related to nonhumans is more likely to lead to ethical introspection than us having no relation, or regarding all else as vermin. Sideris’s case that the new cosmologists have an ‘impulse to unlock mysteries and solve puzzles [that] occurs in the *absence* of an ethical framework that demands critical reflection on our scientific objectives⁴⁴⁹ seems not to give her targets their ethical due. In a broader social,

⁴⁴⁴ Travis Landry, ‘The Taming of the Literary Animal,’ *Evolutionary Psychology* 4, 2006, pp.49-56. Quoted in Sideris, *Consecrating Science*, p.65.

⁴⁴⁵ Sideris, *Consecrating Science*, p.65

⁴⁴⁶ Sideris, *Consecrating Science*, p.148

⁴⁴⁷ Sideris, *Consecrating Science*, p.17

⁴⁴⁸ Sideris, *Consecrating Science*, p.107

⁴⁴⁹ Sideris, *Consecrating Science*, p.171 (emphasis in the original)

economic, and political context replete with genuine ecological villains, religious naturalists hardly seem like priorities for ethical criticism.

As Sarah Fredericks argues, Sideris would ideally have tested her ethical claim empirically. Fredericks attempts this through the albeit imperfect source of online reviews of new cosmologists' publications, and finds that 'responses to the new cosmologies are varied, complicated, and may depart significantly from the main message of the text.'⁴⁵⁰ However, even without that empirical evidence, Donovan Schaefer queries 'whether the typology of wonder Sideris offers can be seen as intersecting straightforwardly with the ethical and political consequences she warns us about.'⁴⁵¹ His chief concern is that 'the relationship between emotion and politics is complicated and must be studied carefully,' and that compatibilist wonder may, like serial wonder, carry risks.⁴⁵² In any case, it is not clear that types of wonder and ethics are easily correlated.⁴⁵³

My final criticism of *Consecrating Science* is that, despite her commitment to honouring cultural differences, Sideris does not sufficiently allow for individual variations in character. She does, at one juncture, mention 'the vagaries of individual temperament'⁴⁵⁴ but is unduly dogmatic that:

We cannot have, and should not seek, a grand narrative emanating from 'nowhere, from space, or from the species.' The universe is not the scale on which we can meaningfully connect and interact with our worlds.⁴⁵⁵

⁴⁵⁰ Sarah E. Fredericks, 'Reacting to Consecrating Science: What Might Amateurs Do?' *Zygon* 54(2), 2019, p.371

⁴⁵¹ Donovan O. Schaefer, 'Mere Science: Mapping the Land Bridge between Emotion, Politics, and Ethics,' *Zygon* 54(2), 2019, p.383

⁴⁵² Schaefer, 'Mere Science,' p.383

⁴⁵³ Schaefer, 'Mere Science,' p.384

⁴⁵⁴ Sideris, *Consecrating Science*, p.175

⁴⁵⁵ Sideris, *Consecrating Science*, p.8

I will, in the next chapter, examine the challenge of how human affective capabilities can relate to grand scales, and conclude that the possibility cannot be summarily dismissed. Moreover, as Schaefer argues, engaging with large scales is ethically critical if global challenges like climate change are to be confronted.⁴⁵⁶

This is not the only place where she might provide greater leeway for individual differences. For example, she assumes that the alleged historical rejection of serial wonder – ‘wondering at knowledge already obtained stripped wonder of much of its popular allure and failed to elicit great enthusiasm among laypeople (and perhaps even among would-be scientists)⁴⁵⁷ - continues to be the case across significant populations in the twenty-first century. She further proposes that ‘humble ignorance is a fellow traveler with ethical forms of wonder, while imposed ignorance thrives in an atmosphere of arrogance, inordinate certainty, and awe at human knowledge and creations.’⁴⁵⁸ But while I value her emphasis on compatibilist wonder, and on the importance of ignorance, I suspect that she may be projecting her own (or other particular) affective preferences. Some personalities – and perhaps all of us, at times – may desire the kind of serotonin-infused, self-esteem-related affects she disparages, and which may be relatively harmless or, in moderation, even beneficial to mental health. Finally, and most pertinent to the matter at hand, Sideris does not allow – or at least downplays – the possibility that serial wonder (or the explanations that sometimes produce it) and compatibilist wonder might be able to co-exist in the same individual.

James, Dewey and the Nature of Attention

⁴⁵⁶ Schaefer, ‘Mere Science,’ pp.385-6

⁴⁵⁷ Sideris, *Consecrating Science*, p.24

⁴⁵⁸ Sideris, *Consecrating Science*, p.189

With this understanding of Sideris's argument, I now want to turn to my central claim that the compatibility of explanation and affect, including compatibilist rather than merely serial wonder, is feasible because of different forms of attention. Is it justified to consider attention under the umbrella of AEC? I think so, because while attention is sometimes framed in rather dry cognitive terms, it is inextricably linked with the bodily machinations of perception and affect. Indeed, as I will explain below in the context of Iain McGilchrist's work on the two primary forms of human attention, these forms arguably rely on basic brain structure and are thus thoroughly embodied.

I will show that the views of attention held by William James and John Dewey, and that of Abram, are underpinned biologically by McGilchrist's theory. I will also propose that Sideris's understanding of wonder is equally consistent with McGilchrist's account. I will then consider why these forms might explain how wonder and explanation, which the Problem of Alienation claims to be discordant, are in fact compatible, as attested by many religious naturalists. Ultimately this opens the way for reconciling rational-scientific and phenomenological perspectives without seriously undermining either. This is a big claim, and its exhaustive defence is beyond my scope, but Abram and McGilchrist are two of the important thinkers whose work heralds this possibility.

In matters of attention the stakes are very high, whether in individual lives or for the human future at large. In the words of McGilchrist with which I began this chapter, 'the kind of attention we pay actually alters the world: we are, literally, partners in creation.'⁴⁵⁹ On a more individual level, consider the case of the American novelist David Foster Wallace. In 2005 he addressed a graduation ceremony at Kenyon College, Ohio, which had awarded him an honorary

⁴⁵⁹ McGilchrist, *The Master and his Emissary*, p.5

degree. One of his messages might have seemed trite for a gathering of graduands - the significance of 'learning how to think' – were it not for his unusual interpretation of that phrase. Wallace was not talking about critical, creative, or any other frequently cited form of thinking; he was instead emphasising:

being conscious and aware enough to choose what you pay attention to and to choose how you construct meaning from experience. Because if you cannot exercise this kind of choice in adult life, you will be totally hosed.⁴⁶⁰

This had been a perennial struggle for Wallace, and three years later he committed suicide. What we attend to, and how, will massively influence our quality of life.

At the species level, the concepts we extract from the range of experience have enormous consequences. The very formulation of 'medicine' as a separable idea, for instance, might be celebrated for having triggered a creative and continuous processes of learning and healing.⁴⁶¹ On the other hand, one might lament the influence of the establishment of the 'economy' as a distinct category and the relationship of that category to others, given the consequences of the failure to grasp that 'the economy is a wholly owned subsidiary of the environment, not the reverse.'⁴⁶² Religions and other worldviews lead us to extract certain phenomena of interest from our environments while disregarding others. Our categories, then, largely determine our approach to the world, and the most important may be formed early in life, beyond our awareness.

⁴⁶⁰ Discussed by Hubert Dreyfus and Sean Dorrance Kelly, *All Things Shining: Reading the Western Classics to Find Meaning in a Secular Age* (New York: Free Press, 2011), pp.36-38

⁴⁶¹ Cavanaugh, *Biotheology*, p.47

⁴⁶² This statement is commonly attributed to Herman E. Daly or Gaylord Nelson

I have suggested, following EC theory, the deep role of image schemas in containerisation and categorisation, but to elaborate the process it is useful to begin with William James and John Dewey. For James, the continuous flow of experience is a whole - a *Gestalt*. It is a qualitatively indivisible moment-by-moment experience. We then select, and abstract, from that flow. In *The Principles of Psychology* (1890), James anticipated recent research in EC, and its supporting neuroscience, by refusing to treat concepts as ontologically separate entities. Cartesian dualism reified concepts, but for James, conceptualisation was really an act. He uses stellar constellations as a metaphor for this process: from an undivided field we select and abstract, and in doing so we add to and thereby change reality.⁴⁶³ Dewey's position is similar: from the richness of experience – from what he called 'pervasive qualitative unity' – we conceptualise as a process of discrimination. Like Merleau-Ponty in *Phenomenology of Perception*, Dewey described in *Experience and Nature* how subjects and objects, including ourselves and other things, are not divided in our primary experience, but abstractions from that experience.⁴⁶⁴

Affective neuroscience expands their descriptions by exposing the role of emotion in focusing and biasing attention.⁴⁶⁵ The contents of attention are only partly under our conscious control. Evolution has shaped the sensory apparatus through which we perceive the world, and has similarly tuned unconscious processes to marginalise certain information while raising the profile of other information more relevant to survival and reproduction. These filters are further shaped during the life course, where experiences become affectively tagged in memory (as in

⁴⁶³ Discussed in Johnson, *The Meaning of the Body*, pp.88-90

⁴⁶⁴ Discussed in Johnson, *The Meaning of the Body*, pp.20-21 (footnote 1), 100-101, and in Lakoff and Johnson, *Philosophy in the Flesh*, p.xi

⁴⁶⁵ See e.g. Judith Dominguez-Borràs and Patrik Vuilleumier, 'Affective Biases in Attention and Perception,' in Jorge Armony and Patrik Vuilleumier (eds.), *The Cambridge Handbook of Human Affective Neuroscience* (New York: Cambridge University Press, 2013), pp.331-56;

Christine D. Wilson-Mendenhall and Lawrence W. Barsalou, 'A Fundamental Role for Conceptual Processing in Emotion,' in Lisa Feldman Barrett, Michael Lewis and Jeannette M. Havilland-Jones (eds.), *Handbook of Emotions* (4th edition) (New York: The Guilford Press, 2016), pp.547-63;

Marc Lewis, *The Biology of Desire: Why Addiction is Not a Disease* (Brunswick and London: Scribe Publications, 2015), p.40.

Damasio's somatic marker hypothesis), and where the routine or insignificant can be pushed to the background in favour of the novel. This is a very physical process: through synaptic pruning, neglected phenomena recede in the cause of neural efficiency.⁴⁶⁶ We risk getting 'totally hosed,' as Wallace put it, because 'learning how to think' often involves protecting conscious awareness from these powerful unconscious forces thrusting their competing priorities upon us.

Wallace was alluding to the fact that our attention is not, of course, enslaved to evolutionary imperatives because we have a degree of executive control with which to introduce other goals that can provide another, simultaneous attention filter. Whether the goals are evolutionarily adaptive, culturally encouraged, or individually crafted, attentional selection can operate according to modality (visual, auditory, gustatory, and so on) and in typically cross-modal dimensions of space, time, or intensity. These selections form meaningful units with which concepts are built.⁴⁶⁷

Taking together the affective neuroscience with the overlapping perspectives of James and Dewey, the poetic expression of Robert Pirsig is apt: 'From all this awareness we must select...We take a handful of sand from the endless landscape of awareness and call the handful of sand the world.'⁴⁶⁸ Pirsig is getting at the same distinction made by Graham Ward, and discussed in Chapter 2, between dispositional belief, which operates at the level of affect, and propositional belief, being the explicit commitments commonly associated with the word 'belief.' Emotionally compelling religious or other philosophies will bias attention such that certain phenomena and concepts are preferentially extracted from our environmental awareness and cherished for their supposedly deeper significance.

⁴⁶⁶ Lewis, *The Biology of Desire*, p.168

⁴⁶⁷ Wilson-Mendenhall and Barsalou, 'A Fundamental Role for Conceptual Processing in Emotion,' p.549

⁴⁶⁸ Robert M. Pirsig, *Zen and the Art of Motorcycle Maintenance: An Inquiry into Values* (London: Vintage, 1991), p.72

We can now see in sharper relief what RN projects are necessarily about. Like any other philosophy, they involve exercising a degree of executive control over attention and what is selected for conceptual development, recognising this can only build upon - not replace - the affective currents that are already influencing the character of the concepts themselves. RN involves decisions about what to dredge up, shining, from the river of our everyday experience. For David Abram, this 'what' of attention – the phenomena he selects for preferential treatment - is the 'more-than-human world.' He extracts these phenomena from the flow of experience – from Dewey's 'pervasive qualitative unity' or James's *Gestalt* – and treats them intentionally through his particular 'how' of attention, namely his language project. Alphabetic literacy, in his view, limits attention by focusing our animistic capabilities upon linguistic signs rather than the sensuous world around us. This process, both historical and ontogenetic, imprisons us within a linguistic virtual world, a 'hall of mirrors' for the various concepts and meanings we then derive.⁴⁶⁹ Language enriches our experience but it also limits it by hardening the small selection that we extract from the flow.⁴⁷⁰ Abram seeks to change how we attend by using a different kind of language that might awaken ourselves to that broader form of awareness.

Two Forms of Attention

We can bring Abram's theory, the experience of reading his works and the accounts of attention provided by James, Dewey, and others together with the thesis put forward by Iain McGilchrist in his influential book *The Master and his Emissary: The Divided Brain and the Making of the Western World* (2009). McGilchrist's subject is attention, but his starting point is brain structure. He updates this much maligned subject of brain lateralisation with a vast body of recent research, acknowledging that the topic is mired in misunderstandings and over-

⁴⁶⁹ Abram, *The Spell of the Sensuous*, p.257

⁴⁷⁰ Johnson, *The Meaning of the Body*, p.267

simplifications, and attributing many of the false turns to another ‘what’/‘how’ issue: in this case, too many scholars have emphasised *what* takes place in each brain hemisphere (functions are almost always distributed across the two) rather than *how* those functions operate on each side. McGilchrist begins by summarising the phylogeny of brain segregation in animals and birds: the left hemisphere is characterised by focused attention (to peck or to chase, for example) whereas the right hemisphere has open attention (more involved in detecting potential predators, mates or allies, and in social bonding). To put it another way, the left deals more with the local, the right with the global.⁴⁷¹ As it increased in size, the brain actually became less interconnected, and its hemispheres less symmetrical.⁴⁷²

McGilchrist stresses that it is this aspect of consciousness – attention – that defines the principal difference between the hemispheres; the two sides provide distinct ways of attending to the world. The right hemisphere supports breadth and flexibility of attention, seeing things whole and in context. The capabilities that enable us to form relationships, such as empathy and emotional understanding, are largely activated by the right hemisphere. By contrast, the left hemisphere abstracts things from their context, breaking them down into parts from which it reconstructs a whole.⁴⁷³ The right ‘presents’ the world which the left then ‘re-presents.’⁴⁷⁴

The hemispheres therefore differ in how they seek to know about the world. The left prefers analytic, sequential processing, but the right favours parallel processing of different information streams simultaneously, trying to absorb the many aspects of what it encounters at once. The left hemisphere grasps the world through static representations that must be internally consistent. By contrast, knowledge for the right hemisphere emerges through a relationship, a

⁴⁷¹ McGilchrist, *The Master and his Emissary*, pp.25-28

⁴⁷² McGilchrist, *The Master and his Emissary*, p.18

⁴⁷³ McGilchrist, *The Master and his Emissary*, pp.27-28

⁴⁷⁴ McGilchrist, *The Master and his Emissary*, p.50

back and forth process between itself and whatever it encounters, and so is never finished or certain.⁴⁷⁵

These differences have profound consequences. The world we experience, phenomenologically, depends on which hemisphere's version of the world predominates at any given moment.⁴⁷⁶ As McGilchrist explains:

The brain has to attend to the world in two completely different ways, and in so doing to bring two different worlds into being. In the one, we *experience* – the live, complex, embodied, world of individual, always unique beings, forever in flux, a net of interdependencies, forming and reforming wholes, a world with which we are deeply connected. In the other we 'experience' our experience in a special way: a 're-presented' version of it, containing now static, separable, bounded, but essentially fragmented entities, grouped into classes, on which predictions can be based. This kind of attention isolates, fixes and makes each thing explicit by bringing it under the spotlight of attention.⁴⁷⁷

Attention, then, is not simply a fact or a cognitive function, but a relationship, a *way in which*, so that attending differently to the same situation is likely to lead to different behaviour and attitudes. Even if nothing actually changes in the world, attention alters *what kind of a* thing exists for us, and the different worlds it brings into existence will be accompanied by different values.⁴⁷⁸

⁴⁷⁵ McGilchrist, *The Master and his Emissary*, p.228

⁴⁷⁶ McGilchrist, *The Master and his Emissary*, p.10

⁴⁷⁷ McGilchrist, *The Master and his Emissary*, p.31 (emphasis in the original)

⁴⁷⁸ McGilchrist, *The Master and his Emissary*, pp.28-29

McGilchrist's book is the result of a twenty-year project on an epic scale, and among the many intriguing reflections it prompts is the fact of these two distinctive modes of attention is so obvious in hindsight. There are potential connections with various other important thinkers, many of whom have expressed similar or related sentiments but without McGilchrist's pinpointing of forms of attention as the underlying cause.⁴⁷⁹ However, the work is not beyond critique. Historians may deem implausible his proposition in Part II that the entire intellectual and artistic journey of the West since antiquity was mainly due to swings in hemisphere dominance.⁴⁸⁰ And his contention that it is specifically brain lateralisation that underpins the two distinct forms of attention, however well buttressed, is vulnerable, like its many predecessors, to future iterative understandings of the brain.

McGilchrist anticipates the latter challenge and notes that it does not matter insofar as his account of the two forms of attention does not stand or fall on any particular physical substrate.⁴⁸¹ The account does not ultimately require risky neuroanatomical commitments. One reviewer went so far as to say that the book is '*the most powerful argument penned by any living author of the importance of the arts and humanities*,'⁴⁸² and this may be justified because McGilchrist's own case for what are sometimes vaguely called 'other ways of knowing' is founded, unlike some other arguments, and somewhat ironically, on a vast body of supporting evidence from empirical studies of the brain.

⁴⁷⁹ For example, McGilchrist does not mention the experiments of Daniel Kahneman and Amos Tversky (which were the springboard for current behavioural economics), but there may be a connection to their 'System 1' and 'System 2' modes of thought (see e.g. Kahneman, *Thinking Fast and Slow*). One also wonders about Nietzsche's distinctions in *The Birth of Tragedy* between the Apollonian and Dionysian, in particular his belief that triumphant reason had subordinated art and left the modern world bereft of the Dionysian sources of life, a sentiment echoed also in Abram. However, these connections require much further scrutiny, not least because other aspects of brain structure are likely to be involved.

⁴⁸⁰ Randolph Roth, review of Iain McGilchrist's *The Master and his Emissary*, *The Journal of Interdisciplinary History*, 41(4), 2011, pp. 619–620

⁴⁸¹ McGilchrist, *The Master and his Emissary*, p.461

⁴⁸² Rupert Read, review of Iain McGilchrist's *The Master and his Emissary*, *Phenomenology and the Cognitive Sciences* 11(1), 2012, p.119 (emphases in the original)

There is an immediate consonance between McGilchrist's two kinds of attention and the accounts of James and Dewey. McGilchrist discusses this connection in relation to the way in which James and Dewey emphasised the importance of context, signalling 'dissatisfaction with the atomistic, rationalistic approach in philosophy and the abstraction that necessarily goes with it.'⁴⁸³ While McGilchrist does not cite the terms specifically, it is reasonable to conclude that the global, indivisible attention of the right hemisphere is James's *Gestalt* – the continuous flow of experience – and Dewey's 'pervasive qualitative unity.' The selection and extraction from that whole is what McGilchrist portrays at length in terms of left hemisphere processes. Note also that by emphasising how attention alters what kind of world exists for people, and that these different worlds will be accompanied by different values, McGilchrist echoes a Jamesian pragmatism where thoughts have real world consequences.

Bringing McGilchrist and Sideris together

When one reads McGilchrist's account of the characters of focused and global attention alongside Sideris's account of serial and compatibilist forms of wonder, the connection is clearly evident. Sideris does not cite McGilchrist, but both authors challenge the preference for a particular rational-scientific lens on the world to the exclusion of others, motivated by a desire to control and with self-reinforcing tendencies; both argue that the trend has troubling consequences; and both trace the problematic form to Enlightenment over-reach (in McGilchrist's case only as the last in a sequence of oscillations), seeking a rebalancing involving the global form of attention which McGilchrist associates with the right hemisphere and Sideris with flavours of compatibilist wonder.

⁴⁸³ McGilchrist, *The Master and his Emissary*, p.141

This is more than a vague synergy. McGilchrist describes how the global form of attention ‘presents’ where the focused form ‘re-presents’⁴⁸⁴ – the former is characterised by breadth and flexibility whereas the latter abstracts from context, breaks into parts and then reconstructs into wholes. Compatibilist wonder, in Sideris’s account, involves an unfocused breadth of attention, whereas the new cosmologists extract scientific understandings from their context, wonder at them and reconstruct them into grand narratives. Compatibilist wonder, like global attention, ‘is less an orientation to *what* something is or *how* it came about than *that* the thing is.’⁴⁸⁵ Compatibilist wonder, as an experience underwritten by global attention, does not concern “the network of causal relationships” among its constituent parts,’ and it ‘celebrates and prioritizes nature and direct experience over scientific information.’⁴⁸⁶ Like McGilchrist’s global attention, it involves the parallel processing (and difficulties in processing) of different information streams, in contrast to the analytic, sequential processing of focused attention.

McGilchrist’s discussion of what knowledge entails for the two hemispheres is also reflected in Sideris’s analysis. For global attention, knowledge is a back and forth between the right hemisphere and what it encounters, and as such, it is never finished. By contrast, knowledge for the focused attentional mode entails static representations that must be internally consistent. He suggests that only the former can deal with anything genuinely new; the latter is confined to ‘re-presentation.’ It is thus fascinating that Sideris observes:

Confidence in what we know, or think we know, can lead to a freeze-framing of the world around us. Scientific habits of mind – abstraction, isolation, reductionism – may well encourage such freeze-framing.⁴⁸⁷

⁴⁸⁴ McGilchrist, *The Master and his Emissary*, p.50

⁴⁸⁵ Sideris, *Consecrating Science*, p.174 (emphasis in the original)

⁴⁸⁶ Sideris, *Consecrating Science*, pp.175, 180

⁴⁸⁷ Sideris, *Consecrating Science*, p.26

She therefore criticises Edward O. Wilson because he:

confuses the map for the territory; only the map seems to him fully real. He fails to grasp that the unity of science is not the same thing as the unity of life.⁴⁸⁸

This becomes a major theme for Sideris, and the argument is essentially identical to McGilchrist's:

A world without concepts is a world largely devoid of coherence; but by the same token, we should not become so enamored of our knowledge and the frameworks we construct to organize it that we believe it to constitute a comprehensive or sacred reality.⁴⁸⁹

Continuing, she argues for a 'virtuous ignorance,' quoting Craig Holdrege in questioning 'the strong propensity to take abstract conceptual frameworks more seriously than full-blooded experience.'⁴⁹⁰ Her language, too, is very similar to McGilchrist: she chooses to quote Sam Keen's claim that extreme puzzle-solving may 'seal the ego off against further novelty,'⁴⁹¹ and she fears that when 'the knowledge produced by such focused inquiry is understood to comprise full "reality" – a tremendous loss has occurred, with far-reaching implications, ethically, spiritually, and intellectually.'⁴⁹²

⁴⁸⁸ Sideris, *Consecrating Science*, p.80

⁴⁸⁹ Sideris, *Consecrating Science*, p.191

⁴⁹⁰ Sideris, *Consecrating Science*, p.194, quoting Craig Holdrege, 'Can We See with Fresh Eyes? Beyond a Culture of Abstraction,' in Bill Vitek and Wes Jackson (eds.), *The Virtues of Ignorance: Complexity, Sustainability, and the Limits of Knowledge* (Lexington: University of Kentucky Press, 2008), p.323

⁴⁹¹ Sideris, *Consecrating Science*, p.27, quoting Sam Keen, *Apology for Wonder* (New York: Harper, 1973), p.31

⁴⁹² Sideris, *Consecrating Science*, p.27

Sideris's analysis of the ethical implications is strikingly similar to that of McGilchrist. There is a resonance between McGilchrist's forms of attention and Sideris's critique of the kinds of storytelling favoured by the new cosmologists, which she suspects will have damaging consequences. The linear, sequential character of focused attention – in contrast with the unfinished nature of the global kind - is likely to lead to the linear, teleological, novelty-foreclosing narratives that she chides. And like McGilchrist, she is wary of the controlling drive that can lie behind a scientific or focused lens in those cases where, again quoting Sam Keen, it is 'used hostilely to reduce the dimensions of meaning in an object to those that can be manipulated and controlled.'⁴⁹³ She fears, like McGilchrist, that any extracted and abstracted model cannot yield the same ethical motivation:

Once displaced from the lived experience of the world to abstract realms accessible to experts, wonder becomes at best a vicarious experience; the natural world, at best, a derivative reality.... Why attach ourselves to this world of illusion?...It estranges us from what we experience as real, meaningful, and beautiful.⁴⁹⁴

In a similar vein, towards the end of the book she discusses the worries of Rachel Carson and Loren Eiseley on science's creation of an 'artificial world.'⁴⁹⁵ Whether this artifice is created in the environment or in the mind, it can separate people even further from their sense of responsibility to nature. And in McGilchrist's basic characterisation of the two modes of attention, he shows how relationships are enabled by the empathy and emotional understanding dominated by the right hemisphere, global form.

⁴⁹³ Sideris, *Consecrating Science*, p.172, quoting Keen, *Apology for Wonder*, p.26

⁴⁹⁴ Sideris, *Consecrating Science*, pp.12, 48

⁴⁹⁵ Sideris, *Consecrating Science*, p.179

When Sideris lauds certain individuals for promoting compatibilist wonder, McGilchrist's two forms of attention are in evidence. She associates compatibilist wonder with naturalists devoted to immediate, rather than abstracted, experiences with the nonhuman world. She contrasts the very different sensibilities of David Attenborough and Richard Dawkins, favouring the former for 'firsthand encounters in natural settings,' and for embodying the principle that 'the best way to learn about nature is decidedly "*not by reading*" about it in books.'⁴⁹⁶ For Sideris, the apogee is Rachel Carson's *The Sense of Wonder: A Celebration of Nature for Parents and Children* (1965) for illustrating the value of 'attaching oneself to nature first – in ways that engage the senses, the emotions, and our daily experience – and seeking scientific facts and explanations of nature secondarily.'⁴⁹⁷ Where she falls short is the implication that it is difficult to blend these sensibilities, because, as I will shortly demonstrate, the relationship between McGilchrist's two forms of attention enables that co-existence.

Bringing McGilchrist and Abram together

David Abram is very much in Carson's tradition, and near the end of the book Sideris refers to Abram's 'lament [in *Becoming Animal*] that nature becomes a derivative, subordinate reality vis-à-vis scientific abstractions.'⁴⁹⁸ There is also a strong connection between McGilchrist and Abram, in that both see the current pre-eminence of one particular kind of attention (which the former associates with the left hemisphere) as the fundamental problem with human orientation towards the world. Both delve deeply into phenomenology as the corrective philosophical school for the dominance of the mainstream Western tradition of rationalism, empiricism, the scientific method, and analytic philosophy. They trace the origins of the problem

⁴⁹⁶ Sideris, *Consecrating Science*, pp.46-49, 52 (emphasis in the original). Sideris's reference to 'not by reading' draws upon Edward O. Wilson's novel *Anthill* (2010), but elsewhere she applauds Attenborough for his 'direct experience' kind of naturalism.

⁴⁹⁷ Sideris, *Consecrating Science*, p.48

⁴⁹⁸ Sideris, *Consecrating Science*, p.194

to different sources: McGilchrist emphasises mechanistic thought and the scientific revolution as only the most recent and egregious swing in a long historical and geographically-specific pattern of oscillation between the dominance of each form of attention, while Abram stresses a single ‘Fall’ process, namely the development of alphabetic language.

McGilchrist allots more space to the question of how the dominant form of attention changes in each life course. He offers evidence that ‘the right hemisphere is particularly important in childhood experience and is preponderant even in *language* development in early childhood,’ and observes that ‘in childhood, experience is relatively unalloyed by re-presentation: experience has “the glory and the freshness of a dream,” as Wordsworth expressed it.’⁴⁹⁹ This sentence is notable for two reasons. The first is that, while it is common to regard blinkered states such as those bemoaned by McGilchrist and Abram as negative dream states, it is a similarly common trope to regard the pre-alienation states they mourn as positive dream states. Note also that Matthew Arnold’s version of the ACAN with which I opened this thesis – his famous poem *Dover Beach* – grieved for a pre-scientific ‘world which seemed to lie before us like a field of dreams.’ As I will discuss further in the next chapter, Wordsworth, Abram and McGilchrist are all using, intentionally or not, a ‘Rebirth’ plot from which the dream trope is familiar.

The second point to note here is Abram’s position as one of Wordsworth’s heirs: both are dedicated to language projects as a means to liberate lost forms of attention, and specifically those of a naturalistic hue. As McGilchrist explains, Wordsworth attempts the rescue:

⁴⁹⁹ McGilchrist, *The Master and his Emissary*, p.359 (emphasis in the original)

through poetry, which with its reliance on metaphor and implicit meaning allows the right hemisphere to circumvent the ordinary processes of everyday language which inevitably return us to the familiar, and reduce the numinous to the quotidian.⁵⁰⁰

Abram's approach, while in poetic prose rather than recognisable poetry, similarly involves elevating the more-than-human-world from its marginalisation and objectification in everyday language to a thrilling host of subjectivities in which we are thoroughly enmeshed, a matrix which AEC helps us to feel with greater potency.

Given the lack of evidence that McGilchrist and Abram are aware of each other's work, it is intriguing that they reach for the same metaphor to explain their alienation processes.

McGilchrist writes:

It is as if the left hemisphere, which creates a sort of self-reflexive virtual world, has blocked off the available exits, the ways out of the hall of mirrors, into a reality which the right hemisphere could enable us to understand.⁵⁰¹

In referring to language as a particular manifestation of the focused analytical attention that McGilchrist associates with the left hemisphere, Abram argues in *The Spell of the Sensuous* that:

It was only with the plugging of these last pores – with the insertion of visible letters for the vowels themselves – that the perceptual boundary established by the common language was effectively sealed, and what had once been a porous membrane became an

⁵⁰⁰ McGilchrist, *The Master and his Emissary*, p.378

⁵⁰¹ McGilchrist, *The Master and his Emissary*, p.6

impenetrable barrier, a hall of mirrors...The 'I,' the speaking self, was hermetically sealed within this new interior.⁵⁰²

He expands on this same imagery in *Becoming Animal*:

Even as we discern the imminent danger to ourselves, we seem unable to locate any exit from the hall of mirrors, so thoroughly transfixed have we become by our own reflections.⁵⁰³

Words become more than symbols, and their imaginative constructions can seem to have genuine existence when they do not.⁵⁰⁴ Graham Ward, citing McGilchrist, notes the increasing confidence in the 20th and 21st centuries in what are actually virtual realities, a notion to which McGilchrist repeatedly refers in conjunction with left-hemisphere representations.⁵⁰⁵

The accounts of Abram and McGilchrist, then, are distinct yet complementary: both alphabetic literacy and, later, a mechanistic bent in scientific modes of thought have both helped to create the Problem of Alienation. Both processes have encouraged detachment and abstraction which, while beneficial for many purposes, have affective implications. Both authors suggest paths towards rebalancing, but it is Abram who fulsomely embraces the task. His work represents a naturalistically religious extension of the phenomenological tradition, yet one which – sentience of rocks and rivers notwithstanding – is compatible with mainstream science. It is, in McGilchrist's terms, an expansion of right-hemisphere attention without sacrificing that of the left.

⁵⁰² Abram, *The Spell of the Sensuous*, p.257

⁵⁰³ Abram, *Becoming Animal*, p.178

⁵⁰⁴ Cavanaugh, *Biotheology*, p.87

⁵⁰⁵ Ward, *Unbelievable*, p.49. McGilchrist, *The Master and his Emissary*, pp.6, 38, 57, 93, 115-16, 121, 126, 192, 195, 200

Toggling, Reintegration and the Compatibility of Explanation and Affect

It is at this point that I wish to return to the enigma of the compatibility of explanation and wonder attested by many religious naturalists. While Abram may have a preference for compatibilist wonder, there is nothing substantive in his account that opposes scientific explanation as such. More than that, I will suggest that explanations themselves can deliver forms of positive affect that are not as sinister as Sideris and McGilchrist propose. To be fair to Sideris, she does acknowledge, again quoting Sam Keen, that:

There are certain ‘open’ and ‘creative’ types of scientific thinkers for whom all the ‘abstractions and explanations which arise out of the desire to understand and control the world do not prevent a return to the object in a spirit of wonder.’⁵⁰⁶

For example, she notes that Darwin, judging by one of his letters, perceived ‘a division between the world as given by science and the phenomenal world of sense and experience,’ and that ‘explaining how birds were made was beside the point in the moment of joyous reverie Darwin describes.’⁵⁰⁷ She even poses the essential question, namely: ‘Can the relationship between these two realms – science and sense perception or information and experience – be understood as dialectical rather than rivalrous?’⁵⁰⁸

Sideris’s hostility to the alleged affective and ethical deficiencies of scientific explanation – and McGilchrist’s preoccupation with the perils of the focused form of attention - prevent them from developing a compelling answer that reflects the enigmatic experience of many

⁵⁰⁶ Sideris, *Consecrating Science*, p.175, quoting Keen, *Apology for Wonder*, pp.33-34

⁵⁰⁷ Sideris, *Consecrating Science*, p.82

⁵⁰⁸ Sideris, *Consecrating Science*, p.82

religious naturalists. Sideris, for instance, supposes that ‘Darwin’s scientific habits of mind, his preoccupation with understanding the genesis of these organisms, made it difficult simply to enjoy them, except in such moments of drowsy forgetfulness,’ a broader claim that is not fully justified by the passage she cites.⁵⁰⁹ I now wish to develop a more thorough answer.

The compatibility of the two forms of attention is explained in part by McGilchrist’s account of how they operate across time. He marshals the duck/rabbit image made famous by Wittgenstein – a picture of a duck that the brain can flip into a picture of a rabbit, yet not see both simultaneously – which can serve as a metaphor for the phenomenological experience of being able to *toggle* (my word, not McGilchrist’s) between the forms of attention, but not experience both at exactly the same moment.⁵¹⁰ The two forms inhibit one another at the same moment, but not otherwise. One can see, then, how it is possible to toggle between a left-hemisphere-dominated explanatory frame of attention and the right-hemisphere-based attitude such as wonder, where the former does not chronically impinge upon the latter.

This notion of toggling between these forms of attention parallels Sideris’s question about whether information and experience might somehow be ‘dialectical rather than rivalrous.’ Similarly, she suggests elsewhere that one ideally needs ‘an ability to move back and forth between the specialist’s account and more immediate – *unmediated* by science – experiences of nature’⁵¹¹ and acknowledges this possibility:

⁵⁰⁹ Sideris, *Consecrating Science*, p.82

⁵¹⁰ McGilchrist, *The Master and his Emissary*, p.82

⁵¹¹ Sideris, *Consecrating Science*, p.49 (emphasis in the original)

This account of natural processes does not much enter into the experience of wonder; but neither does wonder in these instances entail a rejection or denial of the causal account.⁵¹²

And while Sideris is critical of religious naturalist Ursula Goodenough, she does seem to acknowledge that Goodenough achieves – at least for herself – this combination:

She alludes to a scientific perception of beauty and awe (say, that of cells and molecules) that *complements* beauty and awe directly experienced when one encounters majestic trees or wild creatures, without the aid of ‘deeper’ scientific understanding... *For me,*’ she writes, ‘a religion works only if it offers the opportunity for mystical experience, but it needs...to be embedded in my cognitive reality.’⁵¹³

The experience of wonder (or other prevailing affect) *is interrupted* when one switches to focused, abstract attention. This helps to explain the fears which, as I have noted, extend even to some religious naturalists, that the demands for explanation and wonder cannot be squared. The philosopher Owen Flanagan, in *The Problem of the Soul: Two Visions of Mind and How to Reconcile Them* (2002), wishes to integrate ‘the manifest and scientific images,’ concepts he borrowed from Wilfred Sellars that appear to run parallel to the forms of attention McGilchrist describes.⁵¹⁴ Flanagan shares Sellars’ hope that these might ‘blend together in a true stereoscopic view,’ but fears that this ‘is clearly not the way things are.’⁵¹⁵ He is sceptical that Sir Arthur Eddington, who compared the common sense view of a solid table with a knowledge of its microscopic structure,

⁵¹² Sideris, *Consecrating Science*, p.174

⁵¹³ Sideris, *Consecrating Science*, p.106, quoting Ursula Goodenough, ‘What Science Can and Cannot Offer to a Religious Narrative,’ *Zygon* 29(3), 1994, p.325 (Sideris’s emphasis)

⁵¹⁴ Owen Flanagan, *The Problem of the Soul: Two Visions of Mind and How to Reconcile Them* (New York: Basic Books, 2003), p.36

⁵¹⁵ Flanagan, *The Problem of the Soul*, p.43

could actually hold both descriptions in mind at the same time.⁵¹⁶ George Monbiot reports a related experience:

When, after half an hour walking across a wood, I reach the fence that separates it from the surrounding fields, I feel that something which was just beginning – a deep abstraction – is prematurely truncated. The discovery and wonder, the freedom from structured thought which had begun to open my mind come to an abrupt end.⁵¹⁷

Another personal anecdote echoes that of Monbiot. At around the time I read McGilchrist's book, I was running on a crisp, bright morning through fields and forests of glittering snow. I noted my preference for the more open, global form of attention for enjoying exercising in this landscape, because the immediacy and intimacy was interrupted by toggling to consider, for example, what was happening structurally to the snow crystals as the temperature slowly rose. McGilchrist's account of what happens is worth quoting in full:

Because of its power to change, attention can also destroy. Many things that are important to us simply cannot withstand being too closely attended to, since their nature is to be indirect or implicit. Forcing them into explicitness changes their nature completely, so that in such cases what we come to think we know 'certainly' is in fact not truly known at all. Too much self-awareness destroys not just spontaneity, but the quality that makes things live; the performance of music or dance, or courtship, love and sexual behaviour, humour, artistic creation and religious devotion become mechanical, lifeless, and may grind to a halt if we are too self-aware...⁵¹⁸

⁵¹⁶ Flanagan, *The Problem of the Soul*, p.45

⁵¹⁷ Monbiot, *Feral*, p.183

⁵¹⁸ McGilchrist, *The Master and his Emissary*, p.180

Later in the book, he resumes this line of thought:

One could say that the sublime is more truly present when only partially visible than when explicit, and subject to the full glare of consciousness: it is our re-presentations of natural beauty – as of the erotic, or the divine – that are limiting, so that, by another ‘paradox’ (as the left hemisphere would see it) limited information is less limiting, more capable of permitting them to presence to us.⁵¹⁹

McGilchrist is at his most strident when portraying left hemisphere impact, stating that ‘our passions...all religious sense, all imaginative and intuitive processes – are denatured by becoming the object of focussed attention, which renders them explicit, therefore mechanical, lifeless.’⁵²⁰ And yet such explanations seemingly had no *chronic* impact when I toggled back to the global mode, nor any noticeable enduring consequence when reflecting on the experience later.

This distinction between temporary interruption and permanent undermining is only a partial explanation. What about the testimony of those scientists and religious naturalists that explanation ‘adds’? Is this merely ‘to the side’ rather than ‘on top’ because of the different forms of attention involved? Does it, in a sense, broaden wonder without heightening it? I will make two tentative suggestions which require expansion beyond the scope of this thesis. The first is that, while we may have to toggle between the two forms of attention, they are not hermetically sealed. McGilchrist describes ‘reintegration,’ a right-left-right pattern in cognition which, incidentally, he notes may underpin Hegelian dialectic. Only the right hemisphere can detect anything new, insofar as the faculties for detecting novelty are largely underwritten by this side

⁵¹⁹ McGilchrist, *The Master and his Emissary*, p.369

⁵²⁰ McGilchrist, *The Master and his Emissary*, p.209

(the left can only work with what it already knows). This new something is delivered to the left, which it ‘unfolds’ and then returns to the right in an ‘enhanced form’.⁵²¹

If we subject a work of art, say, or even the human body, to detached, analytic attention, we lose the sense of the thing itself, and its being in all its wholeness and otherness recedes. But the result of such attention, *provided it is then relinquished*, so that we stand in a state of openness and receptivity before the thing once again, may be a deeper and richer ‘presencing’. The work of the left hemisphere done, the thing ‘returns’ to the right hemisphere positively enriched...It is the analogy of the necessary analysis carried out by the pianist in learning a piece, an analysis that must be forgotten during performance.⁵²²

Unfortunately, McGilchrist’s examination of how reintegration operates is narrower and less well supported with empirical studies than other portions of the book. However, it represents an intriguing area for future research, and if confirmed it would mean that the two forms of attention are not as distinct as the toggling phenomenon – real though it is - might at first suggest.

Here, I tentatively suggest that scientific knowledge may enrich experience *even when not thinking directly about that knowledge*. For example, if one knows about the ways in which trees respond to their surroundings – their sensitivity to light, chemicals, and contact as analogues to our own sight, smell/taste, and touch – I suspect that it deepens experience of being in a forest even when not cogitating about those discoveries. This remains to be substantiated, but the investment in earlier focused attention may change broader attitudes and sentiments that in turn enhance later right brain-dominated attention.

⁵²¹ McGilchrist, *The Master and his Emissary*, p.331

⁵²² McGilchrist, *The Master and his Emissary*, pp.232-33 (emphasis in the original)

Let me expand this possibility with a personal example which, like McGilchrist's above, pertains to music. I have never regretted my music theory and analysis training, because it has never dampened my immediate musical experience. This is partly due to the ability to toggle. As the religious naturalist Chet Raymo writes:

There are underlying patterns in nature – taxonomies, classifications, orders of relation, genealogies, laws. There are days when I am content to contemplate these patterns, as described by science on the printed page, as one might read in silence the score of a Bach fugue, marvelling at the carefully woven threads of counterpoint that provide the underlying structure of the music. And there are other days when the music is enough, in the ear alone, unanalysed, resonant, imperative, all-enclosing.⁵²³

This is essentially toggling, if day-to-day rather than moment-to-moment.

However, my own experience is more complex and is, I suspect, getting at what McGilchrist begins to explore with his concept of reintegration. My affective response to Brahms' *Ein Deutsches Requiem* is deepened by understanding what the German text means (notwithstanding my preference for it to be performed in the original language), by appreciating how biblical texts are skilfully redeployed (most brilliantly, and with exquisite pathos, the Gospel of St John in the Fifth Movement – *Ihr habt nun Traurigkeit*), and by understanding how the creation of the work may have related to Brahms' own experience and beliefs (regardless of the truth of those accounts). Similarly, my affective response to Henryk Górecki's *Symphony of Sorrowful Songs* is heightened by understanding the origin and translation of its Polish texts, which

⁵²³ Raymo, *Honey from Stone*, p.123

were written by parents and children separated from one another in wartime. Indeed, the explanations can transform what was already poignant from a purely musical point of view into something almost unbearable to hear. The immediate musical experience has, in some way, been enriched by these understandings, even though I cannot explain how this process of reintegration works. This is an important area for further research.

My second suggestion for why explanation might ‘add’ is through affective associations that comprehension or description might possess in their own right. To what extent do these depend on the language used? McGilchrist emphasises that language is not a left hemisphere phenomenon as originally thought, but spread across both. It is, again, in the ‘how’ that the two kinds of attention differ, with metaphor and implicit meanings underwritten by the right hemisphere and more abstract or clichéd aspects more prominent in the left. McGilchrist highlights how the Romantic poets, and especially Wordsworth, attempted to communicate the world of the right hemisphere.⁵²⁴ I have chosen David Abram as my example of a similar strain in modern RN: his self-declared language project knowingly attempts the impossible task of conveying the ineffable, in his case of being a bodily creature physically interwoven with his ecological and geological surroundings. Note, though, that he does so even when extracting something on which to focus, analysing it, and providing explanations. McGilchrist’s view that this process of extraction and analysis is a left-hemisphere process that takes living phenomena and ‘renders them explicit, therefore mechanical, lifeless’⁵²⁵ does not sit easily with my own experience of reading Abram, nor with the breadth of his positive reception. Abram’s language seems to be an act of reconstruction, of rebuilding a bridge, however delicate, across the divide. After all, it is a style that prompts an abundance of embodied simulation – of the kinds of

⁵²⁴ McGilchrist, *The Master and his Emissary*, pp.377-78

⁵²⁵ McGilchrist, *The Master and his Emissary*, p.209

affective responses which McGilchrist argues are predominantly underwritten by the right hemisphere.

It is possible that less poetic and simulation-rich styles of language may ‘add’ in their own right rather than merely by enriching right hemisphere-based experience. McGilchrist repeatedly acknowledges the value of the left hemisphere, but not when it acts in relative isolation. It should, he says, be ‘a staging post, an intermediate level of the “processing” of experience, never the starting point or end point, never the deepest, or the final, level.’⁵²⁶ He seems to regard its affective qualities as somewhat sinister and addictive, in part because the left hemisphere houses more extensive dopamine transmission.⁵²⁷ One could speculate that the positive affect some associate with explanation derives from the cognitive ease it facilitates, from increased self-esteem, or even at times from a sense of social superiority.

However, there are less menacing possibilities. The explanations themselves are often marvellous, and perhaps explanation provokes positive associations of past learning processes, or promises further questions to explore and future learning opportunities. That this may engage the Pankseppian dopaminergic SEEKING system does not necessarily make it undesirable.⁵²⁸ There is something genuine, if imprecise, in the simple notion of a love of knowledge and learning, such as the enjoyment one can gain from pondering the structure, orchestration or harmonisation of a piece of music. Indeed, I suspect that these kinds of affects based on the focused form of attention may be sufficiently rewarding to some individuals that, to obtain them, they will interrupt any positive affects emanating from the global form. For example, Ursula Goodenough has developed, with Paul Woodruff, a concept of ‘mindful reverence’ which claims

⁵²⁶ McGilchrist, *The Master and his Emissary*, p.209

⁵²⁷ McGilchrist, *The Master and his Emissary*, pp.237, 393

⁵²⁸ Panksepp and Biven, *The Archaeology of Mind*, Chapter 3 (pp.95-144)

that an understanding of the scientific worldview ‘deeply enhances’ mindfulness in a Buddhist sense and leads to greater veneration for all that surrounds us.⁵²⁹ Proposing that one lives in consideration of scientific facts rather than simply knowing them necessarily involves a considerable degree of focused analytical attention, and it is difficult to interpret such an orientation in sinister terms.

I also suggest that there may be significant gradations in forms of focused attention, which I will illustrate through some further personal examples. One is the conscious engagement in what Abram calls ‘participation,’ such as when I might complement the immediate experience of a bird or a tree with awareness of how both myself and this other form of sentience are creating affects in the other. In the first case, the bird will, at some level, have detected my presence, prompting various changes within it; in the second, if I alter the light, chemical composition or air currents for the tree, this too will generate changes within it, alongside our reciprocal exchange of oxygen and carbon dioxide. Another example is reflecting on the simple yet easily forgotten fact that I am on a roughly spherical planet within the vastness of space. These examples still amount to focused forms of attention to which one must toggle from a global form, but note that, because of the less abstract nature of the cognition – and the imaginative capacities involved – *the break with the global form may be less stark* in these explanations relating to sheer existences rather than some other varieties of explanation, such as the specific biological micro-structures within the birds or plants, or the mathematical dimensions of the planet. Those may carry their own affective charge, but are further from global attention.

Finally, it does not undermine the argument for the cohabitation of wonder and explanation to acknowledge that the global form of attention is, of course, always available where

⁵²⁹ Ursula Goodenough and Paul Woodruff, ‘Mindful virtue, mindful reverence,’ *Zygon* 36(4), 2001, pp.585-95

a satisfying explanation is not. Goodenough, while celebrating scientific discovery and indeed reductionism in the context of wonder, writes elsewhere that she has reconciled herself with not being able to propose explanations for everything, and finds positive affect in this ‘covenant with mystery.’⁵³⁰ McGilchrist compares this right hemisphere capacity not to demand certainty or clarity to Keats’s ‘negative capability,’ when one is, in the poet’s words, ‘capable of being in uncertainties, mysteries, doubts, without any irritable reaching after fact and reason.’⁵³¹ One can still seek to have both wonder and explanation while agreeing with Sideris that ‘one key to understanding this sense of [compatibilist] wonder lies in grasping the somewhat elusive claim that reality *is* mystery; the two are not in conflict,’⁵³² and that, in the words of Scott Russell Sanders which she quotes, ‘the sheer existence of hand or tree or star, are more marvelous than anything we can say about them.’⁵³³

Conclusion

I have begun to rebut the claim made by advocates of the Problem of Alienation that scientific explanation empties the world of wonder and other kinds of desired affect. When we associate what we regard to be precious sensations and emotions with scientific understandings of ourselves and the world, we find the former unaffected and perhaps the whole enriched. We can see now why it is natural for many people to assume otherwise, and to fear that explanation will destroy affect: it is because they notice that explanation does indeed *interrupt* a certain kind of affect. But they proceed to make the mistake of assuming that this temporary disturbance is permanent. It is rather a case that we *toggle* between the two forms of attention that underlie

⁵³⁰ Goodenough, *The Sacred Depths of Nature*, p.12

⁵³¹ McGilchrist, *The Master and his Emissary*, p.174

⁵³² Sideris, *Consecrating Science*, p.176

⁵³³ Sideris, *Consecrating Science*, p.168, citing Scott Russell Sanders, ‘The Most Human Art’ (draft conference paper, Journey of the Universe Conference, March 24-26, 2011), 4, www.journeyoftheuniverse.org/conference-at-yale/ (page no longer available at 26 May 2021).

wonder and explanation. However, the forms are not entirely divorced: detractors can also fail to recognise not only that explanation may carry positive affect in its own right, but also transfer it indirectly, through the reintegration process, whereby it might enhance otherwise unmediated experience. McGilchrist does not, at any point in his *tour de force*, cite any self-identified religious naturalists or their works, yet his analysis of the two forms of attention, and how they do and do not interact, goes much of the way to solving the conundrum, even if we might temper his account with a more generous evaluation of the role of affect within a mature left hemisphere mode.

McGilchrist would commend, I suspect, the strivings of religious naturalists insofar as they answer his call – following the oscillations between right- and left-hemisphere preponderance in the West – to preserve the benefits of focused, rational, abstract attention while rebalancing and recombining it with the blessings of its global, intuitive, concrete counterpart. We can in fact characterise RN as a movement that precisely attempts to achieve his optimal cognitive pattern whereby the right hemisphere passes something new over to the left, which unpacks it (in this case under the constraints of naturalism) and, thus enriched, can reintegrate it with the global, affective, living world of the right. But RN can also find pleasure and comfort in the explanations themselves.

My survey of attention, and its role in the explanation-wonder problem, reinforces McGilchrist's case that it is difficult to overstate the importance of attention and how we cultivate it. In Chapter 2 I endorsed Mark Johnson's audacious claim that 'Coming to grips with your embodiment is one of the most profound philosophical tasks you will ever face.'⁵³⁴ As I

⁵³⁴ Johnson, *The Meaning of the Body*, p.1

conclude the current chapter I can now validate another of his major declarations, which is worth quoting in full:

Our individual and collective habits of grasping the meaning of anything via abstraction will fatefully determine how our world stands forth for us. And if our philosophies – our most comprehensive accounts of the meaning of things – are grounded on the most partial or superficial aspects of experience, then our entire understanding of life will be drastically impoverished.

It thus makes all the difference whether we take experience in the limited sense, as meaning ‘things as known or conceptualized,’ or whether we take it in its fullness, as redolent with meaning that surpasses our undoubtedly useful abstractions from it. Part of philosophy’s job is to help us recover the fullest possible meaning of our experience – the pulsating, lived world that transcends any conceptual specification of it.⁵³⁵

Not only does attention determine the world that we experience, and by extension its meaning, but it is inextricably linked to the ethical sphere. The etymological roots of ‘attending’ are in ‘tending,’ and one cannot easily care for what one does not notice.

The groom with whom I began this essay entered into a second kind of Romantic company that evening, namely his engagement with Keats’s strain of thought. He would not have recognised, as he headed to the dance floor, Meister Eckhart’s dual appeal to ‘put on your jumping shoes which are intellect and love.’⁵³⁶ And rightly so, because few would prefer to toggle away from those moments towards left hemisphere-based intellectual cogitation. But, as a general attitude, there is much to be gained by heeding Eckhart’s plea. What many of the

⁵³⁵ Johnson, *The Meaning of the Body*, p.270

⁵³⁶ Quoted in Raymo, *Honey from Stone*, p.15

Romantics could not yet see – and what many of the Enlightenment figures against which they rebelled had similarly failed to realise – was the potential for a kind of fusion of these generally contrasted modes. The different forms of attention can explain what the religious naturalist knows from experience, that the way in which they perceive the world is like the bee invoked by Bernard of Clairvaux, heavy with wax and honey, ‘capable of both lighting the light of knowledge and infusing the taste of grace.’⁵³⁷

⁵³⁷ Quoted in J. J. Kripal, ‘Re-Reading Bernard of Clairvaux’s *Sermones Super Cantica Cantorum*,’ in Jacob A. Belzen and Antoon Geels (eds.), *Mysticism: A Variety of Psychological Perspectives* (Amsterdam: Rodopi, 2004), p.130

CHAPTER 5

Countering Demotivation: Inhabiting a Naturalist Epic

Religion in all these cases differs from a mere play of the imagination in one important respect; it reacts directly upon life; it is a factor in conduct. Our religion is the poetry in which we can believe. Mere poetry is an ineffectual shadow of life; religion is, if you will, a phantom also, but a phantom guide.

– George Santayana⁵³⁸

The Problem of Alienation that I contested in the past two chapters mainly concerns our affective orientation in space – that is, our relationship to our surroundings in the present moment. I now wish to turn to our affective orientation in time. When George Santayana described religion as a ‘guide’ – as ‘the poetry in which we can believe’ – he was stressing its role not just as an imaginative response to our environment but a guide for how we should behave. The word ‘guide’ might also suggest orientation on a journey, and hence time.

Critics claim that naturalism cannot offer the meaningful orientation in time provided by traditional religion. This is what I have called the Problem of Demotivation, according to which naturalism is a philosophy that deadens desirable affect by offering no sense of purpose. The argument that naturalism offers no purpose – or at least not necessarily - has been developed in the specific context of RN by Mary Midgley and Lisa Sideris. My purpose in this chapter will be to show that while there is merit in their positions, the situation is more complex than they propose. I will demonstrate that RN might, aided by AEC, situate us affectively in time and be charged with motivational force. This will involve exploring some genuine shortcomings faced by naturalism in doing so. My focus on AEC contests more common dualistic traditions that treat human engagement with narrative in non-biological terms. It represents, as far as I can

⁵³⁸ Santayana, *Interpretations of Poetry and Religion*, pp.25-26

ascertain, an original exploration of how the affectivity of different kinds of story relates to existing and potential forms of RN, and what ‘embodying a myth’ might entail in the literal sense of AEC.

The critique of naturalist purpose in Midgley and Sideris

Midgley’s targets in *Evolution as a Religion: Strange Hopes and Stranger Fears* (1985) and *Science and Salvation: A Modern Myth and its Meaning* (1992) are, respectively, biologists and physicists who make grand philosophical claims unwarranted by the science itself.⁵³⁹ As she explains in the first book:

I had been struck for some time by certain remarkable prophetic and metaphysical passages that appeared suddenly in scientific books about evolution, often in their last chapters. Though these passages were detached from the official reasoning of the books, they seemed still to be presenting as science. But they made startling suggestions about vast themes such as immortality, human destiny and the meaning of life.⁵⁴⁰

Midgley – a relentless skewer of scientific conceits - observed that these authors presented their ‘startling suggestions’ without reference to the enormous body of past work on these matters in other disciplines. Her key point, which buttresses the Problem of Demotivation, is that the scientific account of the universe and our place in it underdetermines ideology. As she writes in *Science and Poetry* (2001):

⁵³⁹ Mary Midgley, *Evolution as a Religion: Strange Hopes and Stranger Fears* (London and New York: Routledge, 2002); *Science as Salvation: A Modern Myth and its Meaning* (London and New York: Routledge, 2002)

⁵⁴⁰ Midgley, *Evolution as a Religion*, p.viii (Introduction to the 2002 edition).

The trouble about it [‘the modern scientific vision’] is that, once we have this new vision, there are many different interpretations that we can put on it, many different dramas that arise, many directions in which it can lead us.⁵⁴¹

She made a similar point in defending James Lovelock’s Gaia hypothesis against those who deemed it unscientific. Midgley argued that critics had no grounds for assuming their own views were *more* scientific, because scientific discovery does not offer insights of the kind that dictate how we relate to the universe:

The choice between these attitudes is a moral choice. It is the choice of a way of life, a choice of which attitude we think it good to live with. It is not a cognitive choice between various scientific hypotheses about the facts, so it cannot be determined by science.⁵⁴²

Hence, where social relations are posited between ourselves and the universe at large, these are a human choice that the science does not require.⁵⁴³

In *Consecrating Science*, Lisa Sideris continues in a similar vein:

Like them [what she calls the ‘new cosmologists’], I am keenly interested in the *placement*, the *positionality* of the human vis-à-vis the universe. Unlike them, I reject the proposition that there exist clear answers to questions about our role in the universe, and that science can provide such answers...As Weber famously argued, science in and of itself cannot

⁵⁴¹ Mary Midgley, *Science and Poetry* (London and New York: Routledge, 2001), p.36

⁵⁴² Mary Midgley, ‘Criticizing the Cosmos,’ in W. B. Drees (ed.), *Is Nature Ever Evil? Religion, Science and Value*. London: Routledge, 2003), p.24

⁵⁴³ Jozef Keulartz agrees, rejecting “any appeal to ‘the’ ecology” because science, including ecology, is a fallible and contingent phenomenon with many different yet viable visions and narratives. See Keulartz, ‘Rolston,’ p.93

answer the key question of whether the knowledge it produces is worth having; for such assessments, we must reflect on ‘our ultimate position towards life.’⁵⁴⁴

She therefore challenges religious naturalist Loyal Rue for presenting a narrative whereby early life ‘diversified aggressively’ and molecules ‘competed for the attention of unbound atoms’ in a ‘chemical free-for-all’ because he has ignored balancing themes of attraction and bonding that would be similarly justified by current science.⁵⁴⁵ The paradigmatic example is, perhaps, Darwinian evolution. It is often linked to ideas of struggle, conflict, and capitalism, but this is to de-emphasise many other more positive aspects of the evolutionary process and what it entails – from intra- and inter-species cooperation to the multitude of organismic forms to the achievements of humankind - aspects from which Darwin himself drew inspiration.⁵⁴⁶ As Sideris concludes, ‘we must necessarily make choices about where to focus our attention,’ and ‘these choices will reveal our values.’ The resulting visions are not objective, apolitical truths.⁵⁴⁷

The troubling narrative pattern chosen by the ‘new cosmologists’ regards the Anthropocene as a triumph to be celebrated rather than a grave danger to life on Earth. She cites Clive Hamilton’s observation that ‘we are witnessing a contemporary recovery of the idea of a second creation’ and Christophe Bonneuil’s claim that it amounts to the ‘grand narrative of modernity, that of Man moving from environmental obliviousness to environmental consciousness, of Man equaling Nature’s power, of Man repairing Nature.’⁵⁴⁸ Sideris thereby highlights a twist in the Problem of Demotivation, in that the new cosmologists, far from lacking

⁵⁴⁴ Sideris, *Consecrating Science*, pp.2-3, 7 (emphases in the original)

⁵⁴⁵ Sideris, *Consecrating Science*, p.92, quoting Loyal Rue, ‘Epic of Evolution,’ in Bron Taylor (ed.), *The Encyclopedia of Religion and Nature* (London and New York: Continuum, 1995), p.614

⁵⁴⁶ See Levine, *Darwin Loves You*, pp.60-61. Levine attributes the phrase ‘ideological indeterminacy of ideas’ to Christopher Herbert.

⁵⁴⁷ Sideris, *Consecrating Science*, p.193

⁵⁴⁸ Sideris, *Consecrating Science*, pp.139-40, quoting Clive Hamilton, ‘Human Destiny in the Anthropocene,’ in Clive Hamilton, Christophe Bonneuil, and François Gemenne (eds.), *The Anthropocene and the Global Environmental Crisis* (London: Taylor and Francis, 2015), p.41; and Christophe Bonneuil, ‘The Geological Turn: The Anthropocene and its Narratives,’ in the same volume, p.31.

normative power, ‘*too easily*’ normalize and justify an environmentally destructive status quo and encourage more of the same.⁵⁴⁹

I agree with the critique of the anthropocentrism evident in some RN narratives, and later in this chapter I will assess the extent to which this creates affective difficulties, given the nature of our social emotions and simulation capabilities. I also agree with both authors where they argue that science underdetermines narrative. Put another way, there is an *ideological* indeterminacy of scientific ideas, such that any scientifically valid hypothesis – even where only one is deemed credible – might be spun in a number of ways when it comes to its meaningfulness for human beings. Contrary to what some religious naturalists claim, then, I do not believe that naturalism offers an inherent purpose; that purpose must be chosen.⁵⁵⁰

There are some constraints in how chosen purposes are elaborated into narrative. At the most basic level, some of the theoretical narrative possibilities may be largely inaccessible due to species-specific (and mammal-specific and perhaps life-specific) limitations. As William James wrote:

The whole drift of my education goes to persuade me that the world of our present consciousness is only one out of many worlds of consciousness that exist, and that those other worlds must contain experiences which have a meaning for our life also.⁵⁵¹

There is then the fact that narrative choices are subject to the dramatic, affective, and pragmatic demands imposed by human audiences. However, beyond these fundamental constraints,

⁵⁴⁹ Sideris, *Consecrating Science*, p.139 (emphasis in the original)

⁵⁵⁰ Note, though, that from a naturalist perspective, supernaturalism does not provide inherent purpose either.

⁵⁵¹ William James, *Writings, 1902-1910* (New York: Library Classics of the United States, 1987), p.463

scientific discovery does not, as Midgley and Sideris argue, place many restrictions on narrative (or on plot, which I will use interchangeably).

By contrast, scientific discovery *does* place constraints on content. Here, I may differ from Midgley and Sideris slightly on epistemology. I doubt that they subscribe to an ‘anything goes’ relativism when it comes to narrative, but both are at risk of being seen to do so. Sideris, for example, quoting Scott Russell Sanders, states that ‘Anyone who claims to comprehend our vast universe is “either a lunatic or a liar.”’⁵⁵² We should certainly be sceptical of any such claim, but scientific discovery means that not all stories are equally credible. There is often a choice of scientifically valid perspectives, but not a free-for-all. When Richard Holloway suggests that the universe is ‘a mute amnesiac with no papers,’⁵⁵³ the metaphor is powerful in the sense that no plot is explicit, but less so in terms of scientific discovery, whereby the universe might metaphorically divulge her secrets, albeit indirectly and in provisional fragments.

Sideris holds another view on the role of story in RN that I would like to challenge in more detail. It springs from her advocating immediate, sensory engagement with the natural world as a more worthy and ethical mode than creating and reflecting on grand narratives. She argues against a focus on story *per se*. This is problematic for several reasons. First, to continue the thrust of my previous chapter, she presents a false choice: it is perfectly possible to combine a deep commitment to sensory engagement with an interest in narrative engagement. Second, stories are widely valued for their situational and motivational benefits, even if some (including perhaps Sideris) have little need for them. Third, there is a political – indeed *realpolitik* – issue: one can choose to vacate the narrative field, but others will not, and it is arguably an

⁵⁵² Sideris, *Consecrating Science*, p.168. The webpage she refers to for the Russell Scott Sanders quote is no longer functioning, but is included as part of his paper ‘The Power of Stories,’ *The Georgia Review* 51(1), 1997, p.125.

⁵⁵³ Holloway, *Leaving Alexandria*, p.159

ethical imperative to compete with various other narratives that motivate people towards more ecologically destructive behaviours than those of the new cosmologists.

However, I want to challenge at greater length three other aspects of Sideris's position, because they are more closely linked to matters of AEC. The first is that stories may be ineluctable, the second extends the point that she could make more allowance for personality differences, and the third concerns her not fully investigating alternatives to the linear, triumphalist narratives she disparages. To be fair to Sideris, she does begin, in her penultimate chapter, to explore whether some kinds of stories – non-linear, non-teleological, and containing twists and surprises – might be available that are preferable to those that the new cosmologists tend to prefer.⁵⁵⁴ However, her treatment of these possibilities is brief. I wish to pick up from where she left off, to consider different narrative structures – different plot types - available to RN, and to trace their affective contours. From an AEC perspective, this will again involve mammalian emotional systems, image schemas, and embodied simulation.

Stories as inevitable

On the question of whether story is dispensable, I am following H. Porter Abbott in defining narrative (which I will use interchangeably with story and plot) simply as 'the representation of events in time.'⁵⁵⁵ At this level – and perhaps beyond - narrative is utterly instinctive. Abbott continues:

Narrative is the principal way in which our species organizes its understanding of time...

Wherever we look in this world, we seek to grasp what we see not just in space but in

⁵⁵⁴ Sideris, *Consecrating Science*, pp.165-68

⁵⁵⁵ H. Porter Abbott, *The Cambridge Introduction to Narrative* (Cambridge: Cambridge University Press, 2002), p.xi

time as well...our narrative perception stands ready to be activated in order to give us a frame or context for even the most static and uneventful scenes.⁵⁵⁶

It seems that, ‘unless especially trained to do so, our brain simply does not allow for the possibility of unconnected or random experience.’⁵⁵⁷ The classic 1944 experiment of Fritz Heider and Marianne Simmel vividly illustrates the reflexive manner in which even watching simple triangles moving in space leads us to report that they are ‘following’ each other or otherwise to impute them with sinister intent.⁵⁵⁸ As James Wallis explains:

In the same way that your mind sees an abstract pattern and resolves it into a face, your imagination sees a pattern of events and resolves it into a story.⁵⁵⁹

And this narrative instinct lies behind the narrative fallacy, our bias towards favouring information that takes narrative form.

Aristotle proposed that we are narrative or story-telling animals,⁵⁶⁰ but telling stories arguably precedes language because, as Antonio Damasio argues, stories are made ultimately from ‘the imagetic representation of sequences of brain events.’ He suggests that ‘registering what happens in the form of brain maps’ is probably a relatively early evolutionary development,

⁵⁵⁶ Abbott, *The Cambridge Introduction to Narrative*, pp.3, 11

⁵⁵⁷ James B. Ashbrook and Carol Rausch Albright, *The Humanizing Brain: Where Religion and Neuroscience Meet* (Cleveland, Ohio: Pilgrim Press, 1997), p.13

⁵⁵⁸ Fritz Heider and Marianne Simmel, ‘An experimental study of apparent behavior,’ *The American Journal of Psychology* 57, 1944, pp.243-259.

⁵⁵⁹ James Wallis, ‘Making Games That Make Stories,’ in Pat Harrigan and Noah Wardrip-Fruin (eds.), *Second Person: Role-Playing and Story in Games and Playable Media* (Cambridge, MA: MIT Press, 2007), p.69

⁵⁶⁰ Aristotle, *Poetics*, translation and notes by R. Janko (Indianapolis, IN: Hackett Publishing Company, 1987)

and a condition for language.⁵⁶¹ This natural activity became, in human beings, the solution for how to comprehend and transmit information, and how to influence others with it.⁵⁶²

Stories are not just ineluctable, but extraordinarily important for shaping human self-understanding at both individual and population levels. They facilitate both inward scrutiny of the self (consider Proust's suggestion that stories are optical instruments through which a reader might discern otherwise unobservable aspects about himself)⁵⁶³ and outward extension of the possibilities for self (witness Keith Oatley's observation that they enable mental multiplication of the roles we can experience).⁵⁶⁴ A whole area of psychological treatment – narrative therapy – has emerged to exploit these qualities, and in a less clinical context, I will show in the course of this chapter how religious naturalists can use stories to define or extend the possible human identities that mainstream consolidated science might intimate.

Personality differences: connectionism versus existentialism

Just as Sideris might allow for more flexibility in the kinds of affects that people seek, she might provide more leeway for different individual tastes – or needs – with regards to story, not all of which are ethically suspect. Here I will be entering the territory of how stories manage and channel the mammalian emotional systems identified by Panksepp, and how this allows us to expand the options that Sideris only hinted at in *Consecrating Science*. However, it is at an even more basic level of affect at which we need to begin when thinking about personality differences; indeed, it is the most basic affective distinction made by organisms. As Damasio explains:

⁵⁶¹ Antonio Damasio, *The Feeling of What Happens: Body and Emotion in the Making of Consciousness* (London: Vintage, 2000), p.189

⁵⁶² Damasio, *Self Comes to Mind*, p.293

⁵⁶³ Marcel Proust, *Le Temps Retrouvé* (Paris: Gallimard, 1954), p.276

⁵⁶⁴ Oatley, *The Passionate Muse*, p.184

In the course of evolution the innate and automated equipment of life governance – the homeostasis machine – became quite sophisticated. At the bottom of the organization of homeostasis we find simple responses such as *approaching* or *withdrawing* of an entire organism relative to some object; or increases in activity (*arousal*) or decreases in activity (*calm* or *quiescence*). Higher up in the organization we find *competitive* and *cooperative* responses.⁵⁶⁵

The automatic, affective assessment of approach versus avoid is a central reason why John Locke's idea of value-free sensation is no longer tenable.⁵⁶⁶ As individuals, is our encounter with the universe weighted towards 'approach' or 'avoid'? Do we belong or not? Is our fundamental attitude towards the universe that is something essentially benign, if we can only live in harmonious relation to it; or something essentially malign or at least callous, to which creative resistance or escape are the only viable options?

With his customary prescience, William James had noticed a similar phenomenon in his book *Pragmatism* (1907), which categorises thinkers as 'tender-minded' or 'tough-minded.' The former preferred ideals and high abstractions and to dwell on perceived unities, while the latter were more realistic and ready to work towards a world they thought could be improved instead of feeling that it was essentially perfect and unchangeable.⁵⁶⁷ And he thought it was highly consequential:

⁵⁶⁵ Damasio, *Looking for Spinoza*, pp.30-31 (emphases in the original)

⁵⁶⁶ John Locke, *An Essay Concerning Human Understanding* (Oxford: Oxford University Press, 2008)

⁵⁶⁷ William James, *Pragmatism: A New Name for Some Old Ways of Thinking* (Cambridge, Cambridge University Press, 1907), pp.6-40

I shall have to take account of this clash and explain a good many of the divergencies [sic] of philosophers by it...his temperament really gives him a stronger bias than any of his more strictly objective premises. It loads the evidence for him one way or the other, making for a more sentimental or a more hard-hearted view of the universe, just as this fact or that principle would. He *trusts* his temperament. Wanting a universe that suits it, he believes in any representation of the universe that does suit it.⁵⁶⁸

There could be dramatic social ramifications too, for 'it breeds antipathies of the most pungent character between those who lay the emphasis differently.'⁵⁶⁹ Earlier, in *The Varieties of Religious Experience*, James had recognised that Nietzsche 'expresses well the clash between the two ideals': when faced with a naturalist cosmology, 'must our means of adaptation... be aggressiveness or non-resistance?'⁵⁷⁰

Paolo Costa has elaborated this theme in his analysis of 'secular wonder':

We articulate or opt for a specific picture of our relation with the world or with the totality of being. Here the repertoire of images is large, but not unlimited. Thus we have to clarify what such a bond looks like: whether we are 'balanced' with the world around or not; 'attuned' to it or not; 'rooted' in it; 'reconciled' with it; or, on the contrary, 'weighed down' or 'overburdened' by the world; 'sick' of or 'nauseated' by it; 'indifferent' to, 'terrified' by, 'thrown' into, or 'imprisoned' in it.⁵⁷¹

⁵⁶⁸ James, *Pragmatism*, p.7 (emphasis in the original)

⁵⁶⁹ James, *Pragmatism*, p.9

⁵⁷⁰ James, *The Varieties of Religious Experience*, p.373

⁵⁷¹ Paolo Costa, 'A Secular Wonder,' in Levine (ed.), *The Joy of Secularism*, p.136

This is an interesting series of embodied descriptions for the quality of the abstract relation, but he finally settles on another: ‘Perhaps, however, the most pregnant image is the one that wavers between the two poles of familiarity and homelessness: do we feel ‘at home’ in the world, or not?’⁵⁷²

There is, then, a fundamental difference in one’s acceptance or non-acceptance of the universe. In Stephen Jay Gould’s parlance, it is the ‘warm fuzzy’ relation versus the ‘cold bath’ relation.⁵⁷³ I suggest that people tend not to make a detached, considered decision over which cosmology they choose; instead, relatively stable affective personalities (shaped by both genetics and somatic markers) lead individuals to find one or other position more resonant, while sometimes retaining the flexibility to move between positions.⁵⁷⁴

This distinction is evident in RN. ‘Cold bath’ types would instantly rebut the central claim of the Problem of Demotivation that a lack of cosmic purpose leads to undesirable affect. Indeed, they find this possibility intoxicating. If, in the words of Steven Weinberg, ‘the more the universe seems comprehensible, the more it also seems pointless,’ we are free to fashion our own values and our own ends.⁵⁷⁵ It is a perspective that clearly owes much to Nietzsche and Sartre, and even to Descartes’ conception of the independent soul.⁵⁷⁶ William James was aware of something like it, observing:

⁵⁷² Costa, ‘A Secular Wonder,’ p.136

⁵⁷³ Stephen Jay Gould, *Rocks of Ages: Science and Religion in the Fullness of Life* (London: Vintage, 2002), pp.193-97

⁵⁷⁴ Asma, *Why We Need Religion*, p.157

⁵⁷⁵ Weinberg, *The First Three Minutes*, p.144

⁵⁷⁶ Midgley, ‘Criticizing the Cosmos,’ pp.11-14

It is only natural that those who have caught the scientific fever should pass over to the opposite extreme, and write sometimes as if the incorruptibly truthful intellect ought positively to prefer bitterness and unacceptableness to the heart in its cup.⁵⁷⁷

I will refer to this position as *existentialism* given its resonance with that branch of philosophy, and will articulate its position as a form of RN before contrasting it with what I call *connectionism*, the more ‘tender-minded,’ ‘warm fuzzy’ school.

Max Weber remarks in ‘Science as a Vocation’ that every theology assumes that the world has meaning, and that only a gutsy few can acknowledge its absence.⁵⁷⁸ This depends, though, on the complex and contested subject of what meaning is, whether those claiming that the world lacks meaning simultaneously smuggle it back into the world in disguise, and whether those disguised forms have real weight. For example, Nietzsche arguably replaced one form of meaning with another:

Oh, those Greeks! They knew how *to live*: for that purpose it is necessary to keep bravely to the surface, the fold and the skin; to worship appearance, to believe in forms, tones, and words, in the whole Olympus of appearance! Those Greeks were superficial – *from profundity!*⁵⁷⁹

Existentialist naturalists who warmly embrace the notion of a pointless universe similarly craft a new meaning rather than being true nihilists.⁵⁸⁰ For example, Thomas Huxley – ‘Darwin’s

⁵⁷⁷ James, *The Will to Believe*, p.7

⁵⁷⁸ Gerth and Wright Mills, *From Max Weber*, p.155

⁵⁷⁹ Friedrich Nietzsche, *The Gay Science* (Mineola, NY: Dover Publications, 2006), pp.xi-xii (emphases in the original).

⁵⁸⁰ They can be considered *religious* naturalists based on Crosby and Stone’s definition of RN as ‘a movement that asserts the possibility and desirability of a robust religious/spiritual life without recourse to the supernatural, whether deity, soul, or heaven,’ given the sufficiently broad definition of ‘spiritual’ that they clearly intended in this book and that of ‘religious’ I offered in Chapter 1. Crosby and Stone, *The Routledge Handbook of Religious Naturalism*, p.7.

bulldog’ - took a bleak view of nature but cast it as something against which we must do battle: ‘the ethical progress of society depends, not on imitating the cosmic process, still less in running away from it, but in combating it.’⁵⁸¹ Similarly, his modern heir Richard Dawkins, in *River Out of Eden* (1995), argues that ‘the universe that we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil, no good, nothing but pitiless indifference,’ but concludes *The Selfish Gene* (1976) with the line: ‘We, alone on earth, can rebel against the tyranny of the selfish replicators.’⁵⁸² In other words, Dawkins agrees that the universe is pitiless but finds meaning through defiance: there is a plotline on an epic scale, with plucky human beings heroically resisting an uncaring cosmos.

Beyond that, existentialists choose different specific purposes and motivations. For Edward O. Wilson, it is the quest for a holistic science and, to use the title of Wilson’s famous book, the aspiration for *Consilience* (1998) across the sciences and humanities.⁵⁸³ For Steven Pinker, it is about ‘heroic epistemological self-denial,’ but this is not considered austere because, following Darwin, ‘reason becomes the risk-taking, imaginative force’ rather than imagination itself.⁵⁸⁴ For Carl Sagan, in *The Demon-Haunted World* (1995), we are called upon to improve nature, a belief in progress to which existentialists, as Enlightenment enthusiasts, tend to subscribe.⁵⁸⁵

While existentialists tend towards aggression – a bold confrontation with their predicament - the majority of self-identifying religious naturalists do not cast the universe as something with which to do battle. Instead, they are *connectionists* who highlight ways in which it

⁵⁸¹ Thomas H. Huxley, *Evolution and Ethics* (Romanes Lecture) (Fairfield, IA: 1st World Library, 2003), p.90

⁵⁸² Richard Dawkins, *River out of Eden: A Darwinian View of Life* (New York: Basic Books, 2008), p.132.

Richard Dawkins, *The Selfish Gene*. 2nd revised edition (Oxford: Oxford University Press, 1989), p.201.

⁵⁸³ Wilson, Edward O. 1998. *Consilience: The Unity of Knowledge*. London: Little, Brown and Company.

⁵⁸⁴ I quote Levine’s discussions of Pinker in *Darwin Loves You*, pp.102, 115

⁵⁸⁵ Carl Sagan, *The Demon-Haunted World: Science as a Candle in the Dark* (New York: Ballantine Books, 1997).

The most vociferous opponent to these authors is perhaps the philosopher John Gray, who chides the belief in progress as a Judaeo-Christian hangover with no sound basis (see e.g. *Straw Dogs* and *The Silence of Animals*).

is, on balance, benevolent, emphasising for example its creativity or even its purportedly nurturing character. They may regard symbiosis and cooperation as more dominant evolutionary mechanisms than competition.⁵⁸⁶ Whereas existentialists are liable to see the emergence of order from chaos as eclipsed by the Second Law of Thermodynamics – as a clock relentlessly dragging us to individual and collective doom⁵⁸⁷ - with ceaseless suffering in the meantime, connectionists often regard cosmic and planetary evolution as a wonderful tale of emergent complexity. I call this school of RN ‘connectionism’ because of its emphasis on how we are embedded in ecological and indeed cosmic matrices. David Abram is among the better known, along with James Lovelock, Ursula Goodenough, Loyal Rue, Brian Swimme, and Thomas Berry.

There are several other differences between these two positions. The basic identity of the existentialist is the striving individual, but for the connectionist each person is entwined with some broader community, and one extending beyond the human. Both owe a debt to romanticism, but that of the existentialists is evident in the lonely hero while for the connectionists it lies more in pastoral visions and linguistic styles. In contrast to existentialists like Sagan, connectionists tend to view modern attempts to improve material conditions as destroying something sustaining or otherwise precious in nature. One is more likely to find epistemological generosity in connectionism, some strains of which might seem imprecise and wishy-washy to existentialists, as would be expected from James’s observations of how the tough- and tender-minded often view one another. Finally, it is impossible not to see a distinction between masculine and feminine archetypes, and between the political right and left, even though there are contradictions: connectionism, for example, while seemingly rooted in

⁵⁸⁶ De Vries cites Lynn Margulis and Dorian Sagan as examples of this perspective. See Jacobus J. De Vries, ‘Cooperation or competition: comments on Rolston,’ in W. B. Drees (ed.), *Is Nature Ever Evil? Religion, Science and Value* (London: Routledge, 2003), p.87

⁵⁸⁷ W. B. Drees, ‘This Vale of Tears – The Best of All Possible Worlds?’ in W. B. Drees (ed.), *Is Nature Ever Evil? Religion, Science and Value* (London: Routledge, 2003), p.2

more liberal and collectivist traditions, often cherishes notions of a better, unspoilt time, leaving existentialists with the more progressive narrative.

While all viable narratives include some kind of conflict, it is a hallmark of all great stories that there is some kind of struggle *within* the protagonist, regardless of the form of any external adversary. Existentialist and connectionist narratives, like any others, may involve summoning the necessary courage, eschewing temptation and otherwise choosing a morally superior path, however difficult. The great interest in existentialist accounts - and their chief value, perhaps - is that they often unite the vastness of the space and time with a struggle within each person to meet an indifferent universe with honesty and fortitude, and to craft individual and collective meanings in the face of its unyielding wind. Connectionists by definition see the universe as intrinsically less hostile, but seek the inner strength to resist beguiling forces such as the unbridled consumerism decimating our nonhuman kin.

These differences are generalisations and should not be overstated. Both existentialism and connectionism fall under the RN banner and both blend Enlightenment ideals with romantic influences. It is also the case that both are mythopoeic in their generation of grand, orienting narratives. Connectionists tend to be more explicit about that aim; some existentialists would reject the idea, but this is mainly due to their narrow understanding of the term 'myth,' or the belief that the word is impossibly tarnished, rather than disputing their role in creating guiding narratives about the universe and our place in it.

The existentialism-connectionism axis cuts across that proposed by Sideris between 'naturalists' and 'new cosmologists.' For Sideris, the distinction is about immediate sensory experience versus mythmaking, and about compatibilist versus serial wonder. I have already suggested that sensory experience versus mythmaking is a false choice, and this is sustained by

those many religious naturalists who combine them. Indeed, David Abram, who she applauds for his remarkable sensibilities, still presents a grand narrative in terms of how human self-understanding was originally sound, went awry, has had damaging consequences and yet might be corrected. One could say something similar for David Attenborough, an archetype for her definition of ‘naturalist.’⁵⁸⁸ In almost every case, religious naturalists – connectionists included – engage in mythmaking, even if they do not always fall foul of the anthropocentrism that Sideris rightly criticises.

Returning to the question of narrative flexibility posed by Midgley and Sideris, one cannot say that the existentialists are more ‘right’ than the connectionists, or vice-versa. It is not possible to ascertain any inherent social relation with the universe that would provide some ultimate justification for an ‘avoid’ or ‘approach’ response.⁵⁸⁹ One might say that either position is unjustified (there are a number of scientifically valid alternatives) or, equally, that either position is justified, given that both are broadly compatible with the science. Much will come down to the personality and needs of a particular subscriber. Recall, though, that content is more constrained. For example, it is difficult for an existentialist to claim that the notion of human isolation is equally scientifically valid to that of ecological interdependence. In the modern West at least, individualism may seem warranted phenomenologically⁵⁹⁰ and make more practical and emotional sense in terms of legal rights and responsibilities, but the idea of the individual as the evolutionary unit of selection is heavily disputed. More importantly, even a diehard existentialist

⁵⁸⁸ See e.g. David Attenborough, *A Life on our Planet: My Witness Statement and a Vision for the Future* (London: Witness Books, 2020).

⁵⁸⁹ I tend to agree – but with a naturalist bent – with William Bernhardt when he argues that “‘evil’ and “‘good’ are terms we apply to human ways of relating persons to one another and not to the more inclusive reality within which the divine operates. Any extension of these judgmental concepts beyond the human leads to confusion and frustration.” William Bernhardt, ‘The Reality Principle in Religion,’ *The Iliff Review* 16 (Spring), 1959, p.40.

⁵⁹⁰ The sense that individualism seems phenomenologically valid in the modern West (people’s direct experience is of themselves as individuals) is ironic, in that phenomenology seems a more natural ally for connectionism while the more mainstream Western philosophical tradition (though only empiricism rather than rationalism in James’s analysis of the ‘tough-minded’ and ‘tender-minded’) is more easily allied to existentialism. It is also likely that any phenomenological sense of separation and hence individualism is cultural; in oral and non-Western cultures without strong individualist traditions, the opposite may be true.

would not doubt that human beings rely on a vast range of internal micro-organisms, external food chains and other inviolable environmental connections. Another key area of content constraint in RN involves an overabundance of either light or darkness at the expense of the other. Connectionists, perhaps in their attempts to counter the Problem of Demotivation, are liable to emphasise the wonders of the natural world and their sense of belonging within it while downplaying its inextricable horrors.

Midgley and Sideris, then, might cede a little more epistemological heft to science in its capacity to constrain content, but they are right that it barely restricts plot. They therefore distinguish themselves from other advocates of the Problem of Demotivation who are doubly in error by referring only to the ‘cold bath,’ existentialist version of naturalism (other options are available) and assuming that a despairing nihilism is the only response, overlooking the upbeat response of many existentialists to the idea of a purposeless universe.

The range of plots available to RN

A great variety of religious naturalisms are possible, but Sideris’s treatment of those alternatives in *Consecrating Science* is very brief. As Jerome Stone, a chronicler of RN, observes:

Religion can be a quest or an answer. Likewise religious naturalism can have the adventure or loneliness or angst of a search or it can have the assurance of a settled conviction. It can lead to transformation or to stability.⁵⁹¹

⁵⁹¹ Stone, *Religious Naturalism Today*, p.226

My account of these varieties and how AEC can assist in overcoming the Problem of Demotivation begins with the fact that the distinctions between plots extend beyond approach/avoid – beyond connectionism/existentialism - to differential activation of the mammalian emotional systems identified by Panksepp. CARE and GRIEF tend to be more evident in connectionism, with its focus on belonging, the importance of protecting the Earth and all its creatures, and the great losses already incurred. Existentialism, on the other hand, is more prone to activating FEAR in its depiction of cosmic and evolutionary callousness and inevitable physical decay, offset by the serotonin-fuelled gust of self-esteem attending heroic resistance and, sometimes, a superiority borne of facing difficult alleged truths. In what follows I will describe how these are elaborated in the limited number of basic narrative plots available to naturalism and indeed any story about our place in the universe. In doing so I will pick up the trail where Sideris left off, but armed with our appreciation of how our whole selves are engaged through AEC.

Skilled authors have always been aware, implicitly or explicitly, that plot has an ‘affective topography,’⁵⁹² and that their narrative choices orchestrate emotions at this overarching level. Ever since Aristotle’s *The Art of Rhetoric*, scholars have studied patterns in the emotional appeals of various rhetorical forms.⁵⁹³ The suggestion that plot forms are somehow limited and that there are patterns in their associated affects may not sit well with fears about reductionism and with the emphasis on the local and the particular. Against the structuralism of Claude Levi-Strauss and his followers, Jean-François Lyotard, for instance, favoured ‘local language games’ over the teleological grand narratives of modernity. Later, anthropologist Clifford Geertz stressed the importance of ‘thick descriptions’ of shifting, localised cultures over the hunt for immutable

⁵⁹² Jane Bennett’s term, referring to Kant’s morality (Bennett, *The Enchantment of Modern Life*, p.134).

⁵⁹³ Aristotle, *The Art of Rhetoric* (London: HarperCollins, 2012). See e.g. Simon Lancaster, *Winning Minds: Secrets from the Language of Leadership* (London: Palgrave MacMillan, 2015). Affective narratology and affective film studies are expanding fields. See e.g. Hogan, *Affective Narratology*.

cross-cultural patterns.⁵⁹⁴ Critics are correct that the more rigid models sit uneasily with the variety of global narrative traditions, and indeed those of Western literatures, including the modern novel.⁵⁹⁵

However, the case for some degree of patterning is overwhelming. I refer not just to the instinctive, cross-species level of ordering and interpreting events, but to our unconscious detection of more elaborate patterns. This is amply demonstrated by the impact on readers or viewers of deviating from those patterns.⁵⁹⁶ Our reactions to how plots unfold, whether intrigued or annoyed, show that patterns exist, and good writers know exactly how to confound our expectations, drawing upon our propensity to notice new or otherwise pattern-breaking aspects of the environment. Of course, this need not imply that any of the patterns are innate or universal, and for my purposes I need not venture into such difficult territory. I need only claim that identifiable patterns exist. The relationship between pattern and variety is, I suggest, rather like that between the alphabet and literature, or between the forms of classical music and the repertoire itself: there are foundational patterns (and indeed constraints), but these are incredibly fecund, spawning a near infinite range of possibilities.

Some patterns are commonly found in cultures across the world and as far back as stories survive. The history of the efforts to identify them is long, involving Levi-Strauss, folklorist Vladimir Propp, semiotician A. J. Greimas, and many others.⁵⁹⁷ That history need not delay us here, beyond noting that meta-analysis of these studies of narrative shape suggest that

⁵⁹⁴ Clifford Geertz, *The Interpretation of Cultures* (New York: Harper and Row, 1973), discussed by Vásquez, *More Than Belief*, pp.212-13.

⁵⁹⁵ Bart Keunen, 'Plot, Morality, and Folk Psychology Research,' in Lars Bernaerts *et al.* (eds.), *Stories and Minds: Cognitive Approaches to Literary Narrative* (Lincoln, NE: University of Nebraska Press, 2013), p.188

⁵⁹⁶ Oatley, *The Passionate Muse*, pp.45-46

⁵⁹⁷ Keunen, 'Plot, Morality, and Folk Psychology Research,' pp.187-88

many alight on a similar form,⁵⁹⁸ corresponding to what mythographer Joseph Campbell described as the *monomyth*:

The standard path of the mythological adventure of the hero is a magnification of the formula represented in the rites of passage: *separation – initiation – return*: which might be named the nuclear unit of the monomyth.

*A hero ventures forth from the world of common day into a region of supernatural wonder: fabulous forces are there encountered and a decisive victory is won: the hero comes back from this mysterious adventure with the power to bestow boons on his fellow man.*⁵⁹⁹

The monomyth expands what Aristotle had observed in his *Poetics*, namely that every story requires a plot with motivation, including a desire against obstruction and with a major role for human intention.⁶⁰⁰ Tzvetan Todorov and Henri Bremond compress this story arc to the form balance-imbalance-balance,⁶⁰¹ and even without the initial balance there is an essential viability in imbalance-balance, as in William James's condensed form:

There is a certain uniform deliverance in which religions all appear to meet. It consists of two parts: -

1. An uneasiness; and
2. Its solution.⁶⁰²

⁵⁹⁸ John Yorke, *Into the Woods: How stories work and why we tell them* (London: Penguin, 2013). See in particular his chart summarising a meta-analysis of twelve studies converging on a similar basic structure (p.256).

⁵⁹⁹ Joseph Campbell, *The Hero with a Thousand Faces* (London: Fontana Press, 1993), p.30 (emphases in the original). Edward O. Wilson cites Campbell as an inspiration for his portrayal of the Enlightenment founders as having been on a quest with mythic qualities (Wilson, *Consilience*, p.336 (endnote))

⁶⁰⁰ Discussed by Asma and Gabriel, *The Emotional Mind*, p.281

⁶⁰¹ Keunen, 'Plot, Morality, and Folk Psychology Research,' pp.187-88

⁶⁰² James, *The Varieties of Religious Experience*, p.508. He continues: '1. The uneasiness, reduced to its simplest terms, is a sense that there is *something wrong about us* as we naturally stand. 2. The solution is a sense that *we are saved from the wrongness* by making proper connection with the higher powers.' (emphases in the original)

The nucleus, then, is what Damasio calls ‘the innate and automated equipment of life governance – the homeostasis machine’⁶⁰³ – and the basic affective drive for homeostatic balance.

Philosopher David Velleman continues the thought:

The cadence that makes for a story is that of the arousal and resolution of affect, a pattern that is biologically programmed. Hence we understand stories viscerally, with our bodies.⁶⁰⁴

Many scholars claim that the monomyth gives rise to a limited number of plot types. Narratologist Patrick Colm Hogan, for example, identifies three - the romantic, the heroic and the sacrificial - while others propose a much larger figure.⁶⁰⁵ Here, I will choose a model that strikes a balance between the simplistic and the unmanageably complex, and that is suitable for my aim to illustrate the common plot forms in RN and their affective implications. This is Christopher Booker’s tome *The Seven Basic Plots: Why We Tell Stories* (2004),⁶⁰⁶ the result of a thirty-four year investigation and one of the more scholarly and well-known, even if some may be deterred by the psychoanalytic influences. The forms he identifies are not mutually exclusive, and more complex stories may involve aspects of several.

Overcoming the Monster plots involve an evil force that the protagonist must vanquish in order to restore balance. Examples include the story of Theseus and the Minotaur, *Beowulf*, *Dracula*, *Jaws*, and the James Bond series. In this pattern, we either begin in a state of fear (and often then anger directed at the monstrous force) or are plunged from a state of happy

⁶⁰³ Damasio, *Looking for Spinoza*, p.30

⁶⁰⁴ J. David Velleman, ‘Narrative Explanation,’ *The Philosophical Review* 112(1), 2003, p.13

⁶⁰⁵ Hogan, *Affective Narratology*, p.19. Among the better known authors who have settled upon much larger figures are Ronald Tobias (20) and Georges Polti (36), although these often describe more specific situations than overall plot shapes. See Ronald B. Tobias, *Twenty Master Plots and How to Build Them* (London: Platkus, 1995), and Georges Polti, *The Thirty-Six Dramatic Situations* (Boston, MA: The Writer, 1940)

⁶⁰⁶ Christopher Booker, *The Seven Basic Plots: Why We Tell Stories* (London and New York: Continuum, 2004)

innocence into a condition of fear after an early crisis event. The hero does battle with the monster and, after a point of maximum peril, defeats it and liberates his community.

A *Rags to Riches* plot tends to follow the pattern whereby the protagonist experiences the contempt of others (often after a happier opening), and then a number of events – during which he may seem to lose everything again on the path to maturation, liberation and fulfilment. Examples include *The Ugly Duckling*, *Aladdin*, *Cinderella*, *Dick Whittington*, *David Copperfield*, and *My Fair Lady*, and it underlies biblical stories including those of Joseph, Moses, and Jesus (noting again that multiple plot types can combine in single, complex stories). *MacBeth* is a classic dark inversion of this pattern, in that a respected figure begins in high esteem and is gradually corrupted. Emotionally, *Rags to Riches* will involve sadness and possibly humiliation early on, and will climb, albeit with setbacks, all the way to the conclusion.

In *Rebirth*, the protagonist often grows up happily but is then subject to some kind of promise or curse whereby his life, and usually the wider environment, is frozen in time. The wintry state can be imprisonment, spiritual confinement, sleep, sickness, or some other enchantment. A hero eventually restores balance, usually after a number of failed rescue attempts, and it is this symmetrical restoration to some Golden Age that distinguishes *Rebirth* from the more linear pattern of *Rags to Riches*. Examples include *The Sleeping Beauty*, *Snow White*, and *Beauty and the Beast*.

I will not deal here with the four remaining plots, because in the context of grand religious and cosmological narrative, *Voyage and Return*, *Comedy*, and *Tragedy* are rare as dominant forms rather than as components within a broader scheme, while *The Quest* tends to incorporate

many others.⁶⁰⁷ However, it is important to note that all seven – with the exception of the classic inversion that is *Tragedy* - share a similar affective topography because of their basis in the monomyth and in the basic homeostatic pattern. There is usually the description or at least the implication of an initial, happy state. In terms of Panksepp's mammalian emotional systems, such states are founded upon PLAY and the oxytocin-based belonging underpinning CARE. The destabilising event and its aftermath usher in combinations of FEAR and GRIEF that often give way to RAGE. As the protagonist begins to resist or to fight back the SEEKING system is clearly engaged, but within a context where the struggles in any mildly complex mid-story will consist of various hopes and setbacks. A happy ending signifies the restoration of CARE and PLAY.

I stress again that this is not to reduce the astonishing variety and versatility of story, because the patterns are infinitely fertile, like musical form is to repertoire. This is indeed viewing narrative from a very high altitude, but overlaying Pankseppian systems in this way nevertheless allows some important observations. First, the role played by stories in situating and managing emotions is exposed in more complex ways than merely the homeostatic process of the monomyth. As Ernst Cassirer writes, in engaging with myth, we 'begin[s] to learn a new and strange art: the art of expressing, and that means organizing, [our] most deeply rooted instincts, [our] hopes and fears.'⁶⁰⁸ This sits within the broader capacity of religion to 'educate the emotions,' in the terms of Loyal Rue.⁶⁰⁹ A second observation is that it is clear that SEEKING, as the essential mammalian motivational system, propels the resolution of human difficulties and hints at the centrality of this affective circuit for countering the Problem of Demotivation.

⁶⁰⁷ One might speculate what would be contained in great naturalist quest narratives on the scale of *The Lord of the Rings*.

⁶⁰⁸ Ernst Cassirer, *The Myth of the State* (New Haven: Yale University Press, 1948), p.48. Cassirer was referring to political myth, but the point holds more broadly.

⁶⁰⁹ Rue, *Religion Is Not About God*, pp.78-124

The Affective Contours of Existentialism and Connectionism

There are, however, some subtle affective differences between *Overcoming the Monster*, *Rags to Riches* and *Rebirth*. I will assess these with reference to the largely unconscious choices made by existentialist and connectionist authors. I will then re-engage Lisa Sideris's critique of RN, on the basis that she concentrates her fire on the *Rags to Riches* plot, and on a particular form of it at that.

The influence of the *Overcoming the Monster* plot is particularly evident in existentialism. What, though, is the monster? Being forms of naturalism, both existentialism and connectionism tend to lack grand agential forces like deities. However, while absence itself has the potential to be a meaningful adversary, existentialists usually identify more tangible enemies to be defeated, whether manifestations of an uncaring cosmos (such as cancers) or some human group or philosophy that purportedly stands in the way of its fundamental beliefs in freedom, truth, and Enlightenment progress (such as religious extremism).

As I mentioned above, at the conclusion of *The Selfish Gene* Richard Dawkins places us at the moment in the *Overcoming the Monster* plot when we are faced with the blunt reality of the antagonistic force – our despotic genes, operating within a callous universe – and invites us to resist: 'We, alone on Earth, can rebel against the tyranny of the selfish replicators.'⁶¹⁰ This exemplifies the bracing, Nietzschean existentialist juxtaposition between the void and the opportunity to make meaning. It is also possible to frame this as an early point in the *Rags to Riches* plot where the protagonist has been humiliated but begins to see a chance for an upwards path.

⁶¹⁰ Dawkins, *The Selfish Gene*, p.201

This simultaneous *Rags to Riches* interpretation illustrates why plot schemes like Booker's, while analytically valuable, describe familiar clusters of narrative elements that can be interwoven, rather than rigid forms. Carl Sagan's *Pale Blue Dot* (1994) is worth considering here, not just for its blend of forms but for creating a strong sense of purpose without monsters.⁶¹¹ His conception of humans as intrepid explorers reinforces a sense of separation from, rather than embeddedness within, an ecological or indeed cosmic matrix – we are 'in' rather than 'of' the universe - and thus places him closer to existentialism. But there is less sense of an uncaring cosmos to be resisted – he does, after all, advocate a human future in space. His call for us to populate the cosmos can be interpreted as midway through a *Rags to Riches* plot, whereby we are encouraged to take the next step in our development as great travellers.

However, the dominant form in *Pale Blue Dot* is Rebirth, which Sagan deploys on a truly cosmic scale: we enter the narrative during the 'sleep' phase, having temporarily abandoned our (pre)historic human identity as travellers and pioneers, and Sagan offers the prospect of rediscovering that identity but as explorers of distant worlds. The opening chapter ('Wanderers: An Introduction') links our ancient instinct to travel – 'the zest to explore and exploit' – to the vision of a human future in space.⁶¹² Panksepp would say that this zest is the dopaminergic SEEKING system at work.

In this dominant *Rebirth* plot, Sagan – despite his existentialist leanings - reflects the favoured form of the connectionists. The *Overcoming the Monster* plot is barely tenable for connectionism at the cosmic level, not just because of the general lack of grand agential beings in RN, but because of connectionism's sense that the universe is essentially benevolent but being

⁶¹¹ Carl Sagan, *Pale Blue Dot: A Vision of the Human Future in Space* (New York: Ballantine Books, 1997)

⁶¹² Sagan, *Pale Blue Dot*, p.xvi

ruined by human behaviour. Hence, the enemy is always situated more locally, and nearly always the destructive or ignorant behaviour of specific cultures, organisations, and economic models. Unlike in existentialism, that monster is almost invariably set within a broader *Rebirth* narrative whereby a Golden Age has been lost but might be regained. While *Overcoming the Monster* and *Rags to Riches* are suited to more linear tales of progress, *Rebirth* is fundamentally about reversal to a better time or way or living. This is why *Rebirth* is so instinctive for the ecological movement and why it is particularly relevant as a counterweight to Sideris's critique of the more linear, triumphalist, *Rags to Riches* plots that she associates with the 'new cosmologists.' I will now therefore assess its potential in more detail.

Rebirth

The *Rebirth* narrative is easily challenged on factual grounds because the very existence of times and places where our ancestors were blissfully and sustainably ensconced in a natural matrix is highly debatable. Yet *Rebirth* is an irresistibly potent form for several reasons: its ideal state is easier to convey and feels more achievable because of the suggestion that we have enjoyed it in the past; it contains within its broader form a monster against which our negative affective energies can be directed; and it surmounts the problem noted by Alexa Weik von Mossner that utopian descriptions – or extended connectionist appeals to wonder - can become tedious unless threatened.⁶¹³ As mentioned above, *Overcoming the Monster* and *Rags to Riches* can still be effective – just - without the initial happy state being elaborated, although many choose to develop it.⁶¹⁴ In *Rebirth*, however, there is always an emphasis on the lost condition, and by augmenting the initial 'balance' of the balance-imbalance-balance arc, *Rebirth* plots reap the affective advantages of portraying the lost – and thus desired – state.

⁶¹³ Von Mossner, *Affective Ecologies*, pp.177-78

⁶¹⁴ For example, in both *The Hobbit* and *The Lord of the Rings*, Tolkein begins by conveying the tranquillity of the Shire, while *Rags to Riches* tales may describe the happy early life of the orphan.

A famous example drawn from recent UK politics illustrates the power of the *Rebirth* form. In *Brexit: The Uncivil War*, the television drama featuring Dominic Cummings's role in the 'Vote Leave' campaign, there is a scene where he suddenly realises the affective punch achieved by adding the single word 'back' to his slogan: not 'Take Control' but 'Take Back Control.' This immediately changes the pattern from imbalance-balance to balance-imbalance-balance: there was a Golden Age when you had control, it was taken from you, and now you can take it back. And in suggesting that control has been stolen, this helpfully implies a wrongdoing and the existence of an enemy (the European Union) against which negative affects can be directed. When RN uses the full cosmic timescale it is difficult to locate that initial state of balance; far easier to locate it in allegedly sustainable hunter-gatherer ways of life, with the imbalance caused by philosophical error or callous neglect in the interim, whether individual or collective, political or corporate.

David Abram shows how a *Rebirth* plot can be skilfully deployed without falling into the obvious trap. While Sideris emphasises his direct sensory experience with nature, Abram provides not just a way to imagine ourselves into our surroundings, but a story about how we became estranged from those surroundings and how we might begin to re-engage. We enter *The Spell of the Sensuous* and *Becoming Animal* in the 'sleep' phase: the oral cultures that once prevailed around the planet connected themselves to the Earth and to other life, but this has been lost in alphabetic civilisations and we are in a frozen state, cut off from the intimate relation that we used to enjoy with our surroundings. Animism, for Abram, is not something historical that we have left far behind, but our universal inheritance that becomes dormant in childhood via the processes of literacy and enculturation. He shows that there exists the possibility to reawaken our

sensibilities, offering the prospect of acting heroically on behalf of the planet of which we are a part.⁶¹⁵

However, Abram is not naïve about some of the hardships endured by the cultures possessing the kind of ecological relationships that he advocates, nor about the extent to which these ways of life can be reintroduced at scale; his proposed revolution is situated more within individual minds than in external socio-political upheaval. Particularly effective, and distinctive, is how he seeks to make us *feel* the current and ideal states through techniques such as vivid simulation: there is a big difference between merely describing the predicament and promise on the one hand, and using language that immerses us in the contrasting experiences of being frozen and awakened on the other.

As I noted in Chapter 2 in the context of Michael Burke's model of the reading process, an important portion of a narrative's affective power derives from unconscious connections made by the reader between the current narrative and others. Whether reflecting *Rebirth* or another form, authors do not write in a vacuum, but are consciously or unconsciously influenced by numerous existing stories. In *Word, Dialogue, and Novel*, Julia Kristeva coined the term 'intertextuality,' explaining that whenever we read a text, there is a relationship between us and the author, and a relationship between the text and other texts.⁶¹⁶ My focus so far has been on the *shape* of naturalist narratives, but however firm their views, naturalists are like anyone else in being influenced not just by the shape of the narratives dominating their culture, but by their *contents* too. It is not just plot forms, but specific cultural myths that may lay behind feelings of cognitive coherence and resonance (or, conversely, dissonance). This may constrain the options

⁶¹⁵ e.g. 'The brain itself is an introjection of the Earth, an analogue or avatar of the planet happily riding atop our spine.' Abram, *Becoming Animal: An Earthly Cosmology*, p.128 (footnote).

⁶¹⁶ Julia Kristeva, 'Word, Dialogue, and Novel,' in Julia Kristeva, *Desire in Language: A Semiotic Approach to Literature and Art*. Leon S. Roudiez (ed.) (New York: Columbia University Press, 1980)

for RN, but it also offers the opportunity to intentionally co-opt successful existing narrative patterns and motifs.

There are some culturally significant *Rebirth* narratives that are so well entrenched that religious naturalists using this form are probably already influenced by them, and whose potency could be redirected more intentionally. Consider, for example, two biblical versions of the *Rebirth* plot which have had a vast global influence across numerous societies, and continue to reverberate today. Norman Cohn's *The Pursuit of the Millennium* (1957) defined a number of features shared by millenarian movements,⁶¹⁷ and various later authors have discussed how these characteristics reappear in modern times in a number of guises. Some pinpoint the Revelation of St John as a particularly influential source: a story of a chosen people under attack who rise up and, in a cataclysmic battle, usher in a long Golden Age, often numbered in thousands of years. This pattern unites apocalyptic Christianity, Islamist extremism, Nazism, and radical brands of Communism.⁶¹⁸

A second highly influential *Rebirth* myth is that of the Exodus, portraying bondage in Egypt and a journey to a Promised Land of the ancestors. Martin Luther King intentionally saturated his speeches with related text and imagery, reframed around the oppression of, and vision for, Black Americans. Similarly, Manuel Vásquez reported that Brazilian immigrant populations in Florida situate their experiences using narratives of exile, pilgrimage, homecoming, and the impending reign of God - cognitive and affective frames providing meaning for both migration and settlement.⁶¹⁹ Religious naturalists can similarly piggyback on

⁶¹⁷ Norman Cohn, *The Pursuit of the Millennium: Revolutionary Millenarians and Mystical Anarchists of the Middle Ages* (London: Pimlico, 2011)

⁶¹⁸ See e.g. Gray, *Seven Types of Atheism*, p.73;

John Berman, *Terror and Liberalism*. New York and London (W. W. Norton and Company, 2004), pp.46-51

⁶¹⁹ Vásquez, *More Than Belief*, p.301

well-established cultural myths, either explicitly (as did Martin Luther King) or by invoking them unconsciously in readers, which may be a more effective strategy for nonbelieving audiences.

Sideris and Narrative Discourse in RN

We can now see, in returning to Sideris, that her criticism is of one particular plot form within RN, whereas others have been produced and there is the potential for yet greater variety. A longer project would be to investigate that potential variety in a systematic manner, which might begin with H. Porter Abbott's distinction between *story* (the sequence of events) and *narrative discourse* (how that story is conveyed).⁶²⁰ The same series of events over time – the same plot, if you like – may be infinitely malleable in terms of where we start, which direction in time we travel, what we emphasise, whose point of view we take, and so on, and these can have different consequences for affects and the ways in which they are juxtaposed.⁶²¹ The constraints of space means that I will focus most closely on Sideris's particular critique.

Sideris suggests that:

From the standpoint of narratology, an 'evolutionary epic' is therefore 'an oxymoron' – at once a fixed epic and evolving science. Moreover, epic seems the wrong genre for a story that is meant to orient us to the future, to what comes *next*.⁶²²

⁶²⁰ Abbott, *The Cambridge Introduction to Narrative*, p.13

⁶²¹ Consider how the affective topography of the 2020 US election would have been different had mail-in votes been counted before in-person votes, rather than vice-versa. The outcome would have been the same, but Joe Biden would initially have been ahead with Donald Trump then clawing back, leading to a different affective structure. Source: Richard Osman on *The Last Leg* (Channel 4, UK), broadcast 6th November 2020.

⁶²² Sideris, *Consecrating Science*, p.165 (emphasis in the original)

Her issue is with *Rags to Riches* narratives in which the 21st century is at or near the culmination. Affectivity is indeed bound up with moment, as the ‘Take Back Control’ example demonstrated. Even religions in which the greatest events have already take place, or which claim that there will be no further revelations, offer today’s believers a galvanising role such as bringing a desired state to fruition. RN authors beyond the ‘new cosmologists’ often do meet Sideris’s demand to place us in a mid-plot predicament rather than on a podium: the monster is yet to be overcome; we may have dispensed with our rags but there are more riches to attain; we are still in a frozen state but can awaken ourselves.⁶²³ And even within the ‘new cosmology’ corpus some of her claims do not easily stand up. For example, *The Great Work* (1999), written by one of her targets, Thomas Berry, outlines an extremely difficult programme that has barely begun.⁶²⁴

The harm of a *Rags to Riches* plot also depends on what constitutes the ‘rags’ and the ‘riches.’ For existentialists it is often the case that the riches are the triumph of human evolution or Enlightenment progress tropes such as our cognitive, technological, and pain-relieving achievements, and there is a need for caution here for the reasons Sideris explains. However, connectionists, who tend to use the *Rags to Riches* form when they are not summoning *Rebirth*, often identify broader emergent complexity as their riches. In *The Universe Story* (1992), Thomas Berry and Brian Swimme set *Rags to Riches* at its largest possible scale, namely the cosmos in its maximum spatiotemporal extent. Our current position is part way through the plot - a universe still unfolding, and that unfolding process being one with which we are not merely entwined but have influence. In the emphasis on belonging in the universe and on the suspense of its unfolding, they are activating CARE and SEEKING systems, thereby broadening the affective palette beyond static paeans to wonder but short of that enabled by more adversarial *Overcoming the Monster* and *Rebirth* plots. Their use not just of anthropomorphic language but of overt

⁶²³ It is, of course, possible to view this as a commercial inevitability: for a book to survive the battle for attention (both in the purchasing and the reading phases) it may be necessary to establish a current crisis.

⁶²⁴ Thomas Berry, *The Great Work: Our Way into the Future* (New York: Three Rivers Press, 1999)

personalisation to trigger CARE responses – such as naming the ancestral supernova Tiamat and venerating her as a mother making the ultimate sacrifice – may alienate those with stricter scientific scruples.⁶²⁵ However, my own reading of these authors, who Sideris considers ‘new cosmologists,’ is that they are less triumphalist than Sideris claims.

Even if it avoids triumphalism, *Rags to Riches* can remain problematic if it views rags as something to outgrow. Berry and Swimme set up a contrast between the relatively inert matter of the early universe and its current incarnation as the substrate for our own intelligence, as well as offering the prospect of yet more complex and wonderful manifestations in the future. At their ultimate cosmic scale this might work, but in many instances it presents a problem because RN nearly always wishes to elevate the material (as we have seen, in order to counter the Problem of Alienation) and even, in some forms, to impute some level of proto-consciousness to matter. Moreover, much of the struggle towards cosmic riches has been blind and unconscious - or at least involving nonhuman forms of consciousness – leaving less opportunity to celebrate human heroism, at least at this point in the tale.

This notion of heroism brings me to some other affectively relevant narrative choices for religious naturalist authors, some of which Sideris observes. Sideris notes the problem that stories need heroes, and does not feel that the ‘new cosmologists’ are responding fruitfully. She criticises Edward O. Wilson for identifying the human mind as such in *On Human Nature* (1978),⁶²⁶ and highlights a conference at which ‘some voiced misgivings that heroic consciousness might encourage destructive forms of individualism and capitalism that have compromised planetary health.’⁶²⁷ These are valid concerns, but do not exhaust more benign

⁶²⁵ Swimme and Berry, *The Universe Story*, pp.35-36

⁶²⁶ Sideris, *Consecrating Science*, pp.73-4, referring to Edward O. Wilson, *On Human Nature* (Cambridge, MA: Harvard University Press, 1978)

⁶²⁷ Sideris, *Consecrating Science*, p.163

possibilities. And here it is important to note that narrative choices shape the opportunities for, and the implicit heroism of, the actions that human beings can take in response to their predicament.

At what scale does the plot operate? Is it mainly concerned with the entire universe, with the Earth and life, with our species, with written history, or with individual human beings? The choice carries affective opportunities and risks. If focused on the cosmic end, it can easily be too abstract, too remote from daily life, and fall prey to the kind of disconnection problem often levied against deism. However, if limited to the scale of ourselves it can seem unimportant in the overall scheme of things, and arguably fail to embrace what we have learned about the vast space and time of the universe. The optimal pattern for engaging readers and listeners is well known, and used everywhere from the great religions to corporate visions: the scale should be substantial enough to galvanise and to out-compete alternatives, but the individual human being must be connected to it and be able to influence it.

Affects also flow from how contrast is deployed. Composers and novelists understand the affective qualities of light and shade, their sequencing and juxtaposition. They appreciate that increases in tension or volume are possible only if preceded by something less intense, and vice-versa (the greater the anxiety, the more impatient the pages are turned and the greater the relief).⁶²⁸ Religious narratives often co-opt the same pattern-related affects. Charles Taylor observed this in the Christian context:

The point of harping on the helplessness and depravity of mankind was to show into the starkest relief the power and mercy of God, who could bring about a salvation which was

⁶²⁸ Oatley, *The Passionate Muse*, p.57

utterly beyond human power and, what is more, still wanted to rescue his unworthy creature beyond all considerations of justice.⁶²⁹

Such contrasts can be deployed within the predominant plot forms used by religious naturalists. The more difficult our predicament, the more that actions taken towards its alleviation assume a heroic hue. A connectionist *Rags to Riches* plot will be more impressive where the rags of our origins are more tattered or the riches of our present and future state more abundant. An existentialist *Overcoming the Monster* plot will be more gripping where the forces of antagonism are more formidable or the actions of the protagonist more courageous. A *Rebirth* will be more compelling where the sleep is deeper or the reawakened condition more intense.

In confronting the Problem of Demotivation, religious naturalists should be aware of these affective implications of their narrative choices, and also of the pitfalls that Sideris identifies. In combination with an appreciation of different plot forms, they can map and evaluate the range of narrative options available. While I concur with most of Sideris's analysis of the risks of mythopoeic projects, I do not think these mean that we should abandon stories that try to grapple with what scientific discovery has illuminated about our origins and our situation in relation to vast expanses of space and time.

The Problem of Human Characters and Simulation

I have provided an account of how narratives orchestrate the affective systems described by Damasio and Panksepp, in order to challenge Sideris's critique of one particular form of RN narrative. I now wish to examine embodied simulation and the challenges and opportunities for

⁶²⁹ Charles Taylor, *Sources of the Self: The Making of the Modern Identity* (Cambridge, MA: Harvard University Press, 1989), p.215

such plots in engaging it. I will not discuss image schemas here, but raise them in the conclusion to the thesis as a potential area for further research.

I have agreed with Sideris that anthropocentrism is best avoided, with existentialist RN more often at fault here than connectionist RN. However, the desire for heroism cannot be so easily brushed off where defined broadly as esteem – from self or others - acquired through one’s effort toward some challenging purpose. As Owen Flanagan suggests:

We want human life to possess all of these characteristics – structure, plot, theme, meaning. We want it to enliven our hearts and minds. In the drama of real life we not only want to be ourselves, we want both our character and the larger plot to be genuinely meaningful.⁶³⁰

Compelling stories have protagonists, other characters, and relations among them, and our emotional responses depend to a large extent on how authors craft these entities and their interactions.

There are some genuine difficulties for RN when it comes to heroism - and indeed to the status and role of human beings - because scientific commitments impose certain constraints on narrative entities and their interactions. Sideris does not elaborate these constraints, at least in the context of affect rather than ethics. I will now attempt to define them before turning to the mitigations offered by embodied simulation. The constraints pertain to two entities: what constitutes the human – or human-related – protagonist, and what in the broader universe constitutes that with which the protagonist enters into relation. Note that, while I have agreed

⁶³⁰ Flanagan, *The Problem of the Soul*, pp.xiv-xv

with Midgley and Sideris that any such relation is a human choice and not given by science, I have also proposed that the choice is instinctive at the level of approach/avoid. But the instinct goes further than that: a central claim within the cognitive science of religion involves the ubiquitous human proclivity not just to anthropomorphise but to posit the existence of agents.⁶³¹ Indeed, as Justin Barrett's experiments demonstrate, even those whose reflective views of god are not anthropomorphic tend to use very anthropomorphic understandings to make sense of stories involving him.⁶³² To a significant degree, then, we cannot help but posit agents, and while the particular understanding of these is a human choice and not given by science, it is important to understand what is involved in that choice.

For RN, who is the human – or human-related – protagonist? RN may be wary of lending special importance to specific individuals for fear of hagiography, and of overly resembling the traditional religious creeds with which naturalists may seek clear separation. But in doing so, they relinquish the obvious source of well-defined protagonists with agency. An alternative is humankind as whole, or the human mind (as Edward O. Wilson proposes),⁶³³ but this can easily slip into an unhealthy anthropocentrism. Given RN's common emphasis on the interconnections between different species, many prefer to concentrate on life itself, or on the entire planet, but this is to use increasingly more abstract or amorphous entities.

What in the broader universe constitutes that with which that protagonist enters into relation? If the protagonist is already broad – life or Planet Earth, for example – this will be pushed even further afield. This may be consonant with the frequent RN inclination to celebrate

⁶³¹ e.g. Boyer, *Religion Explained*,

Patrick McNamara, *The Neuroscience of Religious Experience* (New York: Cambridge University Press, 2009); Justin L. Barrett, *Cognitive Science, Religion, and Theology: From Human Minds to Divine Minds* (West Conshohocken, PA: Templeton Press, 2011).

Recall also that the animistic orientations of hunter-gatherer societies entail personification and agency by definition.

⁶³² Barrett, *Cognitive Science, Religion, and Theology*, pp.136-37

⁶³³ Wilson, *On Human Nature*

the grandeur of the largest possible scales of space and time. The universe itself is sometimes chosen, or a more specific attribute of it, such as alleged forces of creativity. But it is worth pausing to note that the contrast with the Judaeo-Christian tradition, for example, is stark: here a much clearer relation is posited between human beings and God, with the latter often attributed human-like characteristics, and the nature and dynamics of the human-divine relationship a powerful enduring theme.

These difficulties for RN prompt a number of observations. One is that, when set in the full sweep of human experience, this attempt to establish relations with vast amorphous complexes rather than with beings or agents is a curious aspiration. Another is that RN's emphasis on human beings as part of life, of the planet, of the universe itself – especially in connectionism - complicates these options for social relations. Here one finds authors using humankind, and ultimately the individual reader, as a protagonist by virtue of his ability to represent the more amorphous whole. In *Deeper than Darwin* (2003), for example, John Haught identifies life as the protagonist, but one which experiences a series of transformations, eventually manifesting itself as humankind.⁶³⁴ It is a similar perspective to that of Thomas Berry, for whom:

The Earth [the protagonist] that directed itself instinctively in its former phases seems now to be entering a phase of conscious decision through its human expression. This is the ultimate daring venture for the earth, this confiding its destiny to human decision, the bestowal upon the human community of the power of life and death over its basic life systems.⁶³⁵

⁶³⁴ John Haught, *Deeper than Darwin: The Prospect for Religion in the Age of Evolution* (Boulder, CO and Oxford: Westview Press, 2003), discussed in Barbara Herrnstein Smith, *Natural Reflections: Human Cognition at the Nexus of Science and Religion* (New Haven and London: Yale University Press, 2009), p.100

⁶³⁵ Thomas Berry, 'Human Presence,' in James E. Hutchingson (ed.), *Religion and the Natural Sciences: The Range of Engagement* (Belmont, CA: Wadsworth Publishing, 1993), pp.391-92

It is a tactic that tries to channel the vast, less tangible phenomena of life and the planet more directly through our individual, feeling selves than is the case where those phenomena are described at a greater distance. This need not be anthropocentric if nonhumans are afforded the same status as protagonists.

Most relevant to my theme, though, are the affective challenges that emerge from these social issues. In mammals including ourselves, biological affective systems have developed in social contexts. They have, of course, also evolved in the context of other animals, weather phenomena and other nonhuman entities that may prompt affects, but arguably the human social environment was paramount. Many of the emotions that lend stories their affective richness, from simple emotions such as fear to more complex ones such as empathy, are tuned for interactions with humans, or at least agencies upon which we project human characteristics.

Recall that my analysis of embodied simulation in Chapter 3 concluded that it is less ‘on’ versus ‘off’ but varies in kind and intensity. The experimental evidence is that simulation is most rich where stories involve other human beings, and may depreciate as soon as another person seems different from ourselves. However, the actions and perhaps implied emotions of nonhumans and inanimate objects can still be simulated by direct or imagined perception. We use our perceptual apparatus to imagine the kinds of abstract or amorphous entities common to naturalist texts, and that this arguably involves us as human characters even where the author does not describe any. In the hands of gifted authors like David Abram, the nonhuman can therefore be suffused with simulation while maintaining scientific scruples. This enduring simulation in the absence of human characters invigorates all manner of naturalist imaginaries but poses a greater problem once these are woven into narratives. In other words, the problem is

greater once we are orienting ourselves to time and engaging with purposes than merely orienting to space.

In Chapter 2, I offered an account of affect in the reading process. Keith Oatley's description of that process hints at how fundamental the challenge will be for any narrative that avoids human characters, or at least lacks entities resembling them. Consider just a few of the numerous ways in which reading about other people prompts affective responses, and which naturalism thereby risks losing. Through empathetic identification with a character, a reader substitutes the character's goals and plans for his own and mentally enacts the plot, but it is the reader's own emotions that arise in relation to that plot. The reader will experience resonances between parts of the story and her own memories – including emotional memories - and the more the reader shares qualities with that character, the more emotional memories are likely to be triggered.⁶³⁶ Jonathan Haidt's research shows that if one reads in a story about someone being generous or altruistic, one's emotional experience is likely to be 'happy' and 'elevated.'⁶³⁷

The optimal position for RN is to harness the affective power of *anthropomorphism*, but to do so intentionally in such a way that avoids *narrative anthropocentrism*. While I cited George Levine in Chapter 3 as having articulated a purist position that rejects anthropomorphism, his position is more nuanced than it may at first seem:

An enchanted, secular vision seeks a feeling for the organism, values the extraordinary differences that mark the range of organic life, and depends on imagination

⁶³⁶ Oatley, *The Passionate Muse*, pp.177-80

⁶³⁷ Jonathan Haidt, 'Elevation and the positive psychology of morality,' in Corey L. M. Keyes and Jonathan Haidt (eds.), *Flourishing Positive Psychology and the Life Well-Lived* (Washington, D.C.: American Psychological Association, 2003), pp.279-89.

(anthropomorphic, perhaps, but not anthropocentric), honoring difference, recognizing penguins for penguins.⁶³⁸

He would therefore agree with Alexa Weik von Mossner that ‘reading that the snow *bends* and *trims*, lightning *strikes*, and avalanches *mow down* the forests will activate the somatosensory and motor cortices in readers’ brains,⁶³⁹ and we can and should harness these visceral, anthropomorphic qualities of language. Where many of a scientific persuasion begin to feel uneasy is where Brian Swimme, a prominent religious naturalist, uses formulations such as ‘Gravity is Love.’ And on another occasion, already mentioned above, he refers to the supernova whose destruction released the heavier elements found on Earth – including in all its organisms – as Tiamat, an ancient Mesopotamian goddess, in order that he can humanise that original creative event in terms of maternal pain and sacrifice. He regrets a scientific worldview that has favoured ‘mechanomorphic’ language, and is content, for example, to refer to carbon as the ‘thinking element’ or ‘the element of life’ given what carbon does in certain contexts.⁶⁴⁰

This is to some extent a matter of taste (Swimme has evidently struggled with very different audience reactions)⁶⁴¹ but recall my commitment in this thesis to test what ACAN advocates would regard as a worst case scenario, that is, a strict, epistemically ungenerous form of naturalism. The direct use of metaphors which are scientifically false falls outside what is permitted in this context; the use of anthropomorphic language for nonhuman entities does not. When it comes to addressing both the remoteness and abstraction at the core of the Problem of

⁶³⁸ Levine, *Darwin Loves You*, p.274

⁶³⁹ Von Mossner, *Affective Ecologies*, p.35 (emphases in the original)

⁶⁴⁰ Swimme and Berry, *The Universe Story*, pp.35-36; Swimme, *The Universe is a Green Dragon*, pp.64-66, pp.77-79.

⁶⁴¹ For an amusing account, see Ursula Goodenough, ‘Reflections on Scientific and Religious Metaphor,’ *Zygon* 35(2), 2000, p.234

Alienation and the social issues involved in the Problem of Demotivation, anthropomorphic resonance can help, and need not undermine the commitment to a science-based cosmology.

In sum, there may be many affects that tend to accompany social interactions or observations which typical human stories co-opt, but which RN, if it eschews beings and agents, will forego. By excluding beings or agents, it risks narrowing its emotional bandwidth and producing lacklustre narratives. The avoidance of anthropomorphic language for nonhuman entities may undermine affect yet further. And if affective richness and variety are undermined, this may reduce the range of people to whom RN narratives appeal. If many religious naturalist texts are little more than paeans to wonder, for instance, RN may not be meaningful for those who are less able or inclined to respond in such ways, and who find stories with strong characters and purposes more compelling.

Opportunities

I believe that the best response to these challenges is, ironically, already intimated by Midgley and Sideris themselves. While they do not believe that some ultimate purpose is provided by some deity or by science, Midgley was very committed to the promotion of the Gaia hypothesis in later life, while Sideris is clearly motivated by the ethics of different types of wonder and different narrative forms. In other words, once one has chosen a purpose it can be still be galvanising, even if it has no ultimate cosmic legitimacy. And having chosen a purpose, one can enlist embodied simulation to align readers behind it, thereby counteracting the Problem of Demotivation. Put another way, simulation is critical in the transition from merely reading or

talking about myth to ‘living within a myth’ or ‘living mythically.’⁶⁴² It operates to enable the reader to assume a role within the story.

As Midgley and Sideris would doubtless argue, it is possible to play a part in some grander scheme while avoiding the anthropocentrism charge. One need not overstate the significance of the human role, let alone attribute some external warrant to it. And one can also reduce the anthropocentrism risk by contextualising the human purposes within all the parts played, albeit with different types of awareness and intention, by nonhumans.

How exactly does simulation enable this? It is a commonplace that a key function of stories from very early in human history was to introduce listeners to difficult scenarios in a relatively safe form and to prepare them, through the action of heroes and through moral lessons, for how they might act should a similar situation actually arise. Affects not only motivate, but can rehearse the reader for the desired action. For example, if David Abram’s purpose is to advance ecological protection by promoting ‘rapport’ with the ‘earthly cosmos,’⁶⁴³ the likelihood that we will join him (or be further galvanised if we already have this goal), is increased by his having deepened our physical responses to the rest of the planet, especially if those connections break into consciousness.

Recall my description in Chapter 2 of the processes of perceptual, emotional, and motor simulation. I need not repeat that here, but highlight some specific aspects relating to the question of how AEC helps us to prepare to enact some purpose. I defined *perceptual* simulation as our visual, auditory, olfactory, and tactile faculties, when engaged ‘offline’ in imagination. Its role in preparing specific action is well understood and applied intentionally in a wide range of

⁶⁴² Ford, *The Search for Meaning*, pp.33, 35, 51-52

⁶⁴³ Abram, *Becoming Animal*, p.278

settings. High-performance sportspeople, musicians and orators are among those who use visualisation techniques to rehearse, though ‘visualisation’ is generally only one part of a deliberately multi-sensory simulation technique, which may include such elements as hearing the crowd or feeling the air. These simulation techniques may also involve anticipating the feelings one might be experiencing – in other words, *emotional* simulation. The importance of all this preparation is that when it is ‘for real,’ the performer is more likely to be able to retain their focus, having already simulated the expected environment - and perhaps a variety of possible external conditions – and simulated their affective response to those scenarios.

Note that emotions are not just about evaluating and marking environmental stimuli in Damasio’s terms; they have attached action tendencies. Their selection during evolution was probably based not just on the evaluations they provided but on the patterned behaviours following from particular emotions.⁶⁴⁴ This is important for understanding how authors instil motivation in readers: authors can provoke emotions that bias readers towards acting in furtherance of the purpose being advocated. Indeed, a basic lesson of rhetoric since Aristotle, and broader communications training today, is that in order to motivate people to act one generally needs to create emotion – that is, to deploy *pathos* rather than simply the *logos* of rational argument.⁶⁴⁵ Depending on what naturalists wish to achieve, they may use emotional simulation to garner sympathy towards someone or something, or to prompt guilt, or to feel anger at oneself or others, and thereby motivate them for the purpose proposed.

Motor simulation and its attendant mirror neurone system (MNS) would have been evolutionarily adaptive by helping certain animals to learn, to prepare for action, and to

⁶⁴⁴ Rue, *Religion Is Not About God*, pp.104-5

⁶⁴⁵ Aristotle, *The Art of Rhetoric*

understand the actions of others viscerally.⁶⁴⁶ But are motor simulations always unconscious? And does this matter for the motivation of the person concerned? David Freedberg and Vittorio Gallese, important figures in MNS research, report that some observers of artworks claim to experience physiological responses that imitate the motion seen or implied, or the gestures assumed to have been made by the artist.⁶⁴⁷ One explanation is provided by George Lakoff and Mark Johnson:

Simulation, when ‘vivid,’ is the actual activation of motor programs with input to the muscles inhibited, which results in the ‘feel’ of movement without moving. The experience of such a ‘feel’ is a form of empathetic projection.⁶⁴⁸

This is only one component of the human response to art, which may engage numerous affective systems and vary widely between individuals. But the specific point here is that if we give scholars such as Freedberg, Gallese, Lakoff, and Johnson the benefit of the doubt, it appears that some people may be conscious of motor simulation in some circumstances.

Even if motor simulation is generally unconscious, its workings may contribute to motivation in ways that can further the purposes promoted by an author. The kinds of high-performance rehearsal techniques discussed above may also include priming the muscles to act as imagined. Even without moving – without training or practicing in the ways usually understood – an athlete or musician can improve actual performance of motor tasks. Indeed, regularly spurring motor simulation in this way can even strengthen actual muscle performance to a significant and

⁶⁴⁶ There are phylogenetic and ontogenic arguments for why hearing or reading certain language is itself enough to prompt motor simulation. For the former, some theorists propose that language evolved from gestures (e.g. Scorolli, ‘Embodiment and Language,’ p.130). For the latter, there is the possibility that specific words become associated with specific actions in childhood, such as hearing the word ‘jump’ repeatedly when learning the motor movements for jumping.

⁶⁴⁷ Freedberg and Gallese, ‘Motion, Emotion and Empathy in Esthetic Experience’

⁶⁴⁸ Lakoff and Johnson, *Philosophy in the Flesh*, p.565

measurable degree.⁶⁴⁹ Similar processes are at work in speeches, where the ‘call to arms’ at the peroration involves preparatory simulation – perceptual simulation of the proposed ‘vision,’ emotional simulation as the necessary impetus to act, and perhaps motor simulation where the nature of that proposed action is described and thus rehearsed in an albeit immobile body.

Consider Abram’s conclusion to *The Spell of the Sensuous*:

Only be really opening and offering ourselves to the local earth – unplugging ourselves from the digital thrall and stepping out to wander and bask in the scents drifting up from the night river, allowing the intersecting tones of this land (of its denizens and its solitudes) to recalibrate our organism – only thus do we begin to come to our senses and start to reckon the worthy use, and the misuse, of all our technologies.⁶⁵⁰

In this 2017 Afterword to the original 1996 publication, Abram is complementing his purpose to advance ecological protection with a call to consider the ways in which we should and should not embrace technology. As well as the rich perceptual simulation, there is the specific motor suggestion to ‘unplug’ and ‘step out to wander and bask.’ Even as we sit motionless, the relevant motor areas are activated. Benjamin Bergen goes so far as to suggest that:

Motor simulation is intrinsically about projecting oneself into a body – often someone else’s – and, when you simulate what it would be like to do things someone is described as doing, you’re taking their perspective, not merely in a visual way, but in terms of what it would be like to control their actions.⁶⁵¹

⁶⁴⁹ V. K. Ranganathan, V. Siemionow, J. Z. Liu, V. Sahgal, and G. H. Yue, ‘From mental power to muscle power – gaining strength by using the mind,’ *Neuropsychologia*, 42(7), 2004, pp.944-56

⁶⁵⁰ Abram, *The Spell of the Sensuous*, p.284

⁶⁵¹ Bergen, *Louder Than Words*, p.92

I am suggesting that the chances that we will be motivated to get behind the purpose Abram advocates is increased not only by the enticing imagined state offered by perceptual simulation but by our motor systems rehearsing the action he wishes us to perform.

If this seems to grant motor simulation too much significance, I should clarify that I do not assess it to be more significant than perceptual or emotional simulation in propelling action; indeed, I judge this unlikely. I do so because the roles of perceptual and emotional simulation are better established, and it is perhaps time to bring motor simulation under more scrutiny. It is also worth noting that some EC scholars define culture itself in terms of sensorimotor tuning: ‘We understand culture, that is, sensorimotor tuning, to infuse virtually all knowledge. Culture does not have domain-specific mechanisms of its own, but works through biases in interactional sensorimotor mechanisms.’⁶⁵² This further suggests it is worthy of greater attention in the analysis of religious and other texts.

Bergen referred to projecting oneself into another body, and I will turn now to this more direct inhabitation of characters that the three types of simulation enable. ‘Narrative texts can be considered instruction manuals...for the simulation of fictional consciousnesses.’⁶⁵³ However, these ‘blueprints’ for simulation are not confined to fiction; the affective processes operate for any character into whom we are projected. The fascination many have for biographies and autobiographies, for example, may be due to this physical inhabitation of another, especially one whose life we find intriguing. It will often be the closest we can come to experiencing that life for ourselves.

⁶⁵² Tamer Soliman and Arthur M. Glenberg, ‘The embodiment of culture,’ in Lawrence Shapiro (ed.), *The Routledge Handbook of Embodied Cognition* (London and New York: Routledge, 2014), p.211

⁶⁵³ Caracciolo, ‘Blind Reading,’ p.83

Note also the multiplicity of roles we can embody, as did a character in one of George R. R. Martin's fantasy novels: 'A reader lives a thousand lives before he dies...The man who never reads lives only one.'⁶⁵⁴ Graham Ward expresses a similar thought, reflecting upon:

the imaginative, mimetic means for both our identifications with and distancings from certain characters who, in giving us entry into a portfolio of emotions, environments, and situations educate our sensibilities, deepening and extending our own body maps, awaking different levels of emotional, cognitive, and somatic memory through exposure, over sometimes long periods of time.⁶⁵⁵

To 'educate our sensibilities' (or to 'educate our emotions,' in Loyal Rue's formulation), secular and religious myths alike must illustrate, through their characters, how the motivational force of affects can be channelled in the service of certain purposes.

In Keith Oatley's account, these abilities to 'create and run a simulation of ourselves in the social world' and 'mentally to multiply the roles we enter' bring distinct evolutionary advantages, including helping 'us to explain ourselves verbally to ourselves and others, and also to compose our minds.'⁶⁵⁶ We empathise with a character:

when, in response to the writer's invitation, the reader puts aside her or his own goals and concerns, insert the goals and plans of the character into his or her own planning processor, and mentally enacts the plot. The emotions that then occur are empathetic

⁶⁵⁴ George R. R. Martin, *A Dance with Dragons* (London: Bantam Books, 2013), p.495

⁶⁵⁵ Ward, 'Reading to Live,' p.9

⁶⁵⁶ Oatley, *The Passionate Muse*, pp.172, 176, 184

emotions in relation to the plot's plans, actions, and outcomes, not the character's but the reader's own.⁶⁵⁷

We achieve this through re-using our own memories and experiences. As EC scholar Marco Caracciolo explains, readers:

may imagine what it would be like *for them* to be in his shoes. This effect can be conceptualized as a form of bodily perspective-taking or empathy that creatively reutilizes readers' past experiences (for instance, of extreme cold or numb limbs).⁶⁵⁸

Scriptwriter John Yorke's appreciation of this process in the context of film applies equally to written texts:

If a film is working correctly, the protagonists *are* us... We heal as we watch, not because the work articulates the need for conflict resolution, but because it allows us to enact the process ourselves.⁶⁵⁹

By enacting others in this way – even from the comfort of a chair – we change ourselves. Iain McGilchrist points to neurobiology and neuropsychology to underpin his claim that by thinking about others acting 'we become objectively, measurably, more *like* them, in how we behave, think and feel,' so that 'through the direction and nature of our attention, we prove ourselves to be partners in creation, both of the world and of ourselves.'⁶⁶⁰

⁶⁵⁷ Oatley, *The Passionate Muse*, pp.177-78

⁶⁵⁸ Marco Caracciolo, 'Embodying the Reader: Perspectives on Fiction, Cognition and the Body,' in Denisa Butnaru (ed.), *Medial Bodies between Fiction and Faction: Reinventing Corporeality* (Bielefeld: transcript Verlag, 2020), p.210 (emphasis in the original)

⁶⁵⁹ Yorke, *Into the Woods*, p.148 (emphasis in the original)

⁶⁶⁰ McGilchrist, *The Master and his Emissary*, p.28. Graham Ward, in discussing McGilchrist's analysis, notes that 'we are not only affected by mimesis because its effects live within us; we in turn effect changes with respect to that

These changes – because embodied - are physical, and may sometimes be enduring. I make this claim in the continuing spirit of opposing more traditional Cartesian analyses that fail to reflect the full-body nature of the reading process. Merleau-Ponty described the body as a ‘center of potential action’ and recorded that ‘it is as if the other person’s intentions inhabited my body and mine his.’⁶⁶¹ Abram, on whom he was a seminal influence, suggests that:

The travails of its [a story’s] characters embed themselves into our own flesh. The sensuous, breathing body is, as we have seen, a dynamic, ever-unfolding form, more a process than a fixed or unchanging object.⁶⁶²

Characters can indeed be incarnated in a significant way, and the scientific research relating to embodied simulation is uncovering some of the details of that process.

The *intentional* AEC that I propose involves this awareness of simulation, so that we have greater choice in when and how its power operates within us. In this regard, Oatley argues against a simple one-directional relationship between art (including story) and life, whereby the function of the former is to imitate the latter:

The more important movement is for life to imitate art. We ourselves, in our own lives, can change the simulation, which is our consciousness, and thereby change ourselves by choosing carefully the fictional simulations with which we engage, and by taking them in.⁶⁶³

which we mime. Either way, in any mimetic activity *we* are altered.’ (‘Reading to Live,’ pp.8-9; emphasis in the original).

⁶⁶¹ Merleau-Ponty, *Phenomenology of Perception*, p.185

⁶⁶² Abram, *The Spell of the Sensuous*, p.120

⁶⁶³ Oatley, *The Passionate Muse*, p.181

The importance of this choice is reinforced by the notion that we are not just imitating others – human and nonhuman – via simulation, but are physically changed during that interaction, and with frequent engagement that change can be lasting. This ‘absorption’ process is one that I will elaborate in the final chapter.

Conclusion

For pragmatists like William James, beliefs change reality. The sentiment is picked up by Dennis Ford when he argues that:

The person who ‘thinks’ that the universe is neutral and without purpose lives in a different universe – not only cognitively but emotionally – from one who thinks that the universe is sustained by God’s continuing grace.⁶⁶⁴

Religious naturalists may be condemned, as are all others under the critiques of Midgley and Sideris, to live in a universe that is ‘neutral and without purpose.’ But this way of thinking errs if it proceeds to think that *chosen* purposes cannot be affectively potent. As I have argued, those purposes can still be grand, be cosmic in context, and be inclusive of heroism, without falling foul of anthropocentrism.

An understanding of AEC can help religious naturalists to engage with their narrative challenges and with the specific difficulties that their scientific commitments create. They can be aware of the plots that they may instinctively use, the alternatives available, their cultural

⁶⁶⁴ Ford, *The Search for Meaning*, p.20

resonances, and the different ways in which they organise affects. And they can be mindful of the opportunities offered by writing that engages embodied simulation and aligns it with the purposes they wish to advocate. With this understanding, I return to Santayana's comparison between religion and poetry with which I began this chapter. By virtue of their scientific credentials, naturalist imaginaries may amount to what Santayana calls a 'poetry in which we can believe.' More than that, when placed in time – in a narrative – and with an attributed purpose, those emplotted imaginaries can become 'a factor in conduct' and a 'guide.'⁶⁶⁵

⁶⁶⁵ Santayana, *Interpretations of Poetry and Religion*, pp.25-26

CHAPTER 6

Countering Oblivion: Material Configurations in the Light of Stellar Affectivity

*Oh, may I join the choir invisible
Of those immortal dead who live again
In minds made better by their presence...*

- George Eliot, *The Choir Invisible*

The third strand of the ACAN is what I call the Problem of Oblivion. In Chapter 1, I defined this difficulty as the alleged lack of succour in naturalism for either pain or mortality, as contrasted with what is offered by many traditional forms of religious belief. Indeed, for major thinkers including Feuerbach, Marx, Freud, and Becker, fear of mortality is the key to religion, if not its very fount. As was the case for the Problems of Alienation and Demotivation, there is a genuine affective issue for naturalism, and in the case of the Problem of Oblivion it is the most grave, and least soluble, of the three. Naturalism has not, in my view, found any affective equal to the idea of personal immortality, nor to the prospect of being reunited with loved ones.

My purpose in this chapter is more limited. I will begin by summarising the different approaches taken by naturalists towards this problem. I will then turn to AEC and, building on the opportunities discussed in the last chapter, propose that embodied simulation in particular offers a new perspective to one of these approaches. This will resist the assumption, held by many, that materiality is necessarily less load-bearing than immateriality when thinking about issues of immortality. It will put an embodied spin on George Eliot's yearning to join 'those immortal dead who live again in minds made better by their presence.' In the second part of the

chapter, I will bring together my arguments from across the whole thesis to propose how using the notion of a star as a ‘focaliser’ might provide a coherent perspective that resists all three of the problems constituting the ACAN and enlists the various kinds of AEC.

In discussing themes of salvation, I am defining this term narrowly to how people engage philosophically with their biological mortality. That is, I am dealing primarily with what Jonathan Jong and Jamin Halberstadt call ‘death anxiety’ in the title of their book.⁶⁶⁶ I am not therefore encompassing all that Stefani Ruper does in her recent doctoral thesis *Salvation by Science Alone*, which examines naturalist soteriology.⁶⁶⁷ There too her focus is on ‘existential anxiety’ but, borrowing Thomas Tweed’s notion of ‘embodied limitations,’ she goes beyond death to include, among other things, materiality, futility, frailty, and loss. Hence, her case studies comprise the wide ranging perspectives offered, in her words, by:

biologist Ursula Goodenough, who is saved from the thought of death by interpreting the germ-soma distinction of multicellular organisms, popular philosopher Sam Harris, who is saved by the ability science has to disambiguate questions of morality, spiritual belief, and spiritual practice, and zoologist E.O. Wilson, who is saved by the ways in which science helps him develop a more intimate relationship with nature as his sacred home.⁶⁶⁸

A similarly broad definition would mean that what I have shown in chapters 3, 4, and 5 in terms of naturalist imaginaries, the compatibility of explanation and wonder, and the variety of viable naturalist plot forms might arguably constitute forms of salvation. Dennis Ford would support

⁶⁶⁶ Jonathan Jong and Jamin Halberstadt, *Death Anxiety and Religious Belief* (London and New York: Bloomsbury, 2016)

⁶⁶⁷ Stefani Ruper, *Salvation through Science Alone: The Soteriological Potential of Science in Case Studies of Ursula Goodenough, Sam Harris and E. O. Wilson* (DPhil thesis, Oxford University, 2020)

⁶⁶⁸ Ruper, *Salvation through Science Alone*, p.4

this in claiming that ‘the theme of awakening to nature by transcending the blindness of custom and inattention offers a form of salvation that affronts neither our reason nor our humanity.’⁶⁶⁹

Rebirth in particular might be considered a strongly soteriological form. However, for the purposes of this chapter I will maintain the more limited definition centred on mortality.

Naturalism and Death Anxiety

I will now survey the ideas offered by religious naturalists around salvation thus defined. This may seem digressive but it is worthwhile in order to place what will follow in context. Reviewing these ideas exposes a number of common strategies, all of which involve a blend of conceptual and affective reframing that may individually and collectively help to alleviate death anxiety, albeit to a limited extent. Having done so, I will propose an original perspective on physical immortality prompted by AEC.

The first common strategy involves basic affective reassessments of both being alive and of the prospect of eternally existing, whether in this world or in some afterlife. Augmenting the affective status of this life lies behind the story of Odysseus and Calypso, in which Odysseus rejects the shapeless immortality that he is offered in favour of the possibilities of the mortal form.⁶⁷⁰ A similar sentiment is expressed by an angel in the film *Wings of Desire*:

Sometimes I get fed up with my spiritual existence. Instead of forever hovering above, I'd like to feel there's some weight to me, to end my eternity and bind me to the earth. At each step, each gust of wind, I'd like to be able to say, 'Now,' and 'now' and 'now' and no longer say 'since always' and 'forever.'⁶⁷¹

⁶⁶⁹ Ford, *The Search for Meaning*, p.236

⁶⁷⁰ See e.g. Costa, 'A Secular Wonder,' pp.135-36

⁶⁷¹ Quoted by Bennett, *The Enchantment of Modern Life*, pp.172-73

This perspective can be blended by affectively downgrading extended or eternal life if that life resembles our usual experience: a much longer life holds few charms if one's health is poor or if one outlives one's children and friends, and then there are the social and economic considerations exemplified by the old gag that nobody who knew they were immortal would choose to get married. Similar comic opportunities abound in attempts to reduce the appeal of an afterlife. Loyal Rue ponders that 'we'd have to know what our kids are doing...Nobody really wants to know what their kids are doing.'⁶⁷² For a character imagined by novelist Julian Barnes, heaven is soon tedious: 'After a while, getting what you want all the time is very close to not getting what you want all the time.'⁶⁷³ And for Christopher Hitchens the only thing worse than leaving a party and it continuing without you is being told that one can never leave and that you *must* enjoy yourself, with the prospect of a kind of unceasing praise unnervingly reminiscent of North Korea.⁶⁷⁴

A second strategy, usually attributed to Lucretius, is to assuage the fear of being dead by comparing it to what one felt before one was born. The notion that there will be no awareness or sensation, and hence no negative affect, is powerful for many, though Philip Larkin, in his poem *Aubade*, suggests that this is 'specious stuff' and precisely what we do in fact fear.

This is quite distinct from the third strategy, but shares the move to redirect attention towards our pre-natal state. Here I refer to an example of what Bethany Sollereeder calls the 'package deal' form of theodicy.⁶⁷⁵ Such strategies suggest that the desirable is only possible through the undesirable. Swimme and Berry, for example, highlight that:

⁶⁷² Interview with Loyal Rue relayed by Barlow, *Green Space, Green Time*, p.72

⁶⁷³ Julian Barnes, *A History of the World in 10½ Chapters* (London: Picador, 1989)

⁶⁷⁴ <https://www.youtube.com/watch?v=GZ0r8oT0Ams>, retrieved 17th February 2021

⁶⁷⁵ Bethany N. Sollereeder, 'God and Natural Disasters,' in B. Billingsley, M. Abedin, and K. Chappell (eds.), *A Teacher's Guide to Science and Religion in the Classroom* (Abingdon and New York: Routledge, 2018), pp.105–13

The violence associated with the hawk starving to death or the vole being consumed are intrinsically tied to the creativity of each. The beauty of their response arises from an inherently difficult situation.⁶⁷⁶

But perhaps the best known example in RN, and which Ruper selects as a case study, is Ursula Goodenough's distinction between the germ and the soma. The only way that complex life is possible on Earth has been through an impermanent soma, or body, that accompanies the enduring germ line, or genetic material:

Sex without death gets you single-celled algae and fungi; sex with a mortal soma gets you the rest of the eukaryotic creatures. Death is the price paid to have trees and clams and birds and grasshoppers, and death is the price paid to have human consciousness, to be aware of all that shimmering awareness and all that love. My somatic life is the wondrous gift wrought by my forthcoming death.⁶⁷⁷

Connie Barlow attributes the idea to Loyal Rue, who more explicitly uses the language of embodiment:

Without a soma line, there would be no possibility of an embodied person – no memories, no loves, no wonder or wisdom, no longing or learning. These are among the splendors of the body, and for these we must die. To the extent that I cherish my life, therefore, I have reason to be profoundly grateful for my death.⁶⁷⁸

⁶⁷⁶ Swimme and Berry, *The Universe Story*, p.56

⁶⁷⁷ Goodenough, *The Sacred Depths of Nature*, p.151

⁶⁷⁸ Quoted in Barlow, *Green Space, Green Time*, p.266

With the gene-soma distinction, salvation is repositioned as prenatal rather than post-mortem. There is an emphasis on one's existence being unlikely, set against the vast expanse of time during which one was not alive. Just as it is likely that those who have escaped death will see everything as a blessing, Goodenough responds with 'outrageous celebration that it [life] occurred at all.'⁶⁷⁹ This lottery-winning perspective is expanded by the realisation that, unlike any other world that may exist, our evolution for this particular one means that 'everything is perfect for human habitation, and everything is astonishingly beautiful.'⁶⁸⁰

In all the three strategies above, there is an acceptance that we die, but one eased by various forms of affective and conceptual reframing. The final group of ideas I will now discuss differ because they involve a conceptual reframing that suggests we do not fully die, but continue in some meaningful form. For example, following Arne Naess, the founder of deep ecology, we might cultivate an expanded self-image, spatially and temporally.⁶⁸¹ This might involve identification with some great project that transcends our finite lives:

If we identify our own interests with those of the pageant...then much of the pang is removed from the recognition of personal mortality; as long as the pageant continues, 'we' carry on.⁶⁸²

⁶⁷⁹ Goodenough, *The Sacred Depths of Nature*, pp.29-30

⁶⁸⁰ Goodenough, *The Sacred Depths of Nature*, p.168

⁶⁸¹ Arne Naess, 'Self-realization: An ecological approach to being in the world,' in George Sessions (ed.), *Deep Ecology for the 21st Century* (Boston and London: Shambhala, 1995), pp.225-39. Naess owes to Spinoza the concept of a greater self.

⁶⁸² Barlow, *Green Space, Green Time*, p.241

However, there are also kinds of more directly material survival that tend to focus on the genetic or atomic levels. The former involves having children or, in their absence, helping relatives. Michael Cavanaugh celebrates the potential of the latter, where relatives include all life:

No doubt the atoms of our bodies have been re-used millions of times to participate in thousands of life-forms. It is a glorious process, one that we might be just as enthusiastic over as heaven, were we not so worshipful of human consciousness, and so ego-centered in our own individual consciousness.⁶⁸³

Here he notes that there is unrealised opportunity in this perspective, something developed by Jane Bennett when she invites us to:

imagine the world in terms of an overabundance of forms or plenitude – as a place where, although individual humans and individual objects are surely mortal, the matter of which they are made is not...The molecular assemblages formed by matter (you, me, the table) are temporary and frail, but the process of becoming goes on and on. It is not finite.⁶⁸⁴

The extent to which these ideas are affectively potent will vary from person to person. They also come with the caveat that the matter comprising an individual is dynamic due, for example, to cell loss and replenishment or to the multitude of micro-organisms that are so integral to our essential functions that species boundaries are disrupted.

⁶⁸³ Cavanaugh, *Biotheology*, p.192

⁶⁸⁴ Bennett, *The Enchantment of Modern Life*, pp.164-65. There are, of course, huge constraints in how matter and the affects assembled from it are configured in each individual. While Bennett associates this position with Deleuze and Spinoza, one can reject the Deleuzian/Spinozan branch of affect theory - which grants too much plasticity to bodies and gives insufficient attention to evolution and history - yet still pursue the details of how the matter comprising an organism endures beyond its life. For a critique of the Deleuzian/Spinozan perspective, see Donovan Schaefer, *The Evolution of Affect Theory: The Humanities, the Sciences, and the Study of Power* (Cambridge: Cambridge University Press, 2019).

Embodied Simulation and Death Anxiety

Having summarised the common strategies used by religious naturalists to alleviate death anxiety, I will now turn to AEC and to a perspective that has not, to my knowledge, been previously developed. This is a form of material survival at a more complex level than those of atoms or genes, namely, the kind of perpetuity represented by embodied simulation. The starting point is naturalism itself, which I defined as the position that everything is constituted ultimately of matter and forces, broadly defined, with no separate nonmaterial plane. Consciousness and its components such as memory and imagination remain mysterious, and our understanding is in its infancy, so that, for example, scientists are some way from uncovering the ‘neural code’ mapping particular neural patterns to particular thoughts. However, naturalists regard the assumption that mental content ultimately emerges from material phenomena to be safer than the immaterial alternative, even if the processes involved remain – and may forever remain - beyond our powers of investigation and comprehension.

Memory and imagination are closer to direct perception than many realise. They are a form of offline, decoupled or ‘unfastened’ perception insofar as they use much of the same brain circuitry.⁶⁸⁵ Throughout this thesis I have been building upon the empirical evidence for not just perceptual simulation but motor and emotional simulation. We talk of memory ‘traces,’ but summoning memories entails material reconstruction in the present moment, which is one of the reasons that eyewitness testimony tends now to be treated with more scepticism than in the past. Simulation likewise involves material construction, and often the reconstruction and recombination of memories.

⁶⁸⁵ ‘Unfastened’ is the adjective chosen by David Eagleman in a different but related context: ‘Hallucinations are simply unfastened vision.’ David Eagleman, *Incognito: The Secret Lives of the Brain* (Edinburgh: Canongate, 2011), p.46

The upshot of this is that, while we cannot equate remembering or imagining someone to perceiving them directly, there will be a strongly isomorphic relationship between the materiality of the reconstruction and the materiality of the original perception. In short, what we produce in the imagination is an *isomorphic material reconstruction* of a direct perception. The same individual atoms are not used, but their configurations will have similarities in whatever neural code exists, and in the emotional and motor responses. We simulate the dead just as we do the living and the imagined – through all the perceptual, motor and emotional pathways - and in this manner they continue to embody us. And note that, in cases where we never perceived the person directly, there are indirect ways of doing those such as viewing their image or hearing their voice (or, at a greater distance, reading detailed descriptions of them).

These isomorphic material reconstructions are not confined to simulated perceptions of another person. They also apply when we adopt *their* perspective. Consider, for example, Benjamin Bergen's proposal that motor simulation:

is intrinsically about projecting oneself into a body – often someone else's – and, when you simulate what it would be like to do things someone is described as doing, you're taking their perspective, not merely in a visual way, but in terms of what it would be like to control their actions. Understanding language, in multimodal ways, is a lot like being there.⁶⁸⁶

Reading about or imagining the deceased can mean taking their perspective in ways that involve very similar material configurations. If we see (or imagine) a scene they have viewed, or hear (or

⁶⁸⁶ Bergen, *Louder than Words*, p.92

imagine hearing) something they have heard, or smell (or imagine smelling) something they have smelled, the relationship between the material substrate of their experience and ours will not be random. As Bergen suggests, the same is the case where we carry out similar patterns of motor movements (or imagine doing so) or have similar emotional experiences.

This is not to say that imagining, or otherwise simulating, the dead is in any way a replacement for directly perceiving the person when alive. It does not mean that we can take too literally poet Thomas Campbell's line in *Hallowed Ground* that 'to live in hearts we leave behind is not to die.' It does, however, add to the naturalist strategies resisting the Problem of Oblivion, and specifically those concerned with kinds of material survival. While Cavanaugh suggests that 'the processes of death and rebirth extend our molecules into the future, and give assurance that they will continue to participate fully in life,'⁶⁸⁷ simulation offers a slightly different form of post-mortem participation: it is not just that our individual molecules are recycled into other living and life-enabling forms, but that more complex molecular configurations are recreated.

I will illustrate this with a sentence of Jesus recounted in the Gospel of St Matthew and to its musical rendering by Handel: 'Come unto him all ye that labour and are heavy laden, and I will give you rest.' (Matthew 11:28). A century ago, J. Middleton Murry considered this phrase in *The Problem of Style* (1922), reflecting that 'the language itself has a surpassing beauty. The movement and sound...is exquisite.' And not just the arrangement of words, but their meaning: 'In whatever language that sentence was spoken to you, your depths would be stirred. Our whole common humanity reaches out after the comfort of the words.'⁶⁸⁸ Middleton Murry did not have our current understanding of the simulative processes contributing to that impact: perhaps a perceptual simulation of seeing some load being set down, but more important to its impression,

⁶⁸⁷ Cavanaugh, *Biotheology*, p.192

⁶⁸⁸ J. Middleton Murry, *The Problem of Style* (London: Oxford University Press, 1975), pp.116-17

the motor simulation in both the ‘approach’ signal to ‘come’ and the unloading of some weight, as well as the broader emotional dynamic to which Middleton Murry refers.

I submit that there will be strong similarities in the embodied comprehension processes of different individuals hearing these words. Linguistic, cultural, and individual differences will lead to variations, but not randomness: the kinds of motor simulations associated with ‘come,’ ‘heavy laden,’ and ‘rest,’ for example, are based on the common physiology of our species. It is reasonable to posit, then, that when we process these words, there is an isomorphic relationship between the material affective flows within us and those within others who originally, and throughout history, processed the same words. The same can be said of the activity of speaking the words, in whatever language, and even of simply imagining saying the words given that brain regions controlling speech articulators are activated.⁶⁸⁹

A musical interpretation of the same phrase may illustrate the point more clearly because complex musical compositions are of a greater scale than a single spoken sentence and have quite specific requirements in terms of pitch, tempo, and orchestration. The phrase appears in Handel’s *Messiah*, in the second verse of the aria ‘He Shall Feed His Flock.’ The auditory processes in different individuals – while listening live and when reconstructed in memory as auditory simulation – are highly unlikely to be unrelated in material terms. This is especially the case where the listeners are hearing the same performance or recording and so less liable to reconstructive differences. But note too that our material configurations will thus have an isomorphic resonance with what Handel himself heard both when the aria was performed live and in his own auditory simulations. A deceased speaker or composer, then, continues to

⁶⁸⁹ Bergen, *Louder Than Words*, p.165

reconstitute some personally important aspect of their body-mind within others, albeit imperfectly and with different individual atoms.

To place this in narratological terms, recall that in the previous chapter I cited Keith Oatley's statement that:

The reader puts aside her or his own goals and concerns, insert the goals and plans of the character into his or her own planning processor, and mentally enacts the plot.⁶⁹⁰

This introduces the possibility of other isomorphic material relationships with the deceased, such as the particular sequence of Pankseppian affect circuit activations that might be prompted by a certain narrative sequence. Oatley went on to note that this process operates across various media: oral recitation, drama, written stories, and films 'have similar properties, of being narrative simulations that we can incorporate into our own consciousness.'⁶⁹¹ Hence, the specific medium may affect the kinds of material configurations generated due to the extent to which different types of perceptual and motor simulation are prompted, but all media are vehicles by which material configurations originally created or merely experienced by the deceased might be reconstructed.

This is 'living on' in a different and arguably more powerful way than 'merely' lingering in the memory. When we remember someone – perceptions of their appearance, sounds, scent – we do not typically think that we are materially reconstituting our direct perceptions. And if we try to imagine what they experienced, or something they created, we do not habitually consider the way in which we reconstitute in our ultimately material consciousness something not entirely

⁶⁹⁰ Oatley, *The Passionate Muse*, pp.177-78

⁶⁹¹ Oatley, *The Passionate Muse*, p.179

unrelated to what was materially present in theirs. To what extent are we aware of this process of historical simulation? Do we appreciate the prospect that we will ourselves be simulated by others in the future, including by those who learn of but never knew us? Are we aware that how we conduct ourselves in life will influence the form that those simulations take?

I propose that while these material connections may not be as affectively potent for some as their supposedly immaterial equivalents, materialism does add something, and in ways that very few realise. As an example, I reflect upon my own experience of archaeological excavations, and of imagining being a citizen of the ancient civilisation under study. The notion that I might be creating isomorphic material reconstructions (albeit with dwindling fidelity for remote, fragmentally comprehended cultures) as I envisage myself in one of their reconstructed buildings, or hear similar musical instruments, or walk through the same hills, is more potent than the traditional concept of immaterially imagining those same things. One might say that ‘transcorporeality,’ to use Graham Ward’s term, occurs not just across space, but across time.⁶⁹² Simulation loosens the subject-object boundary, and it can also loosen that between living and not living.

The possibility of isomorphic material reconstructions is not, to my knowledge, explored by either prominent religious naturalists or EC scholars. David Abram describes Earth as:

a round mystery whose life is utterly eternal relative to ours, from out of whose vastness our lives – like those of our ancestors, our enemies, and our children – all recede, like waves on the surface of the sea.

⁶⁹² Ward, *Unimaginable*, p.63

An eternity we thought was elsewhere now calls out to us from every cleft in every stone, from every cloud and clump of dirt.⁶⁹³

Given Abram's awareness of EC, the second might be taken as a lyrical hint about material continuity, but it is not pursued. This may be because his phenomenological approach is so focused on present awareness, but also because – as perhaps corroborated by his first sentence – his work as a whole does not suggest a concern with death anxiety or its alleviation. George Lakoff and Mark Johnson certainly glimpsed that what they call 'imaginative projection' was of 'spiritual' import:

The capacity for imaginative projection is a vital cognitive faculty. Experientially, it is a form of 'transcendence.' Through it, one can experience something akin to 'getting out of our bodies' – yet it is very much a bodily capacity...Imaginative empathetic projection is a major part of what has always been called spiritual experience.⁶⁹⁴

That they did not develop the idea, introduced only in the final pages of *Philosophy in the Flesh*, may be because that volume focused on elaborating their core argument – apparently still necessary as late as 1999 - that embodiment is a real phenomenon.

Absorption

The scientific understanding of neuroplasticity and its familiar axiom – 'neurons that fire together wire together' – has an important implication for these material configurations. It means that repeated simulations of a particular person may acquire a semi-permanent presence, whether

⁶⁹³ Abram, *Becoming Animal*, pp.180-81

⁶⁹⁴ Lakoff and Johnson, *Philosophy in the Flesh*, p.565

fictional or real, and in the latter case, whether living or dead. Similarly, some stories and their component images might manage to inhabit us not as transient flickers, nor indeed as ‘mere’ memories, but as enduring constellations of physical matter. Lakoff and Johnson concur: ‘As we learn our concepts, they become parts of our bodies. Learned concepts are embodied via permanent or very long-term changes in our synapses.’⁶⁹⁵ I will refer to this process as *absorption*.

Absorption is a strange notion because of our Cartesian inheritance: if it is challenging for most people to contemplate thoughts and imagination in ultimately material terms, it is probably even more so to entertain the idea that these may create lasting material changes. Transitions in the opposite direction – from medicines, for instance, to thoughts, occasionally in a chronic way – may still be more intuitive than the notion that thoughts push matter around. We may not understand the fine details of the process, but we do know that neuroplastic development occurs throughout life, even if experiences in the early years are particularly formative and may constrain later flexibility.⁶⁹⁶ This includes early exposure to literature, which ‘not only depicts and provokes emotional experiences; it contributes to the formation and operation of our emotion systems in a range of ways.’⁶⁹⁷

Some scholars have studied this process of neuroplastic remodelling in theological contexts. For example, Antoine Lutz and his colleagues examined the neural and physiological counterparts to an inventory of Buddhist meditative practices and states. This suggested neural remodelling according to these different types of experiential input.⁶⁹⁸ Another instance, albeit

⁶⁹⁵ Lakoff and Johnson, *Philosophy in the Flesh*, pp.537-38

⁶⁹⁶ Malcolm Jeeves and Warren S. Brown, *Neuroscience, Psychology, and Religion: Illusions, Delusions, and Realities about Human Nature* (West Conshohocken, PA: Templeton Press, 2009), pp.49-50

⁶⁹⁷ Hogan, *What Literature Teaches Us about Emotion*, p.288

⁶⁹⁸ Antoine Lutz, John Dunne, and Richard Davidson, ‘Meditation and the Neuroscience of Consciousness: An Introduction,’ in Philip Zelazo, Morris Moscovitch, and Evan Thompson (eds.), *The Cambridge Handbook of Consciousness* (Cambridge: Cambridge University Press, 2007), pp.499-551

less direct, is Tobias Tan's use of the analogy of driving to describe the 'autopilot' quality of familiar rituals,⁶⁹⁹ given that this kind of 'unconscious competence' – as it is described in learning and development circles – is often associated with embedding routines into neural circuitry. The common references to 'neuroplasticity' and 'neural circuitry' might give the false impression of a brain-limited phenomenon, but as witnessed by Tan's EC approach, plasticity involves the body at large.

While we are more accustomed to thinking about absorption in terms of ingrained habits like these, the process also occurs through repeated rehearsal of the perspective or actions of somebody else, rather as a method actor might come to embody a character. I argued in the previous chapter that the Problem of Demotivation can be countered where an RN author engages readers' embodied simulations in ways that align with the author's chosen purposes, and that, in some cases, this may extend to embodying a specific or generic individual. I cited David Abram's suggestion that:

The travails of its [a story's] characters embed themselves into our own flesh. The sensuous, breathing body is, as we have seen, a dynamic, ever-unfolding form, more a process than a fixed or unchanging object.⁷⁰⁰

Elsewhere he refers to 'the mutual inscription of others in my experience, and (as I must assume) of myself in their experiences.'⁷⁰¹ More recently, EC theorist Marco Caracciolo argues similarly that the body:

⁶⁹⁹ Tan, 'Corporeality in Religious Experience,' p.220

⁷⁰⁰ Abram, *The Spell of the Sensuous*, p.120

⁷⁰¹ Abram, *The Spell of the Sensuous*, pp.38-39

can be reshaped by culture and by imaginative acts, such as those we perform when engaging with narrative in prose and other media. The body thus becomes an infinitely complex membrane between biology, cognition, and culture.⁷⁰²

Both Abram and Caracciolo explore this possibility in the context of other animals (the latter in analysing J. M. Coetzee's novella *The Lives of Animals*), but Caracciolo proceeds to observe that, for the human context:

In reading, we can come to inhabit a disabled body, or a body of a different gender or sexual orientation. This illusion – which may well have an effect on our real-world beliefs and attitudes – depends on the author's skillful use of embodied cues, which draw our real bodies into the narrative even as they effect a number of subtle changes in our imagination of the body.⁷⁰³

Note, though, that while 'illusion' is arguably appropriate, its immaterial connotations do not do justice to the kinds of material reconstructions involved.

I conclude, then, that through repeated simulation, *isomorphic material reconstructions* can be *absorbed* via neuroplasticity. This process represents a form of material survival that may reduce death anxiety, at least for some people and to a certain extent, thereby countering the Problem of Oblivion. The advocates of the Problem of Oblivion assume that immateriality (usually in the form of souls) is preferable to materiality when it comes to life after death, and it may be safe to assume that this assumption is more widespread. While this may be true, if one holds a naturalist philosophy and no longer believes in an immaterial realm to which materiality can be compared,

⁷⁰² Caracciolo, 'Embodying the Reader,' p.217

⁷⁰³ Caracciolo, 'Embodying the Reader,' p.217

materiality on the contrary may be seen as an opportunity – one significant for some form of existence beyond death, and in more elaborate ways than is represented by the common frames of genetic or atomic survival.

This perspective might be fruitfully combined with some related RN themes. For example, some religious naturalists suggest we elevate our awareness of what we leave to those who will come after us. Loyal Rue is a case in point – ‘if thanksgiving requires a face, then let it be the face of future generations’⁷⁰⁴ - while isomorphic material reconstructions ‘flesh out’ Michael Cavanaugh’s observation that:

Death cannot terminate a more permanent kind of human consciousness. During our lives we contribute to lives around us, or to the culture as a whole, and our contributions certainly survive us. Those contributions can satisfy our need for emotional ties to the next generation, and connect us profoundly to the future of our species.⁷⁰⁵

A second common RN theme is that of celebration. Because being alive at this moment can be cast as an extremely unlikely gift, and comes with a degree of freedom, Ursula Goodenough writes:

I am in charge of my own emergence. It is not something that I must wait for, but something to seek, something to participate in achieving, something to delight in achieving.⁷⁰⁶

⁷⁰⁴ Loyal Rue, *Everybody’s Story: Wising Up to the Epic of Evolution*, (Albany, NY: State University of New York Press, 2000), p.134. Lisa Sideris feels that this orientation towards those who come after us ‘is a commendable, if difficult goal (a good deal of literature on the ethics of climate change attempts to grapple with this problem of obligations to future generations, for example.)’ Sideris, *Consecrating Science*, p.97.

⁷⁰⁵ Cavanaugh, *Biotheology*, p.192

⁷⁰⁶ Goodenough, *The Sacred Depths of Nature*, p.60

There is the potentiality for a celebratory relationship to both ‘bringing back’ the deceased in the limited sense of isomorphic material reconstruction, and in shaping the forms by which we ourselves might in future be reconstructed in others. It is a celebration conveyed in the opening of George Eliot’s poem, a few lines of which I used to begin this chapter because they represent the post-mortem simulation process:

*Oh, may I join the choir invisible
 Of those immortal dead who live again
 In minds made better by their presence; live
 In pulses stirred to generosity,
 In deeds of daring rectitude, in scorn
 For miserable aims that end with self,
 In thoughts sublime that pierce the night like stars,
 And with their mild persistence urge men’s search
 To vaster issues. So to live is heaven:
 To make undying music in the world...*

Harnessing Stellar Affectivity

To conclude this final chapter, I want to bring this AEC-informed perspective on naturalist soteriology together with some other themes developed throughout the thesis. In particular, I wish to propose that *stars* carry a positive affectivity for demographically significant numbers of people that has yet to be fully harnessed by RN authors, and that a stellar framing has the potential to counter the range of challenges presented by the ACAN.

In *The Sense of Beauty* (1896), George Santayana provided an account of stellar affects. He did so because they are ‘so striking and fascinating an illustration of the effect of multiplicity in uniformity,’ which he identified as a key aesthetic phenomenon.⁷⁰⁷ However, my focus here is his suggestion that:

The kinship of the emotion produced by the stars with the emotion proper to certain religious moments makes the stars seem a religious object. They become, like impressive music, a stimulus to worship.⁷⁰⁸

He wrote this based on their phenomenological impression and before the astonishing scientific discovery that all the elements heavier than hydrogen and helium that we find on Earth, and in its organisms, originated in a supernova. RN, as I and others have defined it, is about the cohabitation of scientific understanding and affects that might be deemed religious. This combination in stars invites an analysis of their suitability in offering a broader frame from which to hang some of the other ideas I have been discussing.

I stress at the outset that in selecting stars, I am not recommending that all religious naturalists adopt this perspective; one of my recurrent themes has been the importance of understanding and respecting individual differences and what this means for the affective resonance of different ideas. In recognising viable alternatives, it is worth noting that symbols more generally are inherently affective. As Melvin Konner argues:

⁷⁰⁷ George Santayana, *The Sense of Beauty: Being the Outline of Aesthetic Theory* (New York: Dover Publications, 1955), p.64

⁷⁰⁸ Santayana, *The Sense of Beauty*, p.65

It would be a fool's errand to try to understand language and especially to give a central role to symbolic meaning, except in light of emotion, because the *meaning* of meaning is inherently emotional.⁷⁰⁹

He continues:

A symbol does not merely ramify in a dozen directions through the mind and brain, setting off echoes of verbal and visual imagery; it also makes you shiver or swoon or palpitate or feel a thrill at the back of your neck. A significant symbol stirs the emotions.⁷¹⁰

I will develop the argument that a star is one such significant, affect-laden symbol, in modern Western culture and in many others, and that some people may find this a resonant frame that can unify a collection of other insights.

I will begin with the notion of *focalisers* and their value. The diffuse character of some common naturalist tropes may make it difficult for them to acquire and maintain affective associations. I have discussed the affective challenges that may arise with a lack of agential beings aside from humans, but RN may also, in some cases, suffer from a more basic lack of *discrete entities* (whether beings or not) to which affects might adhere. Recall that, in EC theory, one of the most fundamental representations by which we organise experience is the container schema: we experience in infancy the qualities of containers – inside, outside, a boundary – and use this to conceptualise and understand more abstract phenomena.⁷¹¹ I have examined how David Abram is among the naturalists who try – implicitly - to break the container schema by

⁷⁰⁹ Konner, *The Tangled Wing*, p.167 (emphasis in the original)

⁷¹⁰ Konner, *The Tangled Wing*, pp.167-68

⁷¹¹ See e.g. Lakoff and Johnson, *Metaphors We Live By*, pp.29-32; Lakoff and Johnson, *Philosophy in the Flesh*, pp.31-32

dissolving popular boundaries. Religious naturalists tend to align themselves with the various scientific discoveries that demonstrate the interconnectivity of life, or de-emphasise distinctions between different forms of life and indeed between life and non-life. They incline towards the rejection of any notion of essence, and of closed categories. The use of focalisers can provide something memorable, and perhaps tangible, to which attention and emotions can be attached. There is, I will argue, a way to harness this adhesive quality of focalisers and the affective advantages they confer, without losing other affective benefits derived from more fluid notions of interconnectedness and embeddedness.

Authors of many genres often use focalisers to make concrete the abstract or complex. This more easily prompts bodily and emotional responses in readers as they comprehend the text through simulation. In *The Lord of the Rings*, for instance, Tolkien uses the concrete, concentrated ring itself to stand for something much bigger and more complicated about power and perhaps values (the precise referent, insofar as there may be one, has been the source of much deliberation). RN may benefit from similar focalisation techniques. Some of the RN possibilities have been considered by Donald Crosby in his book *More Than Discourse* (2014), in which he argues that ‘religious symbols that speak to the whole person and not just the discursive mind are vitally needed for a rich and full life and an adequate vision of life.’⁷¹² However, to develop my stellar example it is fitting to start with Carl Sagan.

In *Pale Blue Dot*, Sagan meditates on the image of Earth taken from the outer Solar System by Voyager II, a photograph only taken following Sagan’s own lobbying efforts at NASA. The memorable image, and Sagan’s description of Earth as ‘a mote of dust suspended in a sunbeam,’⁷¹³ can serve as a focaliser for affects and values relating to preciousness, protection,

⁷¹² Donald Crosby, *More Than Discourse: Symbolic Expressions of Naturalistic Faith* (Albany, NY: State University of New York Press, 2014), p.161

⁷¹³ Sagan, *Pale Blue Dot*, p.6

beauty and perspective. Much earlier, however, he had been highlighting a material human-cosmic connection:

The iron in our blood, the calcium in our teeth, the carbon in our genes were produced billions of years ago in the interior of a red giant star. We are made of star-stuff.⁷¹⁴

On another occasion he offered: ‘The cosmos is within us. We are made of star-stuff. We are a way for the universe to know itself.’⁷¹⁵

Sagan was not the first to discuss this scientific discovery, but his popular reach meant that it has since been repeated by many others, including religious naturalists. I have, for example, referred to Bryan Swimme and Thomas Berry’s development of this scientific discovery – albeit with unnecessary personalisation and teleological overstretch – in their characterisation of that ancestral supernova as Tiamat sacrificing herself in childbirth.⁷¹⁶ Elsewhere Berry suggests that:

This supernova event of a first or second generation star could be considered a cosmological moment of grace, a moment that determined the future possibilities of the solar system, Earth, and of every form of life that would ever appear on the Earth.⁷¹⁷

Loyal Rue also emphasises these origins when he refers to our essential ‘star-born and earth-formed’ nature and exclaims: ‘Human beings are geological formations!’⁷¹⁸ However, the idea is

⁷¹⁴ Carl Sagan, *The Cosmic Connection: An Extraterrestrial Perspective*. Garden City, NY: Anchor Press, 1973), p.189

⁷¹⁵ From ‘The Shores of the Cosmic Ocean,’ written by Carl Sagan for the TV series *Cosmos*, PBS.

⁷¹⁶ Swimme and Berry, *The Universe Story*, pp.8, 49, 60-61

⁷¹⁷ Berry, *The Great Work*, p.197

⁷¹⁸ Rue, *Religion is Not About God*, p.25

often left undeveloped. In *More Than Discourse*, Crosby develops the more general potential of ‘religious symbols’ in a naturalist context:

Religious symbols do ‘choose us’ in the sense of resonating with something deep inside us and arousing in us recognition of profound insights or truths in ways that ordinary metaphors or other figures of speech do not. This fact, however, does not leave us incapable of exploring various candidates for religious symbolism and testing them for their appropriateness in expressing what we experience religiously and in the depths of our souls.⁷¹⁹

However, he does not choose to explore the stellar candidate, and nor to my knowledge has it been elaborated analytically in the context of AEC. That is my purpose here. I will frame the discussion around how the stellar relates to the material of each chapter, and helps to both mitigate some of RN’s challenges and unify some of its divisions.

In Chapter 1, I argued that RN is fundamentally concerned with developing meaningful myths founded on the discoveries of mainstream science, and that its foundational philosophers variously sought to unify scientific convictions with the possibilities of idealism, myth, and those experiences justifiably termed religious. As mentioned above, it is now considered a well-established scientific fact that all the elements heavier than hydrogen and helium on Earth, both organic and inorganic, were forged in a star that detonated as a supernova. My theory of AEC, which formed the basis of Chapter 2, illuminates why this stellar origin is rich in potential for the kinds of mythic and ideal elaborations by which religious naturalists extend scientific discoveries.

⁷¹⁹ Crosby, *More Than Discourse*, p.139

Specifically, stars often carry affects that many find desirable, and both directly perceiving them and simulating them in the imagination also entail these desirable affects.

Recall my discussion of *affective tow*. What Mark Johnson calls ‘our human glory – abstract thinking and the possibility for enhanced enquiry and creativity that comes with it’ involves selecting from our *Gestalt* experience – in the terms that James, Dewey and McGilchrist described – in the service of various purposes.⁷²⁰ However, while this process may seem to minimise our perceptual experience, we do not leave it behind entirely because the affectivity of direct experience is to some extent transferred through perceptual symbols rather than being transduced into a disembodied ‘mentalese.’ It therefore matters what one selects for focused attention because it is already emotionally tagged, or, to use Damasio’s language, somatically marked. An important source of the positive somatic markers associated with stars are the numerous cultural referents: the star of Bethlehem, images from the Hubble telescope, and its various musical treatments from the ubiquitous *Twinkle Twinkle* and many Christmas carols to a wide range of popular and classical music. There are associations with light and warmth, and perhaps looser intimations of the Classical and Norse heritages of fire. Speechwriter Simon Lancaster devotes a chapter of his book *You Are Not Human* to how the language of stars transfer affects to cherished human beings.⁷²¹ ‘Shining,’ ‘scintillating,’ and ‘glittering’ are applied positively to both people and experiences.

Our perceptual simulation of stars, and the act of reading about them, is also subject to this affective tow. Laboratory studies illuminate some other intriguing aspects of the simulation process. When one imagines or hears about entities canonically found in an up location, such as sky and cloud, one uses those parts of the visual system dedicated to perceiving objects in that

⁷²⁰ Johnson, *The Meaning of the Body*, p.93

⁷²¹ Lancaster, *You Are Not Human*, pp.233-45

location. Moreover, experiments show that saccades – the leaps rather than continuous movements made by the eyes when reading – also occur while constructing embodied simulations, that is, while imagining.⁷²² While there is no suggestion that stars specifically were used in these experiments, the fact that these are canonically found in an elevated location means that similar processes will be in play. This is significant because of the inherent affectivity of what is high and low and our postures in relation to it.

There is another spatial aspect of affectivity relevant to stars, namely scale.

Santayana noted that ‘a heap of sand will involve infinity as surely as a universe of suns and planets,’ but stressed that the infinitesimal and the infinite are phenomenologically different: the spatial extent of the latter ‘has a powerful effect on account of the breadth, volume, and omnipresence of the stimulation.’ We now know, through empirical studies, that similar affects can flow from the indirect perception involved in imagination. Santayana continued:

Did not the infinite, by this initial assault upon our senses, awe us and overwhelm us, as solemn music might, the idea of it would be abstract and moral like that of the infinitesimal, and nothing but an amusing curiosity.⁷²³

The challenge that a stellar frame must meet, then, which I observed in general terms in Chapter 3, is to forge a multi-dimensionality and multi-scalar relationship to space that can benefit from the range of available affectivities and nurture ethical environmental relationships.

With this in mind, there is a second sense of the idea of spatial elevation that I explored in Chapter 3: the relationship between horizontal and vertical notions of transcendence. I

⁷²² Bergen, *Louder than Words*, pp.60-63

⁷²³ Santayana, *The Sense of Beauty*, p.65

discussed how, in contrast to ideas of vertical transcendence and the Great Chain of Being, David Abram encourages a form of horizontal transcendence in the transcorporeal and other ways that he invites us to engage with what he calls the ‘more-than-human-world.’ And in relation to that other spatial aspect – scale - Abram is an author seemingly more attuned to noticing and treasuring sensuous, local affects than cosmic grandeur. But while making such distinctions is the lifeblood of academic work, it can lead to false choices: it is mistake to assume that an individual human being is unable to *combine* these perspectives. There is no reason why an individual cannot maintain both local and global awareness - or both horizontal and three-dimensional awareness - without some form of cognitive dissonance. RN might intentionally cultivate a three-dimensionality by combining the kinds of horizontal transcendence and transcorporeality illustrated by authors like Abram with a star-aware perspective that both broadens and heightens, and a multi-scalar perspective encompassing ‘a heap of sand’ and ‘a universe of suns and planets.’ There is no need to choose.

In Chapter 3, then, I ventured from embodied minds themselves to their ecological relationships, focusing primarily on Abram’s work. In a passage that captures his sense of interconnectivity, Abram writes:

The boundaries of a living body are open and indeterminate; more like membranes than barriers, they define a surface of metamorphosis and exchange. The breathing, sensing body draws its sustenance and its very substance from the soils, plants, and elements that surround it; it continually contributes, itself, in turn, to the air, to the composting earth, to the nourishment of insects and oak trees, ceaselessly spreading out of itself as well as

breathing the world into itself, so that it is very difficult to discern, at any moment, precisely where the living body begins and where it ends.⁷²⁴

The deep sense of ecological embeddedness that Abram and many other religious naturalists promote can be supplemented, rather than supplanted, by the identity provided by the discovery that we are composed of stellar material. Chet Raymo reflects:

I am stardust – galactic cobwebs here temporarily concreted into an entity of uncertain dimension. My matter intermingles with earth and air. I suck in stardust with every breath. Atoms of starstuff leak out of my body through the pores of my skin...⁷²⁵

There is no conflict here either – no clash between the atomic level used by Raymo and the more emergent biological level of Abram. It is perfectly possible to draw simultaneously on both frames, which are consistent both scientifically and narratively.

We can link the stellar discovery with another RN trope, namely that human beings are the universe become conscious of itself. Early versions of this idea were offered separately by Teilhard du Chardin and Bernard Meland, in whose formulation we are ‘the universe come to consciousness.’⁷²⁶ Lisa Sideris criticises Teilhard in this regard, and Thomas Berry who takes inspiration from him, because of alleged teleology and anthropocentrism. However, even if Teilhard and Berry are guilty of those charges (and Teilhard certainly used the idea teleologically), suggesting that the universe is becoming conscious of itself does not *necessarily* imply any teleology, nor need the idea be anthropocentric if we define consciousness broadly to include the

⁷²⁴ Abram, *The Spell of the Sensuous*, pp.46-47

⁷²⁵ Raymo, *Honey from Stone*, p.143

⁷²⁶ Bernard Meland, *Modern Man's Worship: A Search for Reality in Religion* (New York: Harper and Brothers, 1934), p.156

kinds of sentience that exist in other organisms. Connie Barlow extends this identity to ‘we *are* the universe celebrating itself,⁷²⁷’ but why stop at celebration? It is more accurate, poignant, and indeed amusing to say that we (alongside many other organisms) are the universe becoming emotional about itself.

The atoms from the supernova therefore find themselves in configurations including the physical substrates of consciousness, thought, and emotions. This is an example of *elevating the material*, which I identified in Chapter 3 as an important and recurring strategy for RN. It counteracts the detachment and abstraction which the Problem of Alienation claims to be an ineluctable consequence of naturalism. Stars have the ability to act simultaneously as a focaliser and as the foundation for our essential material connectivity and embeddedness. They are a potent affective symbol but one that nevertheless upsets common container schemas by infusing matter in all its forms not just in terms of light but physical substance.

Imagination – understood as an ultimately physical phenomenon - uses the material of the universe to represent that universe, and indeed can make that representation scintillate like a star. In the hands of a gifted writer like Abram, for example, *naturalist imaginaries* based on scientific insights are produced, and in his case the multifarious types of nonhuman sentience can be regarded as numerous manifestations of that refashioned stardust. Phil Cousineau asks: ‘What is myth if it isn’t the sacred story that dares to describe the invisible power behind the visible world?’⁷²⁸ The scientific insight that we, other forms of life and so much else in the Solar System originated in a supernova, is just such an ‘invisible power behind the visible,’ and can be a source for the process of *simulating the unseen* that I discussed in that chapter.

⁷²⁷ Barlow, *Green Space, Green Time*, p.271 (emphasis in the original)

⁷²⁸ Phil Cousineau, *Once and Future Myths: The Power of Ancient Stories in Modern Times* (Berkeley, CA: Conari Press, 2001), p.174

In Chapter 4 I evaluated Lisa Sideris's critique of the 'serial wonder' that she associates with the 'new cosmologists,' many of whom are religious naturalists. In her criticism of Loyal Rue, Lisa Sideris may appear also to challenge what I am currently attempting with the stellar:

It is an odd and impoverished form of religious naturalism that struggles so perceptibly to identify something of value in the universe toward which to direct affective and awe-filled responses. Rue seems unduly preoccupied with reverence for the scientific story. This misplaced reverence leads him to suggest that images and symbols of the natural world act as devotional aids to the story. Shouldn't we instead understand the story as a means of facilitating and reinforcing commitment to the natural world and its creatures?⁷²⁹

I share her scepticism when it comes to Connie Barlow's mangling of *Twinkle Twinkle* into 'Now I know just what you are.'⁷³⁰ Nor would I necessarily promote 'Cosmic Communion' rituals in which participants are sprinkled with glitter – 'anointed with stardust' – to signify our stellar origins.⁷³¹ The reason this does not work is that, aside from raising the spectre of Auguste Comte and his Religion of Humanity (or New Age ceremonies), one cannot help but draw comparisons with the resplendent pageantry of traditional religion. Such ceremonies are unlikely to compete with the historical heft and sensory bonanza of a thousand people in a vast, ancient basilica, full of candlelight and incense. There is a similar problem with the call for new art and music to accompany RN, as if the immeasurable corpus of existing human expression is somehow tarnished. It matters little that Bach, for example, was inspired by his Christian faith, or that much of his work uses biblical texts: great music easily bursts the shackles of its time and

⁷²⁹ Sideris, *Consecrating Science*, p.97

⁷³⁰ See Michael Dowd, *Thank God for Evolution: How the Marriage of Science and Religion Will Transform Your Life and Our World* (London: Viking, 2009), p.91

⁷³¹ Sideris, *Consecrating Science*, p.153

tradition, and a listener is free to make any associations, religious or secular. What matters more is that artistic genius is rare and comparisons will inevitably be made. Far better to use existing great music in which one, as an individual, can find stellar resonances. In the terms of Iain McGilchrist – whose work on focused and global forms of attention I examined in Chapter 4 - one might say that the associative faculties associated with the right hemisphere may be more affectively potent for many than left hemisphere literalism.

The positions of Sideris and McGilchrist echo that of Santayana, who observed that our astonishing knowledge about stars:

is not essential to our admiration. Before the days of Kepler the heavens declared the glory of the Lord: and we needed no calculation of stellar distances, no fancies about a plurality of worlds, no image of infinite spaces, to make the stars sublime.⁷³²

And in a passage redolent of Dewey's distinction between the propositions of religion on the one hand and religious sentiments on the other, Santayana reminds us that even if we feared that a loss of our understandings – scientific or superstitious – might undermine the affect:

experience would soon undeceive us, and prove to us that the sensuous character of the object was sublime in itself...When the superstructures crumble, the common foundation of human sentience and imagination is exposed beneath.⁷³³

He contends that the scientific explanation:

⁷³² Santayana, *The Sense of Beauty*, p.64

⁷³³ Santayana, *The Sense of Beauty*, pp.64-65

might leave us cold and indifferent, if not bored and depressed, were it not that we identify this hypothetical scheme with the visible splendour, the poignant intensity, and the baffling number of the stars.⁷³⁴

In the specific case of the stellar, the overlapping arguments of Santayana, Sideris, and McGilchrist falter because I am not proposing that stars become solely – or even principally - an image or a symbol. As I demonstrated in Chapter 4 while analysing attention, Sideris especially offers a false choice. Referring to an image or symbol need not impinge upon the immediate, wondrous, form of attention with which we encounter the stellar. Our attention toggles between focused and global forms, so that explanation does not destroy what Sideris calls compatibilist wonder. It is perfectly possible to have ‘direct affective and awe-filled responses’ (McGilchrist’s global form of attention) alongside a symbol (his focused form of attention) without undermining either, even if one cannot hold them in mind at precisely the same moment. Moreover, Sideris and McGilchrist in particular overstate the sinister character of the affectivity of explanation itself. Indeed, the stellar image may be poised to appeal to both left- and right-hemisphere preferences because its associated mathematics and physics exemplify the mechanistic model but its encounters and symbolism are so affectively and artistically infused.

In Chapter 5 I tackled the Problem of Demotivation, beginning with the understanding that this was a question of orientation in time, rather than the concerns around spatial orientation that characterise the Problem of Alienation. A star is immediately promising in this regard because while it has some intimacy in providing warmth, light, and life, it also pertains to the grandest scales not just of space but of time. We remain influenced, for example, by the way in which the ancient Greeks immortalised certain characters in the stars. Because they are distant,

⁷³⁴ Santayana, *The Sense of Beauty*, p.66

unearthly, and yet deeply embodied in this way, I would contest what Sideris recommends in the final paragraph of *Consecrating Science*:

It makes little sense to turn to the biggest possible picture, the cosmos on the largest temporal and spatial scale. We should not seek relationality in the remote recesses of space, or in a homogenized vision of the globe that shifts our focus away from where we feel ourselves to be embedded.⁷³⁵

There is nothing about reflecting on our stellar connection that is not consonant – or cannot be integrated – with the kinds of local, experiential earthly cosmology that Sideris welcomes from those she calls ‘naturalists’ such as David Abram, Rachel Carson, and Loren Eiseley. The stellar frame means that those individuals who gain affectively from doing so can relate their more immediate experiences and entanglements – those favoured by Abram or Carson or Eiseley - to an essentially timeless context.

As well as discussing Sideris’s distinction between ‘naturalists’ and ‘new cosmologists,’ I proposed an orthogonal division between *existentialists* and *connectionists*. I noted that William James had already observed this in contrasting the tough-minded with the tender-minded: ‘must our means of adaptation... be aggressiveness or non-resistance?’⁷³⁶ I now want to propose that a maximally resonant RN will integrate the two, as will any complex religion or philosophy, and that the stellar frame lends itself to this fusion. On the one hand, it is the ultimate connectionist concept because it unites all biology, including ourselves, and almost all chemistry in a cosmic origin event but also in our current and future material identity as stardust. It is also a source of wonderment conducive to the celebratory stance often found in connectionism.

⁷³⁵ Sideris, *Consecrating Science*, p.202

⁷³⁶ James, *The Varieties of Religious Experience*, p.373

However, while amenable to the bucolic or universe-as-benign character of much connectionism, the stellar frame is equally suitable for urban contexts or as a backdrop for existentialism's struggles against what is malign or at least indifferent in the universe. Initially this may seem problematic. First, under the stellar frame, existentialists cannot easily maintain their tendency to see themselves apart from the rest of the universe given it undergirds the case for intrinsic connectedness through common origins and material. Second, stars connote, for some, ideas about fate and destiny. Santayana observed that 'the parable of the natal stars governing our lives is such a natural one to express our subjection to circumstances,'⁷³⁷ and this does not sit easily with the existentialist belief in the ability to forge meaningful responses.

These difficulties are minor. The interconnectivity reinforced by stardust does not render impossible any concept of individual identity, and concerning the association with destiny, commitments to scientific accounts mean that existentialist religious naturalists may have rejected this association to such an extent that it has little unconscious residual influence (Santayana proceeded to say that 'the parable of the natal stars...can be transformed by the stupidity of disciples into a literal tenet').⁷³⁸ Any difficulties are outweighed by more striking benefits. For example, as noted earlier, stellar astronomy involves a quite mechanistic mathematics and physics that may appeal to existentialists with austere epistemological commitments. But perhaps most important is that the activism often favoured by existentialists can be cosmically construed as our ability to shape arrangements of stardust. After all, many of those arrangements – whether viruses, cancers, geological forces behind natural disasters, or malign social forms - may be monsters to be overcome. Recall the fable of a slave and an artisan building a cathedral, occupied in identical physical labour but with different imaginative frames

⁷³⁷ Santayana, *The Sense of Beauty*, p.65

⁷³⁸ Santayana, *The Sense of Beauty*, p.65

enabling very different senses of identity and purpose.⁷³⁹ In terms of plot and motivation, we become artisans who are not only made of stardust but have the opportunity to reshape it.

William James wrote:

Religion includes also the following psychological characteristics: - A new zest which adds itself like a gift to life, and takes the form either of lyrical enchantment or of appeal to earnestness and heroism.⁷⁴⁰

With the stellar frame, and doubtless with others, the same religious naturalist may experience both without dissonance. Stars allow us to hold simultaneously, and in productive tension, the unfathomably mysterious that many of us never want to lose with the common need – particularly for existentialists - for understanding and impact now, because they combine, in Santayana’s words, ‘baffling incomprehensibility’ with ‘fierce actuality.’⁷⁴¹

Not everyone – not even every religious naturalist – will find this perspective helpful when considering their own identity. For example, Chet Raymo asks: ‘Is the “I” then only an eddy in a stream, a cyclonic cluster of atoms in a stardust sea, an impermanent turbulence, a contrail of air?’⁷⁴² But as I discussed earlier in this chapter on the forms of material survival emphasised by naturalists, ‘stellar atomic’ endurance may be an affective improvement on ‘mere atomic’ endurance. Neither decays on any meaningful timeframe, so both may make some small contribution to easing the fear of impermanence described by John Haught:

⁷³⁹ Ford, *The Search for Meaning*, p.18

⁷⁴⁰ James, *The Varieties of Religious Experience*, pp.485-86

⁷⁴¹ Santayana, *The Sense of Beauty*, p.67

⁷⁴² Raymo, *Honey from Stone*, p.143

Only participation in such a Permanence can give final meaning to the perishable flux of finite existence...We could have no sense that the temporal participates in the eternal, or that there is any transcendent value, importance or meaning to the evanescent physical universe and our own fleeting lives.⁷⁴³

However, stars may be more compelling because they are generally laden with richer and more desirable affect. The scientific explanation is identical in each case but there is a gulf between the affective tow of the language and symbolism. A human being may be a temporary constellation of stardust – so temporary that even atoms are recycled during life – but we can reshape that stardust and that of other people, other lives, other things, in helpful or harmful ways. A human being can create, from stardust, isomorphic reconstructions of the dead, and of the experiences of the dead, and can be reconstructed in turn.

Conclusion

John Keats sought to develop ‘a system of Salvation which does not affront our reason and humanity.’⁷⁴⁴ This is what I have been trying to do with the notion of material survival through isomorphic reconstructions which can, if desired, be situated within the understanding of the origins of our heavier elements in a supernova. This understanding elevates, I have argued, the idea propounded by another poet, George Eliot, that the deceased ‘live again in minds made better by their presence,’ and ‘make undying music in the world.’

⁷⁴³ John Haught, *Science and the Quest for Cosmic Purpose*, 2000 (www.metanexus.net/science-and-quest-cosmic-purpose/; retrieved 28 April 2021)

⁷⁴⁴ Letter of John Keats to his Brother George and Sister-in-law Georgiana Keats, April 1819. See Robert Gittings (ed.), *Letters of John Keats: A Selection* (Oxford: Oxford University Press, 1970), p.249.

I have been indulging in a mythopoiesis that is intentionally embodied, that seeks to move beyond not just the dualism of mind and body but those of the human and the nonhuman, and indeed the human and the universe itself. It is conventional to think of humans creating mental maps of the universe, but if we get beyond our habitual dualisms, we are stardust weaving that same substance into maps and other representations of the universe at large. As those representations change, the universe changes with them.

CONCLUSION

Shaking the Grass

Science without religion is lame, religion without science is blind.

- Albert Einstein⁷⁴⁵

Throughout history, many long journeys home must have begun on a beach and ended in a garden. I began this thesis on Dover Beach with Matthew Arnold as he lamented the ebbing ‘Sea of Faith.’ Max Weber also sensed an emotional cost to the idea of there being a single, natural realm, invoking a lost ‘enchanted garden.’⁷⁴⁶ I have tried to show how we might maintain a naturalist philosophy and yet return to such a garden, thereby gaining a greater sense that we are, to paraphrase William James, at home in the universe.⁷⁴⁷

I suggested that the three strands of the ACAN – the Problems of Alienation, Demotivation, and Oblivion – are not without weight (especially the latter), but that there are opportunities for religious naturalists to understand how their mythopoeic projects engage our AEC. In doing so, I tried to demonstrate, following Mark Johnson, that ‘coming to grips with your embodiment is one of the most profound philosophical tasks you will ever face.’⁷⁴⁸ EC upsets many familiar boundaries, rejecting dualisms and offering strange new complex monisms: it unifies mind with matter, biology with thought. Indeed, our minds are continuous not only with our bodies but with our ecologies and with the universe at large. With AEC, we can no longer conceive of a pure plane of thought and a separate, messy arena of feeling. These boundary dissolutions entail some conceptual difficulty, yet unleash a bracing power. I showed

⁷⁴⁵ Albert Einstein, ‘Science and Religion’ in *Nature*, volume 146, issue 3706, 1940, p.605

⁷⁴⁶ Weber, *The Sociology of Religion*, p.270

⁷⁴⁷ James, *A Pluralistic Universe*, p.9

⁷⁴⁸ Johnson, *The Meaning of the Body*, p.1

that religious naturalists might enlist this understanding. In doing so, they increase the likelihood that serious engagement with their work may offer the kinds of desired affects that I gathered under the term ‘fullness,’ following Ezra Pound’s poem *And the Days are Not Full Enough*. They have a role in countering his sense that *life slips by like a field mouse, not shaking the grass*.

This thesis is therefore a contribution to what Melvin Konner identifies as:

The key to being human: a sort of wonderment at the spectacle of the world, and its apprehensibility by the mind; a focusing, for the sheer purpose of elevation; an intelligent waking dream. In that capacity, perhaps, we find our greatest distinction, and it may be our salvation.⁷⁴⁹

‘Wonderment,’ ‘elevation,’ and the forging of ‘an intelligent waking dream,’ are common qualities of RN. ‘Salvation’ too, at a stretch. ‘Focusing,’ however, is an essential quality of a doctoral thesis. This one grew in the telling: while I have only been officially developing it since 2016, it has been incubating for at least a quarter of a century, when my early beliefs, already rather frayed, were ravaged by my undergraduate studies in archaeology and anthropology. And yet, despite its length, the journey has still left vast tracts unexplored. I will now therefore retrace my route, marking those paths that were not chosen in order to identify areas for exploration.

In Chapter 1 I offered only a cursory history of the ACAN. A more thorough investigation would reveal, I expect, various arguments and nuances that would have expanded and enriched my conceptions of the Problems of Alienation, Demotivation, and Oblivion, and perhaps resulted in a different structure. In particular, I would have liked to pursue the

⁷⁴⁹ Konner, *The Tangled Wing*, p.171

possibility that RN is still, centuries later, motivated by the idea that the Enlightenment commitment to reason and its Romantic counter-movement might be reconciled.

In Chapter 2 there was space for only a brief survey of what I defined as AEC. I focused upon three strands – affective neuroscience based on Panksepp and Damasio, image schemas, and embodied simulation - which then formed the analytical backbone for the rest of the thesis. However, there is the opportunity to examine how other schools of EC, such as extended cognition, might be harnessed for RN. I also had to reduce my treatment of the three themes to a minimum, and this rather underplays their significance given that, in the words of George Lakoff and Mark Turner, ‘it is vital that we understand...the processes that guide both our everyday understanding and our imagination.’⁷⁵⁰ Each of the three has an extensive primary and secondary literature, and in summarising them and their implications I necessarily omitted swathes of fascinating material that could have contributed to a more comprehensive analysis.

My approach to the reading process was limited, for methodological reasons, to the exact text being read and to likely readers’ expectations of how similar texts unfold. I could not readily examine the influence of previous sections of text or previous experiences, but these may be amenable to specific research programmes delving into individual reader cases. Nor did I expand my coverage beyond reading. According to Philip Johnson-Laird and Keith Oatley, ‘text and film versions of a story have been found to have similar emotional effects...which suggests that cognitive processes for narratives in different genres are comparable.’⁷⁵¹ It would be interesting to pursue the operation of AEC in television and films that fall under the RN banner.⁷⁵²

⁷⁵⁰ George Lakoff and Mark Turner, *More than Cool Reason: A Field Guide to Poetic Metaphor* (Chicago: University of Chicago Press, 1989), p.214

⁷⁵¹ Johnson-Laird and Oatley, ‘Emotions in Music, Literature, and Film,’ p.88

⁷⁵² In *Affective Ecologies*, Alexa Weik von Mossner does this for environmentalist narratives.

In terms of categories of affect, I focused mainly on the broad notion of *fullness* and, later, on wonder. It would have been fascinating to bring together other kinds of experiences deemed religious with naturalism, using the various models that have been constructed. I have in mind the work of writers as diverse as Ann Taves and Marghanita Laski,⁷⁵³ the religious experience archiving project of the Alister Hardy Religious Experience Research Centre at the University of Wales Trinity St David; and, of course, William James's *The Varieties of Religious Experience*, which I used mainly for other purposes.

It was said of evolutionary theorist W. D. Hamilton that 'while the rest of us speak and think in single notes, he thought in chords.'⁷⁵⁴ Analysing AEC can feel like adding another note – or indeed a whole cluster of notes - to the already busy stave of literary criticism with which I engaged during my close reading of David Abram in Chapter 3. One might imagine various analytical superscripts added to a passage of texts: in addition to the poetic (meter, rhyme, and so on), rhetorical, etymological, allusive/intertextual, and other more traditional types of scrutiny, we can now add the somatically marked, the image schematic, and the simulative. There is the potential to examine all manner of sacred and secular texts through this wider, embodied set of lenses.

I concentrated on Abram's particular example of a naturalist imaginary – of reviving Weber's lost 'enchanted garden' - but a more extended analysis would encompass a greater set, perhaps spanning Sideris's 'naturalist' versus 'new cosmologist' divide, or my own existentialist versus connectionist spectrum. This might allow an assessment of the different affective qualities of these various imaginaries, either through reader accounts or more direct experimental methods. Looking beyond naturalism, one could explore the extent to which its imaginaries

⁷⁵³ Taves, *Religious Experience Reconsidered*; Laski, *Everyday Ecstasy*.

⁷⁵⁴ Attributed to Robert Trivers. See Dawkins, *A Devil's Chaplain*, p.206.

might offer similar affective and orientating value as those provided by more traditional religious imaginaries. It would also invite an exploration of how different imaginaries might be combined, beyond my hinting at this possibility in the stellar context in Chapter 6.

I also noted in Chapter 3 a practical application to the heightened awareness of the unseen and unsensed that such imaginaries offer. *The Dasgupta Review on the Economics of Biodiversity* (2021), sponsored by the UK Government, defines the transformation required in economics to account for the value of the natural world. It specifies that ‘three features of Nature – *mobility*, *invisibility* and *silence* – are of profound significance to the economics of biodiversity.’⁷⁵⁵ Naturalist imaginaries could play an important role in generating the continuous, potent, embodied awareness of the invisible, the silent, and the mobile that is necessary to underpin the civilizational transformation demanded by the current crisis.

In Chapter 4 I concurred with Sideris’s denouncement of scientific hubris, even if I grant science slightly more epistemological clout than she seems willing to do. It is particularly interesting that Sideris quotes the final sentences of Loyal Rue’s *By the Grace of Guile* (1994), in which he states that biocentrism is:

a noble lie, one that washes down with a minimum of deception and offers up a maximum of adaptive change. And if it is well and artfully told, it will reenchant the earth and save us from the truth.⁷⁵⁶

⁷⁵⁵ *The Economics of Biodiversity: The Dasgupta Review* (Abridged Version). 2021. London: HM Treasury. p.15 (emphases in the original)

⁷⁵⁶ Loyal Rue, *By the Grace of Guile: The Role of Deception in Natural History and Human Affairs* (New York: Oxford University Press, 1994), p.306

She then suggests that his later, more celebratory works are best interpreted as such ‘noble lies.’⁷⁵⁷ Whether or not one agrees with her assessment, it raises the broader question of whether the provisional nature of scientific understanding undermines its affect. There is, as I noted in Chapter 4, a Problem of Doubt, arguably exacerbating the Problems of Alienation and Demotivation. However, I argued that, while the foundation for RN mythopoiesis is always unstable, the confidence that we can have in better established scientific theories is more sufficient than granted by Sideris.

There remains, however, the opportunity for further research on this Problem of Doubt and how the desire for ‘fullness’ interacts with attitudes such as that attributed to Sharon Welch: ‘We need to be ironic and committed, suspicious and celebrative simultaneously.’⁷⁵⁸ Dennis Ford alludes to a related perspective about meaningfulness that might relate to experiments in RN:

Answering the question of meaning is like acquiring a new skill. We act *as if*, we self-consciously *try out* and *practice* new ways of living and being in response to frustration and meaninglessness until we acquire the *skill of meaning* at a new level. At this new level, meaning once again becomes less self-conscious, self-justifying, and sufficient, as it was before we asked the question.⁷⁵⁹

He concludes, then, that practice will chip away at self-consciousness, something that is well established in learning and development circles: we eventually attain ‘unconscious competence’ in a new skill due to cognitive rewiring. Further research could investigate this process in the specific context of an AEC-aware RN.

⁷⁵⁷ Sideris, *Consecrating Science*, pp.100-1

⁷⁵⁸ Stone, *Religious Naturalism Today*, p.148

⁷⁵⁹ Ford, *The Search for Meaning*, p.257 (emphases in the original)

It would also be worth exploring the notion of intentionality itself (something I began to do but did not prioritise) which entails questions around the affective consequences of self-awareness and the relationship with other ‘applied’ sub-disciplines. What are the affective benefits and opportunities of intentionality? What are the affective costs? There is also the matter of whether there are any ethical issues in what some would call emotional manipulation. This is not easily answered: in a world where such influencing may be an inescapable aspect of our political, economic, and social reality, refusing to compete may itself be ethically dubious.

A significant portion of the chapter argued that the explanation-wonder conundrum is advanced by understanding how we toggle between different modes of attention, such as the focused and global forms examined in depth by Iain McGilchrist. He goes as far as to propose that the reconciliation of these two forms is important for the improvement of humanity. There is certainly more research that could be undertaken into their healthy coexistence, including specific questions such as the details of what McGilchrist calls *reintegration*, and practical instances of it in the context of naturalist imaginaries. However, there is also the opportunity to engage the larger significance to which McGilchrist refers in terms of the climate and ecological crises and how the privileging of either form of attention helps or hinders ethical judgments in different situations.

Chapter 5 left many stones unturned. I omitted the question of how understanding image schemas might help to alleviate the Problem of Demotivation, partly due to spatial constraints, but also because no clear argument emerged from my research. Given that the Problem of Demotivation is largely about the alleged lack of purpose in naturalism, it is noteworthy that the meticulous analysis of Mark Johnson and George Lakoff on image schemas identified a highly influential metaphor in Western culture whereby ‘A Purposeful Life Is A Journey,’ producing a metaphorical mapping in which: ‘A Person Living A Life Is A Traveler, Life Goals Are

Destinations [and] A Life Plan Is An Itinerary.⁷⁶⁰ Elsewhere, Johnson observes that ‘it is an extremely important special case, since the metaphor it establishes is used constantly over and over, every day, and is absolutely vital to our successful functioning.’⁷⁶¹

I pondered – but chose not to proceed with – the question of whether an awareness of how this metaphor functions, in combination with evolved and somatically marked sentiments towards journeys, might help to build motivation. After all, image schemas are not simply about aspects of the body or movement shaping abstract thought; they can sometimes be felt. As Michael Kimmel reports, image schemas ‘can be sensed by readers, often in their bodies, as an arc of FORCE tension or denouement as reinstated BALANCE schema...as electromyography of readers suggests.’⁷⁶²

Carl Sagan’s *Pale Blue Dot* might be a suitable case study here because he begins from the observation that humans are instinctive travellers and pioneers, perhaps because of the evolutionary benefits of journeys in terms of security and finding new resources. This is combined with another influential image schema insofar as Sagan, almost certainly with less intention, invokes the kind of re-containerisation that I analysed in Abram’s case when he (Sagan) meditates on the photograph of the Earth taken from the outer Solar System. This provides the arresting contrast between a planet which seems vast to us, both spatially and in terms of our concerns, and yet it is revealed as a speck in the unimaginably vast blackness of space that he believes contains homes for future generations of human travellers. A detailed study might therefore investigate whether intentionally deploying PURPOSES are JOURNEYS,

⁷⁶⁰ Lakoff and Johnson, *Philosophy in the Flesh*, p.61

⁷⁶¹ Mark Johnson, *The Body in the Mind: The Bodily Basis of Meaning, Imagination, and Reason* (Chicago and London: The University of Chicago Press, 1987), p.115

⁷⁶² Michael Kimmel, ‘Analyzing Image Schemas in Literature,’ *Cognitive Semiotics* 5, 2009, p.173

and other image schemas, has anything substantive to contribute to countering the Problem of Demotivation.

A number of other potential research projects emerge from Chapter 5. I analysed how the affective contours of RN stories about the world and our place in it are shaped by how they (usually unconsciously) draw from the templates of *Rags to Riches*, *Overcoming the Monster*, and *Rebirth* plots, and I focused on Sideris's critique of the 'new cosmology.' However, following H. Porter Abbott's distinction between *story* (the sequence of events) and *narrative discourse* (how that story is conveyed),⁷⁶³ a longer project could investigate the potential choices in narrative discourse in a systematic manner, something that I only addressed in brief.

The inevitable influence of existing literature on RN led me to discuss intertextuality, especially with regards to the cultural heft and affective strengths of the *Rebirth* plot. Entire theses could, I am certain, be devoted to the *Rebirth* plot in history and its modern manifestations, but closer to my own themes I suspect that there is a great deal more to investigate around what might be called 'embodied intertextuality' – in other words, how our embodiment of previous plots or 'scripts' affects subsequent engagement with other texts.

The embodiment of characters and the deceased that I discussed in chapters 5 and 6 prompts several further research possibilities. For instance, many religions (and other philosophies and ideologies) encourage us to embody cherished or heroic figures, even if under the vaguer terms of following their example. There are some intriguing connections to be made to archetypal psychology and folklore, in terms of the enduring character types and roles in mythology, their potential equivalents in naturalist epics, and how these are simulated.⁷⁶⁴ In this

⁷⁶³ Abbott, *The Cambridge Introduction to Narrative*, p.13

⁷⁶⁴ See e.g. Dennis Ford's chapter on the role of archetypal psychology in *The Search for Meaning*, pp.170-94

regard, it is noteworthy that some EC scholars define culture itself in terms of sensorimotor tuning:

We understand culture, that is, sensorimotor tuning, to infuse virtually all knowledge.

Culture does not have domain-specific mechanisms of its own, but works through biases in interactional sensorimotor mechanisms.⁷⁶⁵

This further suggests that motor simulation in particular has not received due attention in the analysis of religious and other texts.

My discussion of *absorption* - of how repeatedly rehearsing simulative and other AEC-related patterns might sculpt matter more permanently – was necessarily brief. There are experimentally accessible questions around how such ‘incarnation’ processes operate which might be brought together with modern understandings of neuroplasticity. To further close the Cartesian chasm, can we not only now say that reading stories changes us physically, but outline some of the processes by which those physical changes occur? A host of questions arise: How do different narratives sculpt plastic brains across the lifespan? How does absorption relate to enchanted and disenchanted states, as understood by the likes of Bennett and Weber? What exactly is imprinted (narrative shape, concepts, emotional associations, and so on) in neural networks repeatedly exposed to a particular religion? Can a brain be rewired for naturalism, and if not, why not, given other examples of learning later in life such as driving or playing a musical instrument?

⁷⁶⁵ Soliman and Glenberg, ‘The embodiment of culture,’ p.211

This leads me to questions of desire and addiction. In *Religious Affects*, Donovan Schaefer asks: ‘what do bodies do for affects?’⁷⁶⁶ It is certainly the case that we seek affects in and of themselves; that is, they may be ‘autotelic.’ Schaefer notes in his essay ‘Beautiful Facts’ that Darwin had observed the same phenomenon:

As Darwin points out, anger is an ‘exciting emotion,’ an autotelic affect. ‘A man when excessively jaded,’ he muses, ‘will sometimes invent imaginary offences and put himself into a passion, unconsciously, for the sake of invigorating himself.’⁷⁶⁷

Similarly, Johnson-Laird and Oatley suggest that people ‘spend much of their time seeking emotions, because to be bereft of them is hardly to be alive.’⁷⁶⁸ Echoing Tolstoy’s *Confession* that one can only live happily when intoxicated, ‘psychopharmacologist’ Ronald Siegel proposes that intoxication is ‘the fourth drive,’ to be bracketed with hunger, thirst, and sex.⁷⁶⁹

It would be fascinating to elaborate this Copernican reversal in which we think less about plots organising emotions and more about emotions organising plots. In other words, we focus less on the notion that, in Loyal Rue’s terms, ‘the emotional life can be manipulated by various means (including symbolic means) for achieving individual and collective goals,’ and instead consider if emotions are manipulating symbolic means.⁷⁷⁰ Peter Brooks, an influential scholar in what is known as psychoanalytic narratology, suggests that plot is ‘an active structuring of

⁷⁶⁶ Schaefer, *Religious Affects*, p.125

⁷⁶⁷ Donovan O. Schaefer, ‘Beautiful Facts: Science, Secularism, and Affect,’ in John Corrigan (ed.), *Feeling Religion* (Durham, NC: Duke University Press), 2018, p.85. Schaefer cites Darwin’s *The Expression of the Emotions in Man and Animals*. It is noteworthy in this context that, as Schaefer observes, Chris Hedges suspects a similar affective desire in New Atheism, which, he claims, ‘reduces the world to a binary formula of good and evil. Religion is a force of darkness. Reason and science are forces of light.’ See Chris Hedges, *I Don’t Believe in Atheists* (New York: Free Press, 2008), p.86.

⁷⁶⁸ Johnson-Laird and Oatley, ‘Emotions in Music, Literature, and Film,’ p.82

⁷⁶⁹ Ronald Siegel, ‘Intoxication: The “Fourth Drive,”’ *The Humanist* 50(5), 1990, p.27. Tolstoy’s *Confession* is discussed in Ford, *The Search for Meaning*, pp.4-6.

⁷⁷⁰ Rue, *Religion Is Not About God*, p.109

experience driven by desire.⁷⁷¹ Here it is tempting to expand what is known as ‘affective narratology’ into what might, with an unavoidable levity, be called ‘pharmacological narratology.’ Recognising the potential ethical issues involved, are there patterns by which readers become hooked – not merely to continue reading a particular narrative – but to rehearse its ideas in the mind over the longer term? And do affective preferences drive an individual’s preferred forms not just of story and narrative discourse, to use Abbott’s terms, but entire chosen philosophies?

Religions, and any other compelling ideologies, derive much of their appeal from the emotional rewards on offer, and it may be that followers not only crave but become addicted to these rewards. Marx and Freud believed that this was mainly to counter negative affects, and Einstein apparently concurred:

Everything that the human race has done and thought is concerned with the satisfaction of deeply felt needs and the assuagement of pain. One has to keep this constantly in mind if one wishes to understand spiritual movements and their development.⁷⁷²

However, as Thomas Tweed emphasises, religions may act at least as much to enhance positive affects: they not only ‘confront suffering’ but ‘intensify joy.’⁷⁷³ Religion’s oft-cited viral quality may derive from its complex of grand narrative and emotion are not only addictive but chemically rewarding and health-enhancing.

In *The Biology of Desire* (2015), Marc Lewis has investigated the related neuroplasticity, whereby changes in the dopamine system generate structural changes in synaptic networks.

⁷⁷¹ The phrase is Patrick Colm Hogan’s (Hogan, *Affective Narratology*, p.17), describing Peter Brooks, *Reading for the Plot: Design and Intention in Narrative* (New York: Vintage Books, 1984)

⁷⁷² Albert Einstein, ‘Religion and Science,’ *New York Times Magazine*, November 9, 1930, p.1

⁷⁷³ Tweed, *Crossing and Dwelling*, pp.69-70.

Circuits dedicated to goal-seeking – what Panksepp refers to as the SEEKING system – can become captivated by the allure of a single target. This may be a drug or gambling, but since the brain has only a few paths for goal-seeking, similar brain changes occur if it is a sport, a lover, or a political movement.⁷⁷⁴ Iain McGilchrist refers to a similar process in the context of the left hemisphere's susceptibility to addiction.⁷⁷⁵ However, this is not always damaging. As Lewis explains:

If the brain region that allows us to imagine the future is synched up with the brain regions that propel us toward our goals, and if that linkage is practiced and reinforced, so that synaptic highways become smooth and efficient, then addiction need be no more than a stage in the development of the self. And that often seems to be exactly what it is.⁷⁷⁶

In our context, it invites the research question as to whether there are (preferably healthy) ways to bond naturalist imaginaries with the SEEKING system. And desire and addiction are so woven into capitalist economies that one wonders to what extent advocates of naturalism might learn from areas of applied neuroscience such as the neuroscience of organisational or business change, or communications interventions like 'neuromarketing.'

In Chapter 6 I used a narrowly defined notion of naturalist soteriology as physical immortality, in order to claim that embodied simulation in particular offers new opportunities. A

⁷⁷⁴ Lewis, *The Biology of Desire*, pp.xv, 17-18, 26. Modern neuroscience has distinguished between systems for 'wanting' and 'liking.' Whereas they often go together, the two psychological processes can be decoupled, as can be seen in many cases of addictions. See Kent C. Berridge and Morten L. Kringelbach, 'From Pleasure to Happiness: "Liking" and "Wanting" in Mind and Brain,' in Lisa Feldman Barrett, Michael Lewis and Jeannette M. Havilland-Jones (eds.), *Handbook of Emotions* (4th edition) (New York: The Guilford Press, 2016), p.141.

⁷⁷⁵ 'The right hemisphere, then, is capable of freeing us through negative feedback. The left hemisphere tends to positive feedback, and we can become stuck. This is not unlike the difference between the normal drinker and the addict...Denial, a left-hemisphere speciality, is typical of addiction.' (McGilchrist, *The Master and his Emissary*, p.87)

⁷⁷⁶ Lewis, *The Biology of Desire*, p.215

much deeper study might broaden that definition and encompass a more thorough examination of the varieties of naturalist soteriology and how they intersect with all the forms of AEC. I might also have developed further the concept of isomorphic material reconstructions by thoroughly examining the relevant empirical studies, especially on what influences different qualities of reconstruction. For example, Benjamin Bergen cites research showing that:

You're more likely to adopt a participant perspective when recalling events that you have a positive attitude toward (like your favorite birthday memory), rather than ones you have a negative attitude toward (like your least favorite birthday memory).⁷⁷⁷

This suggests that the kinds of affects associated with our memories of the deceased (and what others will remember of us) may alter the kinds of simulations, and thus material configurations, that we form about them. The configurations that we produce of the words or writings of the deceased will also depend on their familiarity given that, as Bergen again reports:

The more familiar the expression, the less it activated the motor system...over their careers, metaphorical expressions come to be less and less vivid, less vibrant, at least as measured by how much they drive metaphorical simulations.⁷⁷⁸

There are also individual variations and preferences in, say, the strength of different sensory modalities.⁷⁷⁹ All this also suggests that the kinds of aids we have for remembering the deceased – visual, auditory, olfactory, and other - are likely to be important, but the details of these processes might be scrutinised.

⁷⁷⁷ Bergen, *Louder Than Words*, p.109

⁷⁷⁸ Bergen, *Louder Than Words*, p.206

⁷⁷⁹ Bergen, *Louder Than Words*, p.166

I concluded the chapter by examining the potential of the idea of stardust - as the common origin and identity of both organic and inorganic material on Earth - to act as a focaliser and a frame upon which to hang many concepts developed in earlier chapters. However, it would be possible to extend this in various directions, including a finer analysis of the affective tow of stars and how this might intersect with the many different flavours of RN.

Viewing the project in the round prompts a number of further research questions. It is striking that many religious naturalists appear to have access to rural idylls, and this might limit the demographics to which RN appeals. What approaches for RN might be more suitable for those who live in our increasingly urbanised and developed landscapes? Another cultural path that I did not tread concerns the argument that emotions vary across cultures in significant ways, even if we share common physiologies and emotional circuits defined by Panksepp and Damasio.⁷⁸⁰

My focus has been on texts, and specifically on viewing them through an AEC lens. It would be interesting to complement this with an approach based in rhetoric that illuminated the relationship between rhetorical tropes and AEC. Insofar as RN texts are communications, RN may suffer from a relative lack of narrative maturity, or lack of facility, present in those skilled in the affective techniques of persuasion, like novelists and speechwriters.

The concentration on texts meant deferring the thought experiment of imagining that the whole pageantry of religious ritual – music, clothing, repetition, scents, architecture, symbols, and so on – had grown up around other sets of ideas. Could these be any ideas, or would some fail due to some conceptual or affective weakness? How might this broader set of elements

⁷⁸⁰ See e.g. Batja Mesquita, Jozefien De Leersnyder, and Michael Boiger, 'The Cultural Psychology of Emotions,' in Lisa Feldman Barrett, Michael Lewis and Jeannette M. Havilland-Jones (eds.), *Handbook of Emotions* (4th edition) (New York: The Guilford Press, 2016), pp.393-411

structure, reinforce, and embed the kind of spatial and temporal innovations I proposed from Chapter 3 onwards? The spectre of Comte hovers over this idea, but the obvious clumsiness of his Religion of Humanity – and arguably of some recent attempts to develop RN rituals - means that the door is not closed to further exploration of what Mordecai Kaplan calls the *sancta*: ‘the events, the heroes, the writings, and the occasions signalized by a people as giving concreteness to the values deemed essential by the people to its existence.’⁷⁸¹ On gesture specifically, connections might be made with Tobias Tan’s work on the interaction between symbolic and embodied meanings, particularly in the context of my discussions in Chapter 5 and 6 on simulating other people, real and imaginary.⁷⁸²

I framed the thesis historically in terms of the supposed naturalist disenchantment described by advocates of the ACAN and RN’s attempts to re-enchant the world. Arguably, though, we are triply disenchanted: not just historically, but phylogenetically (due to the more powerfully reflective nature of human versus nonhuman consciousness, as far as we can ascertain), and ontogenetically. Hugh Crago’s approach of considering how the capacity for creating and understanding stories varies in different phases of life raises the prospect of the latter frame: how might RN, especially where informed by AEC, counter the undesirable aspects of the affective and imaginative changes that develop inevitably in each individual?⁷⁸³

I have suggested that knowledge of the physical processes underlying affectively potent narratives may help to develop more potent forms of RN, but there may be emotional benefits more broadly to those who develop an understanding of some of the concepts discussed in this

⁷⁸¹ Mordecai Kaplan, *Dynamic Judaism: The Essential Writings of Mordecai M. Kaplan* (eds. Emanuel S. Goldsmith and Mel Scult (New York: Fordham University Press, 1985)

⁷⁸² Tan, ‘Corporeality in Religious Experience’

⁷⁸³ Crago, *Entranced by Story*

project. Emotional self-knowledge helps emotion regulation, whether we wish to amplify or suppress it any particular case. For Panksepp and Biven:

The goal of therapy is to facilitate a more complex perspective taking in the higher mental apparatus – what Aristotle called *phronesis*, becoming master of one’s passions by understanding ‘low-minded’ ways...A major goal of psychotherapy is to promote cognitive control of affective processes.⁷⁸⁴

Hence, one might explore whether the self-awareness resulting from studying the kinds of processes described here is empowering and has health dividends.

There are potentially some widespread and profound implications extending well beyond religious studies. Because stories are the default mode for how humans inform and persuade, this research has implications for all narratives, whether political, social, economic, legal, or indeed scientific. Whether ideas and stories are socially and politically successful – whether they attain traction – depends largely on affect, of which my chosen strands of AEC are a significant part. All that I have described under mammalian affective systems, image schemas, and embodied simulation could be used as the analytical basis for a range of other philosophies, as a complement to other theoretical approaches, or as a lens on what appear to be very different subjects.

For example, the same processes are almost certainly at work as people encounter various political ideologies and in those who embrace extremism. Theories of conceptual and indeed cultural transmission such as memetics have often been too narrow because they

⁷⁸⁴ Panksepp and Biven, *The Archaeology of Mind*, pp.xvi, 8 (emphasis in the original)

downplay, or do not have a modern understanding of, the role of affects in those processes. Fortunately, communications theory and training – and studies of political rhetoric - are increasingly escaping an exclusively linguistic paradigm, drawing on our knowledge of unconscious and affective structures and how they support messaging and marketing. Their inclusion greatly enriches our understanding of how power operates. It would also be interesting to explore how data science, artificial intelligence, and various emerging technologies may contribute to the abstraction and detachment components of the Problem of Alienation, or, through our everyday engagement with them, alter the kinds of attentional and imaginative processes that I have discussed.

Finally, further research would be valuable into how intentionally co-opting AEC might assist in the transitions required to endure the climate and ecological crises. Human beings are as much a part of nature as any other terrestrial mammal, and we are inadvertently waging war on ourselves. There is value in integrating the perspective offered by AEC not just with the economics of climate change and biodiversity loss (as suggested above in the context of *The Dasgupta Review*) but with its psychology and communications. There is the crucial matter, for example, of the psychology of in-out groups as it pertains to human-nonhuman relationships, something to which numerous RN authors (like Abram) can contribute. Anthropocentrism dominates both our religious and our humanist traditions, and themes like the simulation of the nonhuman, the disruption of the boundaries reinforced by our embodied predisposition for containerisation, and expanding Pankseppian CARE circuits more generously could help with the necessary rebalancing.

Writing more than twenty years ago, Thomas Berry proposed that 'any recovery of the natural world in its full splendor will require not only a new economic system but a conversion

experience deep in the psychic structure of the human.⁷⁸⁵ He also cites Al Gore's suggestion that environmental concern must become 'the central organizing principle of civilization.'⁷⁸⁶ It is difficult to assess the extent to which a genuine spiritual revolution is strictly necessary to accompany the kind of economic transition required, but it would probably facilitate and energise it. Intentional AEC could play a part in such a transformation.

The title of this thesis – *Deeply Religious Belief* - refers to Einstein's idea of becoming 'a deeply religious nonbeliever.' Religious naturalists do believe in something, of course: they believe that our understandings of the world should be guided by our best science, notwithstanding its various difficulties – epistemological, political, in practice - and its eternally provisional propositions. However, they are nonbelievers, or at least strong doubters, when it comes to the existence of any non-natural realm. Einstein conveys the real possibility that believing only in the natural order is nonetheless compatible with 'deeply religious' attitudes. But I hope to have shown that even where an austere epistemology permits only matter, energy, and their emergent forms, naturalism and religious sentiments can be harmonious rather than merely compatible.

Elsewhere, Einstein wrote: 'Science without religion is lame; religion without science is blind.'⁷⁸⁷ I have tried to reveal how an understanding of the ways in which our minds are affectively embodied can help to infuse naturalism with sentiments deemed religious. Such a naturalism is not lame: it gets up and walks, it sometimes runs, and perhaps, on occasion, it flies.

⁷⁸⁵ Berry, *The Great Work*, p.60

⁷⁸⁶ Berry, *The Great Work*, p.200, citing Albert Gore, *Earth in the Balance* (New York: Houghton Mifflin, 1992), p.269

⁷⁸⁷ Einstein, 'Science and Religion,' p.605

BIBLIOGRAPHY

- Abbott, H. Porter. 2002. *The Cambridge Introduction to Narrative*. Cambridge: Cambridge University Press.
- Abram, David. 2010. *Becoming Animal: An Earthly Cosmology*. New York: Vintage.
- Abram, David. 2017. *The Spell of the Sensuous: Perception and Language in a More-than-Human World*. 2nd edition. New York: Vintage. Work originally published 1996.
- Abrams, M. H. 1971. *Natural Supernaturalism: Tradition and Revolution in Romantic Literature*. New York and London: W.W. Norton and Co.
- Appleyard, Bryan. 1992. *Understanding the Present: Science and the Soul of Modern Man*. London: Pan Books.
- Aristotle. 1987. *Poetics*. Translation and notes by Janko, R. Indianapolis, IN: Hackett Publishing Company.
- Aristotle. 2012. *The Art of Rhetoric*. London: HarperCollins.
- Ashbrook, James B. and Albright, Carol Rausch. 1997. *The Humanizing Brain: Where Religion and Neuroscience Meet*. Cleveland, Ohio: Pilgrim Press.
- Asma, Stephen T. 2018. *Why We Need Religion: An Agnostic Celebration of Spiritual Emotions*. New York: Oxford University Press.
- Asma, Stephen T. and Gabriel, Rami. 2019. *The Emotional Mind: The Affective Roots of Culture and Cognition*. Cambridge, MA: Harvard University Press.
- Attenborough, David. 2020. *A Life on our Planet: My Witness Statement and a Vision for the Future*. London: Witness Books.
- Barlow, Connie. 1997. *Green Space, Green Time: The Way of Science*. New York: Copernicus.
- Barnes, Julian. 1989. *A History of the World in 10½ Chapters*. London: Picador.
- Barrett, Justin L. 2011. *Cognitive Science, Religion, and Theology: From Human Minds to Divine Minds*. West Conshohocken, PA: Templeton Press.
- Barsalou, Lawrence W. 1999. 'Perceptual Symbol Systems,' *Behavioral and Brain Sciences* 22, pp.577-609.

- Barsalou, Lawrence W.; Simmons, W. Kyle; Barbey, Aron K.; Wilson, Christine D. 2003. 'Grounding Conceptual Knowledge in Modality-Specific Systems,' *Trends in Cognitive Sciences* 7, pp.84-91.
- Barsalou, Lawrence W.; Barbey, Aron K.; Simmons, W. Kyle; Santos, Ava. 2005. 'Embodiment in Religious Knowledge.' *Journal of Cognition and Culture* 5.1-2, pp.14-57.
- Beck, Lewis White. 1997. *Six Secular Philosophers*. Bristol: Thoemmes Press.
- Bennett, Jane. 2001. *The Enchantment of Modern Life: Attachments, Crossings, and Ethics*. Princeton, NJ: Princeton University Press.
- Bergen, Benjamin K. 2012. *Louder Than Words: The New Science of How the Mind Makes Meaning*. New York: Basic Books.
- Berman, John. 2004. *Terror and Liberalism*. New York and London: W. W. Norton and Company.
- Bernaerts, Lars; De Geest, D.; Herman, L.; and Vervaeck, B. (eds.). 2013. *Stories and Minds: Cognitive Approaches to Literary Narrative*. Lincoln, NE: University of Nebraska Press.
- Bernhardt, William. 1959. 'The Reality Principle in Religion,' *The Iliff Review* 16 (Spring), pp.25-42.
- Berridge, Kent C. and Kringelbach, Morten L. 2016. 'From Pleasure to Happiness: "Liking" and "Wanting" in Mind and Brain.' In Feldman Barrett, Lisa; Lewis, Michael; and Havilland-Jones, Jeannette M. (eds): *Handbook of Emotions* (4th edition). New York: The Guilford Press. pp.133-45.
- Berry, Thomas. 1999. *The Great Work: Our Way into the Future*. New York: Three Rivers Press.
- Berry, Thomas. 1993. 'Human Presence.' In Hutchingson, James E. (ed.): *Religion and the Natural Sciences: The Range of Engagement*. Belmont, CA: Wadsworth Publishing.
- Billington, Ray. 2002. *Religion Without God*. London and New York: Routledge.
- Bonneuil, Christophe. 2015. 'The Geological Turn: The Anthropocene and its Narratives.' In Hamilton, Clive; Bonneuil, Christophe; and Gemenne, François (eds.): *The Anthropocene and the Global Environmental Crisis*. London: Taylor and Francis. pp.17-31.
- Booker, Christopher. 2004. *The Seven Basic Plots: Why We Tell Stories*. London and New York: Continuum.
- Boroditsky, Lera. 2001. 'Does Language Shape Thought? English and Mandarin Speakers' Conceptions of Time,' *Cognitive Psychology* 43(1), pp.1-22.
- Boyer, Pascal. 2001. *Religion Explained: The Human Instincts that fashion Gods, Spirits and Ancestors*. London: William Heinemann.

- Brooks, Peter. 1984. *Reading for the Plot: Design and Intention in Narrative*. New York: Vintage Books.
- Brooks, Rodney A. 1990. 'Elephants don't play chess,' *Robotics and Autonomous Systems* 6, pp.3-15.
- Brown, Callum G. 2001. *The Death of Christian Britain: Understanding Secularisation 1800-2000*. Abingdon and New York: Routledge.
- Burke, Michael. 2011. *Literary Reading, Cognition and Emotion: An Exploration of the Oceanic Mind*. New York and London: Routledge.
- Campbell, Joseph. 1988. *The Power of Myth*. With Moyers, Bill and Flowers, Betty Sue (ed.). New York: Doubleday.
- Campbell, Joseph. 1993. *The Hero with a Thousand Faces*. London: Fontana Press. Work originally published 1949.
- Caracciolo, Marco. 2013. 'Blind Reading: Toward an Enactivist Theory of the Reader's Imagination.' In Bernaerts, Lars *et al.* (eds.): *Stories and Minds: Cognitive Approaches to Literary Narrative*. Lincoln, NE: University of Nebraska Press. pp.81-105.
- Caracciolo, Marco. 2020. 'Embodying the Reader: Perspectives on Fiction, Cognition and the Body.' In Butnaru, Denisa (ed.): *Medial Bodies between Fiction and Faction: Reinventing Corporeality*. Bielefeld: transcript Verlag. pp.205-19.
- Carlyle, Thomas. 1896-99. *Collected Works: The Centenary Edition of the Works of Thomas Carlyle*. London: Chapman and Hall.
- Carruthers, Peter. 1996. 'Simulation and self-knowledge: A defense of theory-theory.' In Carruthers, Peter and Smith, Peter K. (eds.): *Theories of Theories of Mind*. Cambridge: Cambridge University Press. pp.22-68.
- Carson, Rachel. 1997. *The Sense of Wonder: A Celebration of Nature for Parents and Children*. New York: Harper Perennial. Work originally published 1965.
- Cassirer, Ernst. 1948. *The Myth of the State*. New Haven: Yale University Press.
- Cavanaugh, Michael. 1996. *Biotheology: A New Synthesis of Science and Religion*. Lanham, MD: University Press of America.
- Cave, David and Sachs Norris, Rebecca (eds.). 2012. *Religion and the Body: Modern Science and the Construction of Religious Meaning*. Leiden: BRILL.
- Chamovitz, Daniel. 2012. *What a Plant Knows: A Field Guide to the Senses of your Garden – and Beyond*. London: OneWorld Publications.

- Cheung, Kin. 2017. *Meditation and Neural Connections: Changing Sense(s) of Self in East Asian Buddhist and Neuroscientific Descriptions*. Temple University, ProQuest Dissertations Publishing.
- Clark, Andy. 2008. *Supersizing the Mind: Embodiment, Action, and Human Extension*. Oxford and New York: Oxford University Press.
- Clarke, Arthur C. 1962. *Profiles of the Future: An Inquiry into the Limits of the Possible*. London: Victor Gollancz.
- Cohn, Norman. 2011. *The Pursuit of the Millennium: Revolutionary Millenarians and Mystical Anarchists of the Middle Ages*. London: Pimlico. Work originally published 1957.
- Corrington, Robert. 1997. *Nature's Religion*. Lanham, MD: Rowman and Littlefield Publishers.
- Costa, Paolo. 2011. 'A Secular Wonder.' In Levine, George (ed.): *The Joy of Secularism: 11 Essays for How We Live Now*. Princeton and Oxford: Princeton University Press. pp.134-54.
- Cousineau, Phil. 2001. *Once and Future Myths: The Power of Ancient Stories in Modern Times*. Berkeley, CA: Conari Press.
- Cox, Benjamin David. 2018. *Gods Without Faces: Childhood, Religion, and Imagination in Contemporary Japan*. Doctoral thesis.
- Crago, Hugh. 2014. *Entranced by Story: Brain, Tale and Teller, from Infancy to Old Age*. New York and London: Routledge.
- Crosby, Donald A. 2014. *More Than Discourse: Symbolic Expressions of Naturalistic Faith*. Albany, NY: State University of New York Press.
- Crosby, Donald A. and Stone, Jerome A. 2008. *The Routledge Handbook of Religious Naturalism*. Abingdon and New York: Routledge.
- Cupitt, Don. 1984. *The Sea of Faith: Christianity in Change*. London: BBC.
- Currie, Gregory. 2011. 'Empathy for Objects.' In Coplan, Amy and Goldie, Peter (eds.): *Empathy: Philosophical and Psychological Perspectives*. New York: Oxford University Press. pp.82-95.
- Dahl, Roald. 2016. *The BFG*. London: Puffin Books. Work originally published 1982.
- Damasio, Antonio. 2000. *The Feeling of What Happens: Body, Emotion and the Making of Consciousness*. London: Vintage.
- Damasio, Antonio. 2003. *Looking for Spinoza: Joy, Sorrow and the Feeling Brain*. London: William Heinemann.

- Damasio, Antonio. 2006. *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: Putnam. Work originally published 1994.
- Damasio, Antonio. 2012. *Self Comes to Mind: Constructing the Conscious Brain*. London: Vintage.
- Darwin, Charles. 2009. *The Expression of the Emotions in Man and Animals*. New York: Penguin. Work originally published 1872.
- Davies, Douglas J. 2011. *Emotion, Identity, and Religion: Hope, Reciprocity, and Otherness*. Oxford: Oxford University Press.
- Dawkins, Richard. 1989. *The Selfish Gene*. 2nd revised edition. Oxford: Oxford University Press. Work originally published 1976.
- Dawkins, Richard. 1999. *Unweaving the Rainbow: Science, Delusion and the Appetite for Wonder*. London: Penguin.
- Dawkins, Richard. 2004. *A Devil's Chaplain*. London: Phoenix.
- Dawkins, Richard. 2008. *River out of Eden: A Darwinian View of Life*. New York: Basic Books. Work originally published 1995.
- Deacon, Terrence. 1997. *The Symbolic Species: The Co-evolution of Language and the Brain*. London: W. W. Norton and Company.
- De Botton, Alain. 2012. *Religion for Atheists*. London: Hamish Hamilton.
- De Vries, Jacobus J. 2003. 'Cooperation or competition: comments on Rolston.' In Drees, W. B. (ed.): *Is Nature Ever Evil? Religion, Science and Value*. London: Routledge. pp.87-89.
- Dewey, John. 1925. *Experience and Nature*. Chicago: Open Court.
- Dewey, John. 1931. 'Context and Thought,' *University of California Publications in Philosophy* 12(3). Berkeley, CA: University of California Press. pp.203-24.
- Dewey, John. 1934. *A Common Faith*. New Haven and London: Yale University Press.
- Dijkstra, K. and Zwaan, R. A. 2014. 'Memory and action.' In Shapiro, L. (ed.): *The Routledge Handbook of Embodied Cognition*. London and New York: Routledge. pp.296-305.
- Dominguez-Borràs, Judith and Vuilleumier, Patrik. 2013. 'Affective Biases in Attention and Perception.' In Armony, Jorge and Vuilleumier, Patrik (eds.): *The Cambridge Handbook of Human Affective Neuroscience*. New York: Cambridge University Press. pp.331-56.

- Dowd, Michael. 2009. *Thank God for Evolution: How the Marriage of Science and Religion Will Transform Your Life and Our World*. London: Viking.
- Drees, W. B. 2003. 'This Vale of Tears – The Best of All Possible Worlds?' In Drees, W. B. (ed.): *Is Nature Ever Evil? Religion, Science and Value*. London: Routledge. pp.1-8.
- Dreyfus, Hubert and Kelly, Sean Dorrance. 2011. *All Things Shining: Reading the Western Classics to Find Meaning in a Secular Age*. New York: Free Press.
- Dworkin, Ronald. 2013. *Religion Without God*. Cambridge, MA: Harvard University Press.
- Eagleman, David. 2009. *Sum: Tales from the Afterlives*. Edinburgh: Canongate.
- Eagleman, David. 2011. *Incognito: The Secret Lives of the Brain*. Edinburgh: Canongate.
- Eagleman, David. 2015. *The Brain: The Story of You*. Edinburgh: Canongate.
- Eagleton, Terry. 2014. *Culture and the Death of God*. New Haven and London: Yale University Press.
- Eaves, Lindon B. 2003. "'Ought'" in a world that just "'is.'" In Drees, W. B. (ed.): *Is Nature Ever Evil? Religion, Science and Value*. London: Routledge. pp.284-309.
- Einstein, Albert. 1930. 'Religion and Science,' *New York Times Magazine*, November 9, pp.1-4.
- Einstein, Albert. 1940. 'Science and Religion,' *Nature*, volume 146, issue 3706. pp.605-7
- Eisenberger, Naomi. 2016. 'Social Pain and Social Pleasure: Two Overlooked but Fundamental Mammalian Emotions?' In Barrett, Lisa Feldman; Lewis, Michael; and Havilland-Jones, Jeannette M. (eds.): *Handbook of Emotions* (4th edition). New York: The Guilford Press, pp.440-52.
- Eisenstein, Charles. 2018. *Climate: A New Story*. Berkeley, CA: North Atlantic Books.
- Eliade, Mircea. 1987. *The Sacred and the Profane: The Nature of Religion*. Orlando, FL: Harcourt. Work originally published 1957.
- Fitzgerald, Timothy. 1997. 'A Critique of "Religion" as a Cross-Cultural Category,' *Method and Theory in the Study of Religion* 9(2), pp.91–110.
- Flanagan, Owen. 2003. *The Problem of the Soul: Two Visions of Mind and How to Reconcile Them*. New York: Basic Books.
- Flood, Gavin. 2012. *The Importance of Religion: Meaning and Action in our Strange World*. Chichester: Wiley-Blackwell.

- Ford, Dennis. 2017. *The Search for Meaning: A Short History*. Berkeley, Los Angeles and London: University of California Press.
- Fredericks, Sarah E. 2019. 'Reacting to Consecrating Science: What Might Amateurs Do?' *Zygon* 54(2), pp.354-81.
- Freedberg, David and Gallese, Vittorio. 2007. 'Motion, Emotion and Empathy in Esthetic Experience,' *Trends in Cognitive Sciences* 11(5), pp.197-203.
- Gallese, Vittorio. 2005. 'Embodied Simulation: From Neurons to Phenomenal Experience,' *Phenomenology and the Cognitive Sciences* 4, pp.23-48.
- Gallese, Vittorio. 2011. 'Mirror Neurons and Art.' In Bacci, F. and Melcher, D. (eds.): *Art and the Senses*. New York: Oxford University Press. pp.441-49.
- Gallese, Vittorio and Lakoff, George. 2005. 'The Brain's Concepts: The Role of the Sensory-Motor System in Conceptual Knowledge,' *Cognitive Neuropsychology* 22 (3-4), pp.455-79.
- Geary, James. 2011. *I Is An Other: The Secret Life of Metaphor and How it Shapes the Way We See the World*. New York: Harper Perennial.
- Geertz, Clifford. 1973. *The Interpretation of Cultures*. New York: Harper and Row.
- Gerrig, Richard J. 1998. *Experiencing Narrative Worlds: On the Psychological Activities of Reading*. Boulder, CO: Westview.
- Gerth, H. H. and Wright Mills, C. (eds.). 1981. *From Max Weber: Essays in Sociology*. New York: Oxford University Press.
- Gibson, James J. 1979. *The Ecological Approach to Visual Perception*. Boston, MA and London: Houghton Mifflin.
- Gittings, Robert (ed.). 1970. *Letters of John Keats: A Selection*. Oxford: Oxford University Press.
- Glenberg, Arthur and Kaschak, Michael. 2002. 'Grounding Language in Action,' *Psychonomic Bulletin and Review* 9, pp.558-65.
- Godfrey-Smith, Peter. 2018. *Other Minds: The Octopus and the Evolution of Intelligent Life*. London: William Collins.
- Goodenough, Ursula. 1994. 'What Science Can and Cannot Offer to a Religious Narrative,' *Zygon* 29(3), pp.321-330.
- Goodenough, Ursula. 1998. *The Sacred Depths of Nature*. Oxford: Oxford University Press.

- Goodenough, Ursula. 2000. 'Reflections on Scientific and Religious Metaphor,' *Zygon* 35(2), pp.233-40.
- Goodenough, Ursula. 2001. 'Vertical and Horizontal Transcendence,' *Zygon* 36(1), pp.21-31.
- Goodenough, Ursula. 2001. 'A Setback to the Dialogue: A Response to Huston Smith,' *Zygon* 36(2), pp.201-206.
- Goodenough, Ursula and Woodruff, Paul. 2001. 'Mindful virtue, mindful reverence,' *Zygon* 36(4), pp.585-95.
- Gore, Albert. 1992. *Earth in the Balance*. New York: Houghton Mifflin.
- Gould, Stephen Jay. 2002. *Rocks of Ages: Science and Religion in the Fullness of Life*. London: Vintage.
- Gray, John. 2002. *Straw Dogs: Thoughts On Humans and Other Animals*. London: Granta.
- Gray, John. 2014. *The Silence of Animals: On Progress and Other Modern Myths*. London: Penguin.
- Gray, John. 2018. *Seven Types of Atheism*. London: Allen Lane.
- Guthrie, Stewart. 1980. 'A Cognitive Theory of Religion,' *Current Anthropology* 21(2), pp.181-203.
- Haidt, Jonathan. 2003. 'Elevation and the positive psychology of morality.' In Keyes, Corey L. M., and Haidt, Jonathan (eds.): *Flourishing Positive Psychology and the Life Well-Lived*. Washington, D.C.: American Psychological Association. pp.279-89.
- Hamilton, Clive. 2015. 'Human Destiny in the Anthropocene.' In Hamilton, Clive; Bonneuil, Christophe; and Gemenne, François (eds.): *The Anthropocene and the Global Environmental Crisis*. London: Taylor and Francis. pp.32-43.
- Hamilton, W. D. 1964. 'The genetic evolution of social behaviour,' *Journal of Theoretical Biology* 7, pp.1-16.
- Haraway, Donna. 1991. *Simians, Cyborgs and Women: The Reinvention of Nature*. New York: Routledge.
- Harrison, Peter. 2015. *The Territories of Science and Religion*. Chicago and London: University of Chicago Press.
- Harvey, Graham. 2017. *Animism: Respecting the Living World*. 2nd edition. London: Hurst.
- Haight, John. 2003. *Deeper than Darwin: The Prospect for Religion in the Age of Evolution*. Boulder, CO and Oxford: Westview Press.

- Haight, John F. 2017. *The New Cosmic Story: Inside Our Awakening Universe*. New Haven and London: Yale University Press.
- Havas, D. A. *et al.* 2010. 'Cosmetic Use of Botulinum Toxin-A Affects Processing of Emotional Language,' *Psychological Science* 21(7), pp.895-900.
- Hedges, Chris. 2008. *I Don't Believe in Atheists*. New York: Free Press.
- Heider, F., and Simmel, M. 1944. 'An experimental study of apparent behavior,' *The American Journal of Psychology* 57, pp.243-259.
- Herman, David. 2014. 'Narratology beyond the Human,' *Diegesis* 3(2), pp.131-43.
- Herrnstein Smith, Barbara. 2009. *Natural Reflections: Human Cognition at the Nexus of Science and Religion*. New Haven and London: Yale University Press.
- Hick, John. 2010. *Between Faith and Doubt: Dialogues on Religion and Reason*. Basingstoke: Palgrave MacMillan.
- Hoffman, Donald D. 2006. Entry in John Brockman (ed.): *What We Believe But Cannot Prove*. London: Pocket Books. pp.93-96.
- Hoffman, Donald D. 2009. 'Non-veridical Perception.' In John Brockman (ed.): *What Have You Changed Your Mind About?* New York: Harper Perennial. pp.75-77.
- Hoffman, Donald D. 2012. 'Our Sensory Desktop.' In John Brockman (ed.): *This Will Make You Smarter*. London: Transworld. pp.135-38.
- Hoffman, Donald D. 2019. *The Case Against Reality: How Evolution Hid the Truth from Our Eyes*. London: Allen Lane.
- Hogan, Patrick Colm 2011. *Affective Narratology: The Emotional Structure of Stories*. Lincoln: University of Nebraska Press.
- Hogan, Patrick Colm. 2011. *What Literature Teaches Us about Emotion*. New York: Cambridge University Press.
- Holdrege, Craig. 2008. 'Can We See with Fresh Eyes? Beyond a Culture of Abstraction.' In Vitek, Bill and Jackson, Wes (eds.): *The Virtues of Ignorance: Complexity, Sustainability, and the Limits of Knowledge*. Lexington: University of Kentucky Press. pp.323-34.
- Holloway, Richard. 2012. *Leaving Alexandria: A Memoir of Faith and Doubt*. Edinburgh: Canongate
- Hutto, Daniel D. (ed.). 2007. *Narrative and Understanding Persons*. Cambridge: Cambridge University Press.

Huxley, Aldous. 1929. *Do What You Will*. London: Chatto and Windus.

Huxley, Thomas H. 2003. *Evolution and Ethics* (Romanes Lecture). Fairfield, IA: 1st World Library. Work originally published 1894.

Immordino-Yang, Mary Helen. 2016. *Emotions, Learning, and the Brain: Exploring the Educational Implications of Affective Neuroscience*. New York: W. W. Norton and Company.

Jablonka, Eva and Lamb, Marion J. 2014. *Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life*. Revised edition. Cambridge, MA and London: MIT Press.

James, William. 1890. *The Principles of Psychology*. New York: Henry Holt and Co.

James, William. 1896. *The Will to Believe: and Other Essays in Popular Philosophy*. New York and London: Longmans, Green.

James, William. 1907. *Pragmatism: A New Name for Some Old Ways of Thinking*. Cambridge, Cambridge University Press.

James, William. 1920. *The Letters*, volume II. (ed. James III, Henry). Boston: Atlantic Monthly Press.

James, William. 1987. *Writings, 1902-1910*. New York: Library Classics of the United States.

James, William. 2002. *The Varieties of Religious Experience: A Study in Human Nature*. Amherst, NY: Prometheus Books. Work originally published 1902.

William James. 2012. *A Pluralistic Universe: Hibbert Lectures at Manchester College on the Present Situation in Philosophy*. Auckland: The Floating Press. Work originally published 1909.

Jeannerod, M. 1994. 'The Representing Brain: Neural Correlates of Motor Intention and Imagery,' *Behavioral and Brain Sciences*, 17, pp.187-245.

Jeeves, Malcolm and Brown, Warren S. 2009. *Neuroscience, Psychology, and Religion: Illusions, Delusions, and Realities about Human Nature*. West Conshohocken, PA: Templeton Press.

Johnson, Mark. 2007. *The Meaning of the Body: Aesthetics of Human Understanding*. Chicago and London: University of Chicago Press.

Johnson-Laird, P. N. and Oatley, Keith. 2016. 'Emotions in Music, Literature, and Film.' In Barrett, Lisa Feldman; Lewis, Michael; and Havilland-Jones, Jeannette M. (eds.): *Handbook of Emotions* (4th edition). New York: The Guilford Press. pp.82-97.

- Jong, Jonathan and Halberstadt, Jamin. 2016. *Death Anxiety and Religious Belief*. London and New York: Bloomsbury.
- Kahneman, Daniel. 2011. *Thinking, Fast and Slow*. London: Allen Lane.
- Kalton, Michael C. 2000. 'Green Spirituality: Horizontal Transcendence.' In Miller, Melvin E. and Young-Eisendrath, Polly (eds.): *The Psychology of Mature Spirituality: Integrity, Wisdom, Transcendence*. London and Philadelphia: Routledge. pp.148-58.
- Kant, Immanuel. 2000. *Critique of the Power of Judgment* (The Cambridge Edition of the Works of Immanuel Kant). Guyer, Paul (ed.), Guyer, Paul and Matthews, Eric (trans.). Cambridge: Cambridge University Press. Work originally published 1790.
- Kaplan, Mordecai. 1985. *Dynamic Judaism: The Essential Writings of Mordecai M. Kaplan*. Goldsmith, Emanuel S. and Scult, Mel (eds.). New York: Fordham University Press.
- Kaschak, Michael P.; Jones, John L.; Carranza, Julie; and Fox, Melissa R. 2014. 'Embodiment and language comprehension.' In Shapiro, Lawrence (ed.): *The Routledge Handbook of Embodied Cognition*. London and New York: Routledge. pp.118-26.
- Keary, Charles Francis. 1882. *Outlines of Primitive Belief among the Indo-European Races*. London: Longmans, Green.
- Keats, John. 1820. *Lamia*, Pt II, from *Poems*.
- Keen, Sam. 1973. *Apology for Wonder*. New York: Harper.
- Keulartz, Jozef. 2003. 'Rolston: A contemporary physico-theologian.' In Drees, W. B. (ed.): *Is Nature Ever Evil? Religion, Science and Value*. London: Routledge. pp.90-93.
- Keunen, Bart. 2013. 'Plot, Morality, and Folk Psychology Research.' In Bernaerts, Lars *et al.* (eds.): *Stories and Minds: Cognitive Approaches to Literary Narrative*. Lincoln, NE: University of Nebraska Press. pp.175-97.
- Keysers, C.; Wicker, B.; Gazzola, V.; Anton, J-L.; Fogsi, L.; and Gallese, V. 2004. 'A Touching Sight: SII/PV Activation during the Observation and Experience of Touch,' *Neuron* 42(2), pp.335-46.
- Kimmel, Michael. 2009. 'Analyzing Image Schemas in Literature,' *Cognitive Semiotics*, 5, pp.159-88.
- Kitcher, Philip. 2009. 'Beyond Disbelief.' In Blackford, Russell and Schüklenk, Udo (eds.): *50 Voices of Disbelief: Why We Are Atheists*. Chichester: Blackwell. pp.86-96.
- Köhler, Wolfgang. 1929. *Gestalt Psychology*. New York: Liveright.

Konner, Melvin. 2003. *The Tangled Wing: Biological Constraints on the Human Spirit* (2nd edition). New York: Henry Holt and Company.

Kosslyn, Stephen M. 1994. *Image and Brain: The Resolution of the Imagery Debate*. Cambridge, MA: MIT Press.

Kripal, J. J. 2004. 'Re-Reading Bernard of Clairvaux's *Sermones Super Cantica Canticorum*,' in Belzen, Jacob A. and Geels, Antoon (eds.): *Mysticism: A Variety of Psychological Perspectives*. Amsterdam: Rodopi. pp.125-50.

Kristeva, Julia. 1980. 'Word, Dialogue, and Novel,' in Kristeva, Julia: *Desire in Language: A Semiotic Approach to Literature and Art*. Roudiez, Leon S. (ed.). New York: Columbia University Press.

Kumar, Satish and Whitefield, Freddie (eds.). 2006. *Visionaries of the 20th Century: A Resurgence Anthology*. Totnes: Green Books.

Kuzmičová, Anežka. 2013. 'The Words and Worlds of Literary Narrative: The Trade-off between Verbal Presence and Direct Presence in the Activity of Reading.' In Bernaerts, Lars *et al.* (eds.): *Stories and Minds: Cognitive Approaches to Literary Narrative* (Lincoln, NE: University of Nebraska Press), pp.107-29.

Kuzmičová, Anežka. 2014. 'Literary Narrative and Mental Imagery: A View from Embodied Cognition,' *Style* 48(3), pp.275-93.

Laden, Anthony Simon. 2007. *Transcendence without God: On Atheism and Individuality*. In Antony, Louise M. (ed.): *Philosophers without Gods: Meditations on Atheism and the Secular Life*. Oxford: Oxford University Press. pp.121-32.

Lakoff, George and Johnson, Mark. 1980. *Metaphors We Live By*. Chicago and London: University of Chicago Press.

Lakoff, George and Johnson, Mark. 1999. *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.

Lakoff, George and Turner, Mark. 1989. *More than Cool Reason: A Field Guide to Poetic Metaphor*. Chicago: University of Chicago Press.

Laland, Kevin N. *et al.* 2015. 'The extended evolutionary synthesis: its structure, assumptions and predictions,' *Proceedings of the Royal Society B*, Volume 282, Issue 1813.

Lancaster, Simon. 2015. *Winning Minds: Secrets from the Language of Leadership*. London: Palgrave MacMillan.

Lancaster, Simon. 2017. *You Are Not Human: How Words Kill*. London: Biteback Publishing.

- Landry, Travis. 2006. 'The Taming of the Literary Animal,' *Evolutionary Psychology* 4, pp.49-56.
- Landy, Joshua and Saler, Michael. 2009. *The Re-Enchantment of the World: Secular Magic in a Rational Age*. Stanford: Stanford University Press.
- Laski, Marghanita. 1980. *Everyday Ecstasy*. London: Thames and Hudson.
- Levine, George. 2006. *Darwin Loves You: Natural Selection and the Re-enchantment of the World*. Princeton: Princeton University Press.
- Lewis, Marc. 2015. *The Biology of Desire: Why Addiction is Not a Disease*. Brunswick and London: Scribe Publications.
- Locke, John. 2008. *An Essay Concerning Human Understanding*. Oxford: Oxford University Press. Work originally published 1689.
- Lutz, Antoine; Dunne, John; and Davidson, Richard. 2007. 'Meditation and the Neuroscience of Consciousness: An Introduction.' In Zelazo, Philip; Moscovitch, Morris; and Thompson, Evan (eds.): *The Cambridge Handbook of Consciousness*. Cambridge: Cambridge University Press. pp.499-551.
- Macalister, Todd. 2020. *Looking to Nature: Exploring a Modern Way of being Spiritual without the Supernatural*. Berkeley, CA: Apocryphile Press.
- Maiese, Michelle. 2011. *Embodiment, Emotion, and Cognition*. London: Palgrave MacMillan.
- Marcus, Gary. 2008, *Kluge: The Haphazard Construction of the Human Mind*. London: Faber and Faber.
- Martin, George R. R. 2013. *A Dance with Dragons*. London: Bantam Books.
- May, Rollo. 1991. *The Cry for Myth*. New York and London: W. W. Norton and Company.
- McCauley, Robert N. 2011. *Why Religion is Natural and Science is Not*. New York: Oxford University Press.
- McCutcheon, Russell. 1997. *Manufacturing Religion: The Discourse on Sui Generis Religion and the Politics of Nostalgia*. New York: Oxford University Press.
- McGilchrist, Iain. 2009. *The Master and his Emissary: The Divided Brain and the Making of the Western World*. New Haven and London: Yale University Press.
- McGlone, Matthew S. and Tofighbakhsh, Jessica. 1999. 'The Keats heuristic: rhyme as reason in aphorism interpretation,' *Poetics* 26(4), pp.235-44.

- McNamara, Patrick. 2009. *The Neuroscience of Religious Experience*. New York: Cambridge University Press.
- Meland, Bernard. 1934. *Modern Man's Worship: A Search for Reality in Religion*. New York: Harper and Brothers.
- Merleau-Ponty, Maurice. 1962. *Phenomenology of Perception*. Smith, Colin (trans.). London: Routledge and Kegan Paul. Work originally published 1945.
- Mesquita, Batja; De Leersnyder, Jozefien; and Boiger, Michael. 2016. 'The Cultural Psychology of Emotions.' In Barrett, Lisa Feldman; Lewis, Michael; and Havilland-Jones, Jeannette M. (eds.): *Handbook of Emotions* (4th edition). New York: The Guilford Press. pp.393-411.
- Middleton Murry, J. 1975. *The Problem of Style*. London: Oxford University Press. Work originally published 1922.
- Midgley, Mary. 2001. *Science and Poetry*. London and New York: Routledge.
- Midgley, Mary. 2002. *Evolution as a Religion: Strange Hopes and Stranger Fears*. London and New York: Routledge. Work originally published 1985.
- Midgley, Mary. 2002. *Science as Salvation: A Modern Myth and its Meaning*. London and New York: Routledge. Work originally published 1992.
- Midgley, Mary. 2003. 'Criticizing the Cosmos.' In Drees, W. B. (ed.): *Is Nature Ever Evil? Religion, Science and Value*. London: Routledge. pp.11-26.
- Mill, John Stuart. 1874. *Three Essays on Religion*. New York: Henry Holt.
- Monbiot, George. 2014. *Feral: Rewilding the Land, Sea and Human Life*. London: Penguin
- Moore, Thomas. 1996. *The Re-Enchantment of Everyday Life*. New York: Harper Collins.
- Naess, Arne. 1995. 'Self-realization: An ecological approach to being in the world.' In George Sessions (ed.): *Deep Ecology for the 21st Century*. Boston and London: Shambhala. pp.225-39.
- Naess, Arne. 2008. *Ecology of Wisdom*. London: Penguin Random House.
- Nagel, Thomas. 1974. 'What Is It Like to Be a Bat?' *The Philosophical Review*, 83(4), pp. 435-450.
- Nagel, Thomas. 2010. *Secular Philosophy and the Religious Temperament: Essays 2002-2008*. New York: Oxford University Press.

- Neal, David T. and Chartrand, Tanya L. 2011. 'Embodied Emotion Perception: Amplifying and Dampening Facial Feedback Modulates Emotion Perception Accuracy,' *Social Psychological and Personality Science* 2(6), pp.673-678.
- Newen, Albert; De Bruin, Leon; and Gallagher, Shaun (eds.): 2018. *The Oxford Handbook of 4E Cognition*. Oxford: Oxford University Press.
- Niedenthal, Paula M.; Rohmann, Anette; and Dalle, Nathalie. 2003. 'What is Primed by Emotion Concepts and Emotion Words?' In Musch, Jochen and Klauer, Karl C. (eds.): *The Psychology of Evaluation*. Mahwah, NJ: Lawrence Erlbaum Associates. pp.307-33.
- Niedenthal, Paula; Wood, Adrienne; and Rychlowska, Magdalena. 2014. 'Embodied emotion concepts.' In Shapiro, Lawrence (ed.): *The Routledge Handbook of Embodied Cognition*. London and New York: Routledge. pp.240-49.
- Nietzsche, Friedrich. 1992. *Ecce Homo: How One Becomes What One Is*. London: Penguin Books. Original work written 1888, published 1908.
- Nietzsche, Friedrich. 1995. *The Birth of Tragedy*. Mineola, NY: Dover Publications. Original work published 1872.
- Nietzsche, Friedrich. 2006. *The Gay Science*. Mineola, NY: Dover Publications. Original work published 1882.
- Nongbri, Brent. 2013. *Before Religion: A History of a Modern Concept*. New Haven and London: Yale University Press.
- Noss, Reed F. 1992. 'Issues of Scale in Conservation Biology.' In Fiedler, P. L. and Jain, Subodh K. (eds.): *Conservation Biology*. New York: Chapman and Hall. pp.239-50.
- Oatley, Keith. 2012. *The Passionate Muse: Exploring Emotion in Stories*. New York: Oxford University Press.
- Oberman, Lindsay M. and Ramachandran, Vilayanur S. 2007. 'The simulating social mind: the role of the mirror neuron simulation system and simulation in the social and communicative deficits of autism spectrum disorders,' *Psychological Bulletin* 133(2), pp.310-27.
- Obermeier, Christian *et al.* 2013. 'Aesthetic and emotional effects of meter and rhyme in poetry,' *Frontiers in Psychology, Volume 4, Article 10*.
- Oliver, Mary Beth. 2008. 'Tender Affective States as Predictors of Entertainment Preference,' *Journal of Communication*, 58(1), pp.40-61.

- Oosterwijk, Suzanne and Barrett, Lisa Feldman. 2014. 'Embodiment in the construction of emotion experience and emotion understanding.' In Shapiro, Lawrence (ed.): *The Routledge Handbook of Embodied Cognition*. London and New York: Routledge. pp.250-60.
- Panksepp, Jaak. 1998. *Affective Neuroscience: The Foundations of Human and Animal Emotions*. New York and Oxford: Oxford University Press.
- Panksepp, Jaak and Biven, Lucy. 2012. *The Archaeology of Mind: Neuroevolutionary Origins of Human Emotions*. New York and London: W. W. Norton and Company.
- Pascal, Roy. 1953. *The German Sturm und Drang*. Manchester: Manchester University Press.
- Peacocke, Arthur. 2007. *All That Is: A Naturalistic Faith for the Twenty-First Century*. Minneapolis, MN: Fortress Press.
- Peterson, Gregory R. 2003. *Minding God: Theology and the Cognitive Sciences*. Minneapolis, MN: Fortress Press.
- Pirsig, Robert M. 1991. *Zen and the Art of Motorcycle Maintenance: An Inquiry into Values*. London: Vintage. Original work published 1974.
- Polti, Georges. 1940. *The Thirty-Six Dramatic Situations*. Boston, MA: The Writer. Work originally published 1895.
- Protevi, John. 2009. *Political Affect: Connecting the Social and the Somatic*. Minneapolis: University of Minnesota Press.
- Proust, Marcel. 1954. *Le Temps Retrouvé*. Paris: Gallimard. Original work published 1927.
- Ranganathan, V. K.; Siemionow, V.; Liu, J. Z.; Sahgal, V.; and Yue, G. H. 2004. 'From mental power to muscle power – gaining strength by using the mind,' *Neuropsychologia* 42(7), pp.944-56.
- Raymo, Chet. 1987. *Honey from Stone*. Dingle, County Kerry: Brandon.
- Raymo, Chet. 2008. *When God is Gone Everything is Holy: The Making of a Religious Naturalist*. Notre Dame, IN: Sorin Books.
- Read, Rupert. 2012. Review of Iain McGilchrist's *The Master and His Emissary*, *Phenomenology and the Cognitive Sciences* 11(1), pp.119–124.
- Rolston, Holmes. 2006. *Science and Religion: A Critical Survey*. Philadelphia: Templeton Foundation Press. Original work published 1987.
- Roth, Randolph. 2011. Review of Iain McGilchrist's *The Master and His Emissary*, *The Journal of Interdisciplinary History*, 41(4), pp.619–620.

Rousseau, Jean-Jacques. 2019. *Discourse on the Sciences and the Arts*. In Rousseau, Jean-Jacques: *The Discourses and Other Early Political Writings*. Gourevitch, Victor (ed. and trans.). Cambridge: Cambridge University Press. Original work published 1750.

Royzman, Edward B. and Rozin, Paul. 2006. 'Limits of symhedonia: The differential role of prior emotional attachment in sympathy and sympathetic joy.' *Emotion* 6(1), pp.82-93.

Rue, Loyal. 1989. *Amythia: Crisis in the Natural History of Western Culture*. Tuscaloosa, AL: University of Alabama Press.

Rue, Loyal. 1994. *By the Grace of Guile: The Role of Deception in Natural History and Human Affairs*. New York: Oxford University Press.

Rue, Loyal. 1995. 'Epic of Evolution.' In Taylor, Bron (ed.): *The Encyclopedia of Religion and Nature*. London and New York: Continuum.

Rue, Loyal. 2000. *Everybody's Story: Wising Up to the Epic of Evolution*. Albany, NY: State University of New York Press.

Rue, Loyal. 2005. *Religion Is Not About God: How Spiritual Traditions Nurture our Biological Nature and What to Expect When They Fail*. New Brunswick, NJ and London: Rutgers University Press.

Rue, Loyal. 2011. *Nature is Enough: Religious Naturalism and the Meaning of Life*. Albany, NY: State University of New York Press.

Ruper, Stefani. 2020. *Salvation through Science Alone: The Soteriological Potential of Science in Case Studies of Ursula Goodenough, Sam Harris and E. O. Wilson*. DPhil thesis, Oxford University.

Russell, Bertrand. 1918. *Mysticism and Logic*. London: Edward Arnold.

Sagan, Carl. 1973. *The Cosmic Connection: An Extraterrestrial Perspective*. Garden City, NY: Anchor Press.

Sagan, Carl. 1997. *Pale Blue Dot: A Vision of the Human Future in Space*. New York: Ballantine Books. Work originally published 1994.

Sagan, Carl. 1997. *The Demon-Haunted World: Science as a Candle in the Dark*. New York: Ballantine Books.

Sagan, Carl. 2006. *The Varieties of Scientific Experience: A Personal View of the Search for God*. New York: The Penguin Press.

Sanders, Russell Scott. 1997. 'The Power of Stories,' *The Georgia Review* 51(1), pp.113-26.

- Santayana, George. 1954. *The Life of Reason*. New York: Chas. Scribner's Sons. Work originally published 1905-6.
- Santayana, George. 1955. *The Sense of Beauty: Being the Outline of Aesthetic Theory*. New York: Dover Publications. Work originally published 1896.
- Santayana, George. 1957. *Interpretations of Poetry and Religion*. New York: Harper. Work originally published 1900.
- Santayana, George. 1989. *Interpretations of Poetry and Religion*. Holzberger, William G. and Saatkamp Jr., Herman J. (eds.). Cambridge, MA: MIT Press.
- Santayana, George. 2005. *The Life of Reason: Reason in Religion*. Project Gutenberg e-book. Work originally published 1905-6.
- Santayana, George. 2005. *Interpretations of Poetry and Religion*. Project Gutenberg e-book. Work originally published 1900.
- Santayana, George. 2011. *The Life of Reason: Reason in Religion*. Wokeck, Marianne S. and Coleman, Martin A. (eds.). Cambridge, MA and London: MIT Press. Originally published 1905-6.
- Scarry, Elaine. 1999. *Dreaming by the Book*. New York: Farrar, Straus, Giroux.
- Schaefer, Donovan O. 2015. *Religious Affects: Animality, Evolution, and Power*. Durham and London: Duke University Press.
- Schaefer, Donovan O. 2018. 'Beautiful Facts: Science, Secularism, and Affect.' In John Corrigan (ed.): *Feeling Religion*. Durham, NC: Duke University Press. pp.69-92.
- Schaefer, Donovan O. 2019. *The Evolution of Affect Theory: The Humanities, the Sciences, and the Study of Power*. Cambridge: Cambridge University Press.
- Schaefer, Donovan O. 2019. 'Mere Science: Mapping the Land Bridge between Emotion, Politics, and Ethics,' *Zygon* 54(2), pp.382-386.
- Scheff, Thomas J. 1979. *Catharsis in Healing, Ritual, and Drama*. Berkeley, CA: University of California Press.
- Schopenhauer, Arthur. 1966. *The World as Will and Representation, Vol. I*. Payne, E. (trans). New York: Dover Publications. Work originally published 1818.
- Scorilli, Claudia. 2014. 'Embodiment and Language.' In Shapiro, Lawrence (ed.): *The Routledge Handbook of Embodied Cognition*. London and New York: Routledge. pp.127-38.
- Segal, Robert A. 2004. *Myth: A Very Short Introduction*. Oxford: Oxford University Press.

- Shapiro, Lawrence. 2011. *Embodied Cognition*. London and New York: Routledge.
- Sheets-Johnstone, Maxine. 2011. *The Primacy of Movement*. 2nd edition. Amsterdam and Philadelphia: John Benjamins.
- Sheldrake, Merlin. 2020. *Entangled Life: How Fungi Make our Worlds, Change our Minds and Shape our Futures*. London: Bodley Head.
- Sideris, Lisa H. 2017. *Consecrating Science: Wonder, Knowledge, and the Natural World*. Oakland, CA: University of California Press.
- Sideris, Lisa H. 2019. 'Wonder Sustained: A Reply to Critics,' *Zygon* 54(2), pp.426-453.
- Siegel, Ronald. 1990. 'Intoxication: The "Fourth Drive,"' *The Humanist* 50(5), p.27.
- Singer, Peter. 1981. *The Expanding Circle: Ethics and Sociobiology*. Oxford: Oxford University Press.
- Slovic, Scott and Slovic, Paul (eds.). 2015. *Numbers and Nerves: Information, Emotion, and Meaning in a World of Data*. Corvallis, OR: Oregon State University Press.
- Smith, Huston. 2001. *Why Religion Matters: The Fate of the Human Spirit in an Age of Disbelief*. New York: HarperSanFrancisco.
- Soliman, Tamer and Glenberg, Arthur M. 2014. 'The embodiment of culture.' In Shapiro, Lawrence (ed.): *The Routledge Handbook of Embodied Cognition*. London and New York: Routledge. pp.207-19.
- Sollereder, Bethany N. 2018. 'God and Natural Disasters.' In Billingsley, B.; Abedin, M; and Chappell, K (eds.): *A Teacher's Guide to Science and Religion in the Classroom*. Abingdon and New York: Routledge. pp.105–13.
- Speer, N. K.; Reynolds, J. R.; Swallow, K. M.; and Zacks, J. M. 2009. 'Reading stories activates neural representations of visual and motor experiences,' *Psychological Science* 20, pp.989-999.
- Stone, Jerome A. 1992. *The Minimalist Vision of Transcendence: A Naturalist Philosophy of Religion*. Albany: State University of New York Press.
- Stone, Jerome A. 2008. *Religious Naturalism Today: The Rebirth of a Forgotten Alternative*. Albany: State University of New York Press.
- Swimme, Brian. 1984. *The Universe is a Green Dragon: A Cosmic Creation Story*. Santa Fe: Bear and Company.

- Swimme, Brian. 2005. 'A Cosmic Creation Story.' In Hutchingson, James E. *Religion and the Natural Sciences: The Range of Engagement*. Fort Worth, TX and London: Harcourt Brace Jovanovich College Publishers.
- Swimme, Brian and Berry, Thomas. 1994. *The Universe Story: From the Primordial Flaring Forth to the Ecozoic Era – A Celebration of the Unfolding of the Cosmos*. San Francisco: HarperCollins.
- Swimme, Brian and Tucker, Mary Evelyn. 2011. *Journey of the Universe*. New Haven, CT and London: Yale University Press.
- Tan, E. S. and Frijda, N. 1999. 'Sentiment in Film Viewing.' In Plantinga, C. and Smith, G. M. (eds.): *Passionate Views: Film, Cognition, and Emotion*. Baltimore: Johns Hopkins University Press. pp.48-64.
- Tan, Tobias. 2016. 'Corporeality in Religious Experience: Embodied Cognition in Religious Practices.' In Hardtke, Thomas; Schmiedel, Ulrich; and Tan, Tobias (eds.): *Religious Experience Revisited: Expressing the Inexpressible?* Leiden: Brill. pp.207-226.
- Tan, Tobias. 2017. *Corporeal Theology: The Nature of Embodied Understanding in Light of Embodied Cognition*. DPhil thesis, Oxford University.
- Taves, Ann. 2009. *Religious Experience Reconsidered: A Building-Block Approach to the Study of Religion and Other Special Things*. Princeton and Oxford: Princeton University Press.
- Taylor, Charles. 1989. *Sources of the Self: The Making of the Modern Identity*. Cambridge, MA: Harvard University Press.
- Taylor, Charles. 2007. *A Secular Age*. Cambridge, MA: Harvard University Press.
- Taylor, Charles. 2011. 'Disenchantment-Reenchantment.' In Levine, George (ed.): *The Joy of Secularism: 11 Essays for How We Live Now*. Princeton and Oxford: Princeton University Press. pp.57-73.
- Tobias, Ronald B. 1995. *Twenty Master Plots and How to Build Them*. London: Platkus.
- Tolstoy, Leo. 2006. *War and Peace*. Briggs, Anthony (trans.). London: Penguin. Work originally published 1868-9.
- Tweed, Thomas. 2006. *Crossing and Dwelling*. Cambridge, MA: Harvard University Press.
- Varela, Francisco; Thompson, Evan; and Rosch, Eleanor. 2016. *The Embodied Mind: Cognitive Science and Human Experience*. 2nd edition. Cambridge, MA and London: MIT Press. Work originally published 1991.

- Vásquez, Manuel. 2011. *More than Belief: A Materialist Theory of Religion*. Oxford: Oxford University Press.
- Velleman, J. David. 2003. 'Narrative Explanation,' *The Philosophical Review* 112(1), pp.1-25.
- Vernon, Mark. 2007. *After Atheism: Science, Religion, and the Meaning of Life*. Basingstoke: Palgrave MacMillan.
- von Mossner, Alexa Weik. 2017. *Affective Ecologies: Empathy, Emotion, and Environmental Narrative*. Columbus: Ohio State University Press.
- von Uexküll, Jakob. 2010. *A Foray into the Worlds of Animals and Humans*. O'Neil, Joseph D. (trans.). Minneapolis and London: University of Minnesota Press. Work originally published 1934.
- Wallis, James. 2007. 'Making Games That Make Stories.' In Harrigan, Pat and Wardrip-Fruin, Noah (eds.): *Second Person: Role-Playing and Story in Games and Playable Media*. Cambridge, MA: MIT Press. pp.69-80.
- Ward, Graham. 2012. 'Reading to Live: Miracle and Language,' *Religion and Literature* 44(1), pp.1-21.
- Ward, Graham. 2014. *Unbelievable: Why We Believe and Why We Don't*. London and New York: I. B. Tauris.
- Ward, Graham. 2018. *Unimaginable: What We Imagine and What We Can't*. London and New York: I. B. Tauris.
- Ward, Graham. 2019. 'Aesthetics, Music, and Meaning-Making,' *Religions*, Vol. 10(3).
- Watts, Fraser. 2013. 'Embodied Cognition and Religion,' *Zygon* 48(3), pp.745-758.
- Weber, Max. 1964. *The Sociology of Religion*. Boston: Beacon Press. Work originally published 1922.
- Weber, Max. 2015. 'Science as a Vocation.' In Lassman, P and Velody, I (eds.), with Martins, H. *Max Weber's 'Science as a Vocation.'* London and New York: Routledge. Work originally published 1919.
- Weinberg, Steven. 1983. *The First Three Minutes*. Toronto: Bantam Books. Original work published 1977.
- Werner, Karsten; Raab, Markus; and Fischer, Martin H. 2019. 'Moving arms: the effects of sensorimotor information on the problem-solving process,' *Thinking and Reasoning* 25(2), pp.171-191.

- Whitehead, Alfred North. 1925. *Science and the Modern World*. New York: The Free Press.
- Wilson, A. N. 1999. *God's Funeral*. London: John Murray.
- Wilson, Edward O. 1978. *On Human Nature*. Cambridge, MA: Harvard University Press.
- Wilson, Edward O. 1998. *Consilience: The Unity of Knowledge*. London: Little, Brown and Company.
- Wilson, Edward O. 2010. *Anthill*. New York and London: W. W. Norton and Co.
- Wilson, Timothy D. 2002. *Strangers to Ourselves: Discovering the Adaptive Unconscious*. Cambridge, MA and London: Belknap Press.
- Wilson-Mendenhall, Christine D. and Barsalou, Lawrence W. 2016. 'A Fundamental Role for Conceptual Processing in Emotion.' In Barrett, Lisa Feldman; Lewis, Michael; and Havilland-Jones, Jeannette M. (eds.): *Handbook of Emotions* (4th edition). New York: The Guilford Press. pp.547-63.
- Yao, Wan X *et al.* 2013. 'Kinesthetic imagery training of forceful muscle contractions increases brain signal and muscle strength,' *Frontiers in Human Neuroscience* 7.
- Yong, Ed. 2017. *I Contain Multitudes: The Microbes Within Us and a Grander View of Life*. London: Vintage.
- Yorke, John. 2013. *Into the Woods: How stories work and why we tell them*. London: Penguin.
- Zajonc, R. B. 1980. 'Feeling and thinking: Preferences need no inferences,' *American Psychologist* 35, pp.151-175.